Learning Skills – Solutions to Problems faced by students

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Foreword

The thesis report is submitted in partial fulfillment of the academic requirements for the degree of Bachelor of Science in Computer Science and Engineering to the Computer Science and Engineering department at BRAC University, 66 Mohakhali, Dhaka-121, Bangladesh.

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As the supervisor of the candidates I have approved this dissertation for submission.

……

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Declaration

The whole dissertation, unless specifically indicated to the contrary in the text, is our original work, and has not been submitted in part, or in whole for the degree or diploma to any other university.

…… ……

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Approval Sheet

The thesis report titled **"Mind Map"** has been submitted to the following respected members of the Board of Examiners of the Faculty of Engineering in partial fulfillment of the academic requirements for the degree of Bachelor of Science in Computer Science and Engineering on April 18, 2006 by the following students and has been accepted as satisfactory.

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Abstract

Mind Mapping is a powerful tool that can be use for organizing, brainstorming, remembering, planning, taking lecture notes, essay writing etc. There are software available that help, to draw Mind Maps. Student, however find those software difficult to use. This is not because software are unfriendly. Our research has shown that, students find it difficult to formulate questions that are a pre-requisite to drawing any branch of a Mind Map. Our work involves:

- Finding areas in which mind-maps can help student of BRAC University.
- Suggests question in each area to help students complete a particular Mind Map.
- Implement a tool which can help user to do a Mind Map easily.

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Chapter 1 Introduction

1.1 Background

In our country student generally come from traditional rote learning process. In school even they memorize essay for the exam. So, student fined difficulty with:

- Taking Lecture Notes
- Doing Assignments
- Brainstorming
- Presentation
- Projects
- Managing Time

They have no capability of thinking or brainstorming. They depend on only teacher's hand note and guide books. Our research is, why university students find difficulty with Taking Lecture Notes, Doing Assignments, Brainstorming, making Presentation, doing Projects, Managing Time. Also find the solution. For help of university students there are many tools. From those tools we chose "Mind Map". Mind Maps are tools which help you think and learn.

1.2 Objective

Mind Mapping is a powerful tool that can be use for organizing, brainstorming, remembering, planning, taking lecture notes, essay writing etc. There are software's available that help, to draw Mind Maps. Student, however find those software difficult to use. This is not because software's are unfriendly. Our research has shown that, students find it difficult to formulate questions that are a pre-requisite to drawing any branch of a Mind Map. Our work involves:

- Finding areas in which mind-maps can help student of BRAC University.
- Suggests question in each area to help students complete a particular Mind Map.
- Implement a tool which can help user to do a Mind Map easily.

Chapter 2 What Is Mind Map

2.1 What Is Mind Map

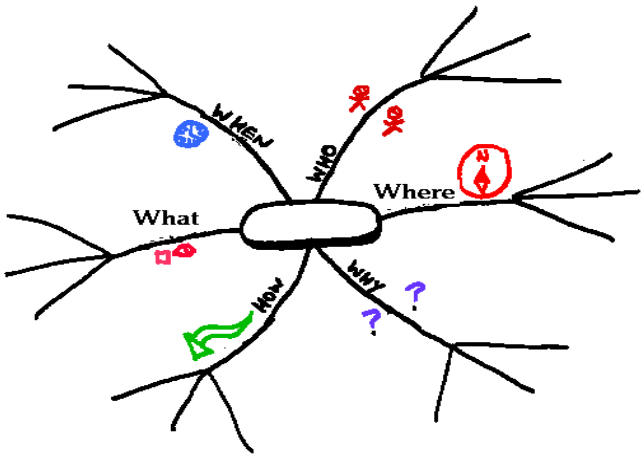


Figure 2.1: Sample Mind Map concept

2.1.1 Defination

1. A **Mind Map** is a diagram used to represent words, ideas, tasks or other items linked to and arranged radially around a central key word or idea. It is used to generate, visualize, structure and classify ideas, and as an aid in study, organization, problem solving, and decision making.
2. **Mind Map** is an image-centered diagram that represents semantic or other connections between portions of information. By presenting these connections in a radial, non-linear graphical manner, it encourages a brainstorming approach to any given organizational task, eliminating the hurdle of initially establishing an intrinsically appropriate or relevant conceptual framework to work within.
3. A **Mind Map** is similar to a semantic network or cognitive map but there are no formal restrictions on the kinds of links used.The elements are arranged intuitively according to the importance of the concepts and they are organized into groupings, branches, or areas. The uniform graphic formulation of the semantic structure of information on the method of gathering knowledge, may aid recall of existing memories.

4. A **Mind Map** is similar to a road map to help you on your journey. It will provide an overview or overall picture of a particular subject and help you plan your route or choices. The Mind Map stores large amounts of information efficiently, but the exciting part for me was discovering that the final Mind Map is not only easy to read and look at, but also uses the potential of the brain in a very exciting way. It helps develop new brain skills, which are often overlooked by traditional teaching methods.
5. A **Mind Map** consists of a central word or concept, around the central word you draw the 5 to 10 main ideas that relate to that word. You then take each of those child words and again draw the 5 to 10 main ideas that relate to each of those words. In this way a large number of related ideas can quickly be produced with virtually no mental effort. The concept of 'writers block' is hard to understand once you have grasped the use of this simple technique!
6. **Mind Map** are tools that help us think and remember better, creatively solve problems and take action. The Mind Map encourages creativity and flexibility, and you need these to make your resolutions happen! Mind Maps help you think outside the box. If you've already made your list, try turning it into a Mind Map. If you haven't made your list yet, try this strategy.
7. The **Mind Map** is an expression of Radiant Thinking and is therefore a natural function of the human mind. It is a powerful graphic technique which provides a universal key to unlocking the potential of the brain. The Mind Map can be applied to every aspect of life where improved learning and clearer thinking will enhance human performance. The Mind Map has four essential characteristics:
    - ❑ The subject of attention is crystallized in a central image
    - ❑ The main themes of the subject radiate from the central image on branches
    - ❑ Branches hold a key image/word printed on the associated line - details radiate out
    - ❑ The branches form a connected nodal structure
8. A **Mind Map** is a powerful graphic technique which provides a universal key to unlock the potential of the brain. It harnesses the full range of cortical skills – word, image, number, logic, rhythm, color and spatial awareness – in a single,

uniquely powerful manner. In so doing, it gives you the freedom to roam the infinite expanses of your brain. The Mind Map can be applied to every aspect of life where improved learning and clearer thinking will enhance human performance.

2.2 Introduction to Mind Mapping

Mind Map, invented by Tony Buzan, diagram the structure of ideas in an associative manner which is more representative of how ideas are stored in the brain.

2.2.1 History of Mind Map

Mind Maps (or similar concepts) have been used for centuries, for learning, brainstorming, memory, visual thinking, and problem solving by educators, engineers, psychologists and people in general. Some of the earliest examples of Mind Maps were developed by Porphyry of Tyros, a noted thinker of the 3rd century as he graphically visualised the concept categories of Aristotle. Ramon Llull also used these structures of the Mind Map form.

The semantic network was developed as a theory to understand human learning, and developed into Mind Maps by Dr Allan Collins, and the noted researcher M. Ross Quillian during the early 1960s. As such, due to his commitment and published research, and his work with learning, creativity, and graphical thinking, Dr Allan Collins can be considered the father of the modern Mind Map.

Figure 2.1: Tony Buzan

People have been using image-centered radial graphic organization techniques referred to variably as mental or generic Mind Maps for centuries in areas such as engineering, psychology, and education, although the claim to the origin of the Mind Map has been made by a British popular psychology author, **Tony Buzan.** He claimed the idea was inspired by Alfred Korzybski's general semantics as popularized in science fiction novels, such as those of Robert A. Heinlein and A. E. van Vogt. He argues that 'traditional' outlines rely on the reader to scan left to right and top to bottom, whilst what actually happens is that the brain will scan the entire page in a non-linear fashion. He also uses popular assumptions about the cerebral hemispheres in order to promote the exclusive use of Mind Mapping over other forms of note making.

The Mind Map continues to be used in various forms, and for various applications including learning and education (where it is often taught as 'Webs' or 'Webbing'), planning and in engineering diagramming.

When compared with the earlier original concept map (which was developed by learning experts in the 1960s) the structure of a Mind Map is a similar, but simplified, radial by having one central key word.

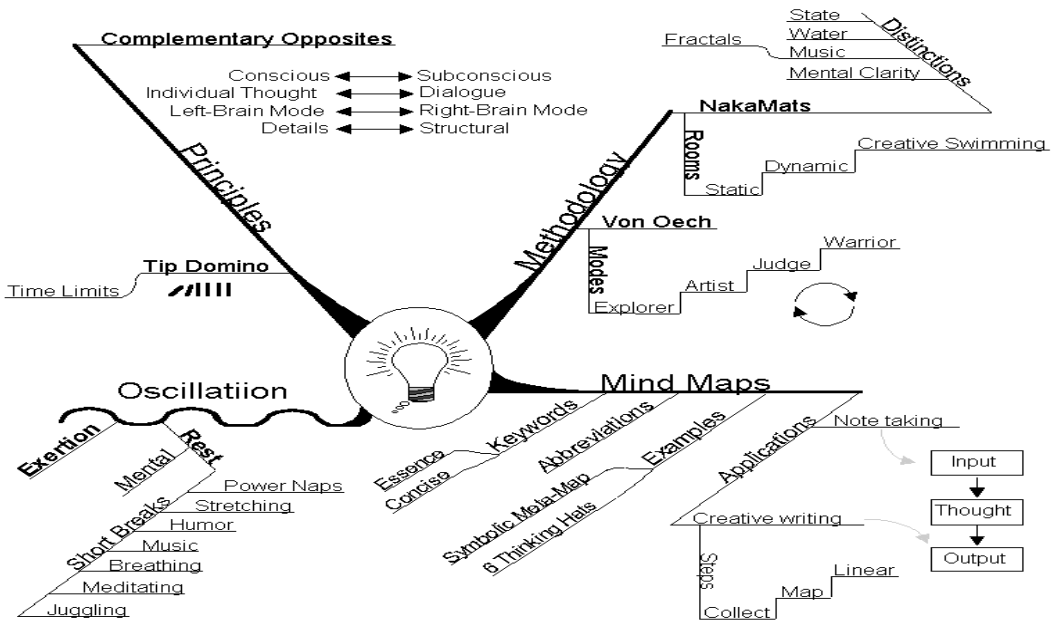


Figure 2.2: Mind Mapping tool you can use to see the picture in new ways.

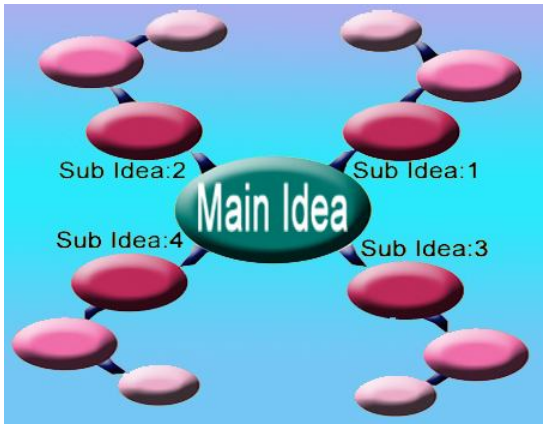
2.2.2 Basic Principles

- ❑ The subject of attention is crystallized in a central image
- ❑ The main themes of the subject radiate from the central image on branches.
- ❑ Branches hold a key image / word printed on the associated line - details radiate out
- ❑ The branches form a connected nodal structure.

2.2.3 Key features of Mind Map

1. Organization the Idea
2. Using Key Words
3. Association
4. Clustering
5. Visual Memory –
   - ❑ Print the key words
   - ❑ Use color
   - ❑ Symbols
   - ❑ Icons
   - ❑ 3D-effects
   - ❑ Arrows
   - ❑ Outlining groups of words
6. Outstanding ness - every Mind Map needs a unique center Conscious involvement

2.2.4 Example



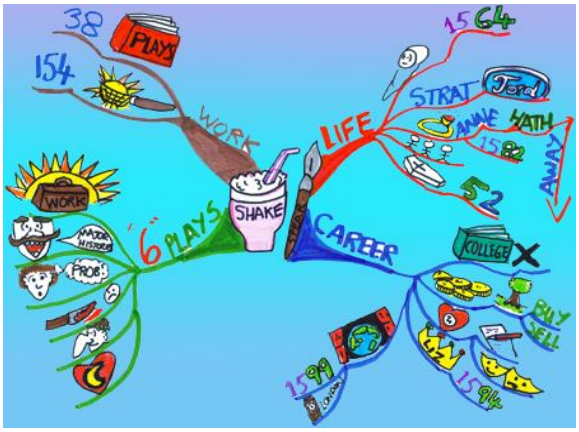


Figure 2.3: Mind Map for career planning

Here is one example of Mind Map. From comparing two pictures can know what the main idea is?, what are sub ideas.

Chapter 3 Application & Benefits

3.1 Applications

3.1.1 Application Of Mind Map

Mind Maps have many applications in

- Personal life
- Family life
- Educational
- Business situations
- Including notetaking
- Brainstorming
- Summarizing
- Takeing notes
- Presentation

Some of the literature around mind-mapping has made claims that one can find the

- Perfect lover
- Combat bullying
- Persuade clients
- Develop intuitive powers
- Create global harmony

Some other applications of Mind Mapping include:

- Making Choices
- Organizing Your Own Ideas
- Organizing Other Peoples Ideas
- Memory

- Creative Thinking
- The Group Mind Map
- Self-Analysis
- Problem-Solving
- The Mind Map Diary
- Family Study and Story Telling
- Educational Thinking
- Teaching
- The Master Mind Map
- Business and Professional Meetings
- Presentations
- Generating ideas and thinking creatively
- Organizing processes
- Tracking progress
- Preparing essay/report
- learning/studying - note taking, review, recall and exam preparation;
- decision making - prioritizing, clarification e.g. solving problems;
- Preparing key documentation for reports or projects.
- Creating a CV
- Working towards
- Charter ship
- Revalidation
- Certification
- Fellowship of CILIP
- Whatever you want to use it for

Mindmaps can be drawn by hand, either as 'rough notes', for example, during a lecture or meeting, or can be more sophisticated in quality.

3.1.2 How Mind Mapping Help

Note taking

As a means of note taking Mind Maps have several advantages over other systems:

- You can place each new idea in the right place, regardless of the order of presentation.
- It encourages the reduction of each concept to a single word.
- The resultant Mind Map can be 'seen' by the eye and memorized by your visual memory which has been shown to be almost perfect.

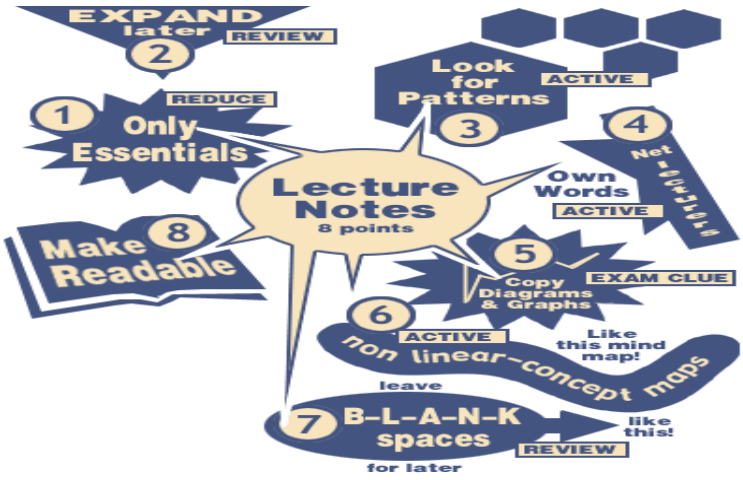


Figure 3.1: Mind Map of Note taking

Creative Writing & Report Writing

A Mind Map lets you rapidly produce an almost infinite number of ideas, and at the same time organize them by placing each idea next to what it is related to. This makes a very powerful tool for creative writing or report writing, where it is very important to get down all your ideas first. It is then a trivial matter to read the Mind Map and write a sentence or paragraph on each 'key word'.

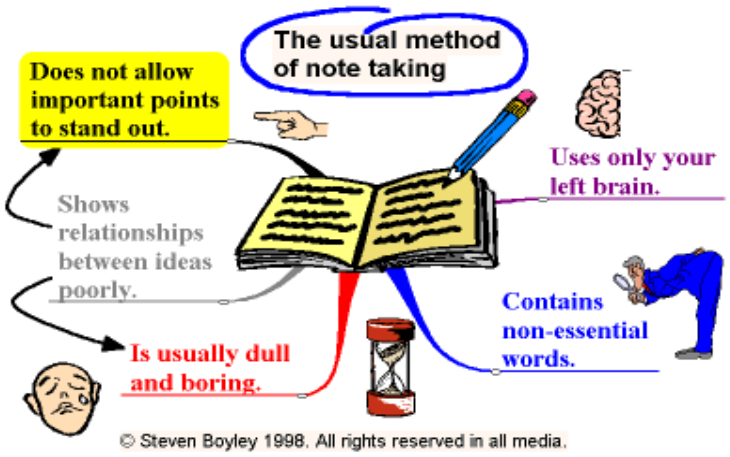


Figure 3.2: Mind Map of Creative Writing & Report Writing

Studying the easy way

Instead of simply reading a book on some topic, next time try using a Mind Map while you read. Just draw your central word and then begin reading, every time you read some idea that strikes you as important or interesting, just add it onto your Mind Map in the appropriate place.

When you have finished reading the book you will have a one page Mind Map which summarizes everything of interest in that book. You will probably also have added several things which you thought up yourself during your reading. The act of creating the Mind Map will have greatly increased how much you absorbed from the book, and if you ever want to review the topic all you need to do is to look at the Mind Map. If you want to learn the information very solidly then try to redraw the Mind Map from memory a few times. You will find it very easy.

Figure 3.3: Mind Map of Studying the easy way

Studying as a group (or family)

A group of people can work together to produce a single Mind Map by following these steps:

- ❑ Individually draw Mind Maps on what you already know about the subject.
- ❑ Draw a group Mind Map combining what you already know.
- ❑ Decide what you need to learn based on this group Mind Map
- ❑ Individually study the material, all covering the same areas for depth of knowledge or all covering different areas for speed as appropriate. Each person completing the Mind Maps by his/her self.
- ❑ Again combine as a group and create a final master group Mind Map.

Families who have started regular weekend study days as a hobby have benefited tremendously. Children typically go from average or below average to second or third from the top in all subjects and the parents also find themselves excelling at work. One Swedish family was besieged by neighborhood children asking if they could join in the fun!

Meetings & Think Tanks

As soon as you write something up on a white board you have immediately lost the creativity which everyone has. So any creative meeting should always start by people spending a couple of minutes individually Mind Mapping. Then as a way of running a meeting a master Mind Map on a white board allows every idea or statement to be recorded and placed in an appropriate place so that it can then be discussed at a sensible time. Also no one feels ignored as all ideas are placed on the Mind Map.

Giving a Talk

When giving a talk a set of notes in the form of a single Mind Map has several advantages over other memory aids:

- **Brief:** Only a single page is needed
- **Not reading:** As ideas are reduced to single words you will not be 'reading' your speech
- **Flexibility:** If someone asks a question you can move instantly to the place on your Mind Map which relates to that question and then return to where you were without loosing yourself in a pile of cards or papers

Similarly to a road map, a Mind Map will

- Give you an overview of a large subject/area.
- Enable you to plan routes/make choices and let you know where you are going and where you have been.
- Gather and hold large amounts of data for you.
- Encourage problem solving by showing you new creative pathways.
- Enable you to be extremely efficient.
- Be enjoyable to look at, read, muse over and remember.
- Attract and hold your eye/brain.
- Let you see the whole picture and the details at the same time.

3.2 Benefits

3.2.1 Benefits of Mind Map

Table 1.1: Benefits of Mind Map

Uses	Benefits
Learning	❑ Reduce those 'tons of work'. ❑ Feel good about study, revision and exams. ❑ Have confidence in your learning abilities
Over viewing	❑ See the whole picture, the global view, at once. ❑ Understand the links and connections
Concentrating	❑ Focus on the task for better results ❑ Using all your cortical skills attracts your attention
Memorizing	❑ Easy recall ❑ 'See' the information in your mind's eye
Organizing	❑ Easy recall ❑ Be on top of all the details for parties, holidays, projects or any other subject
Presenting	❑ Speeches are clear, relaxed and alive. You can be at your best
Communicating	❑ In all forms with clarity and conciseness
Meetings	❑ From planning to agenda, to chairing, to taking the minutes...the jobs are completed with speed and efficiency
Training	❑ From preparation to presentation, they make the job easier and much faster
Thinking	❑ Having a method to analyze thoughts - almost a 'way station' for them
Negotiating	❑ All issues, your position and maneuverability on one

	sheet
Brain Blooming	❑ The new brain-storming in which more thoughts are generated and appropriately assessed

Chapter 4 How to make Mind Map

4.1 How to make a Mind Map

4.1.1 Mind Map in 8 steps

Step 1: Start at the center of the page

Our mind focuses on the center of the page. That's why Mind Mapping begins with a word or image that symbolizes what you want to think about placed in the middle of the page.

Step 2: Don't be serious!

Write down or draw the first things that come up in your mind when you start to think about related issues, persons, object, goals... Put your thoughts around the central thought. These can be everything. Even if they look strange or unimportant.

Step 3: Free associate

As ideas emerge, print one or two word descriptions of the ideas on lines branching from the central focus. Allow the ideas to expand outward into branches and sub- branches. Put down all ideas without judgment or evaluation.

Step 4: Think as fast as you can

Come up with an explosion of ideas. Translate them in words, images, codes or symbols.

Step 5: There are no boundaries

Think "out-of the-box". Everything is possible. Use wild colors, fat colored markers, crayons, or skinny felt tipped pens. You haven't lived until you've Mind Mapped an idea with hot pink and day-glo orange crayons.

Step 6: Don't judge too fast

Again, everything is possible. Unrelated issues might me relevant later on. Think like you are brainstorming. Otherwise your mind will get stuck like a record in that "unrelated word" groove and you'll never generate those great ideas.

Step 7: Go, go, go....

Keeps your hand moving. If ideas slow down, draw empty lines, and watch your brain automatically find ideas to put on them. Or change colors to reenergize your mind. Stand up and Mind Map on an easel pad to generate even more energy.

Step 8: Add relationships and connections

Sometimes you see relationships and connections immediately and you can add sub-branches to a main idea. Sometimes you don't, so you just connect the ideas to the central focus. Organization can always come later; the first requirement is to get the ideas out of your head and onto the paper.

4.1.2 Mind Map Laws

Mind Map law suggested by Tony Buzan. These are the brain-reflecting foundation structures of a Mind Map. The more of them you follow, the more effective your Mind Map.

- Start in the centre with an image of the topic, using at least 3 colors.
- Use images, symbols, codes and dimensions throughout your Mind Map.
- Select key words and print using upper or lower case letters.
- Each word word/image must be alone and sitting on its own line.
- The lines must be connected, starting from the central image. The central lines are thicker, organic and flowing, becoming thinner as they radiate out from the centre.

- Make the lines the same length as the word/image.
- Use colors - your own code - throughout the Mind Map.
- Develop your own personal style of Mind Mapping.
- Use emphasis and show associations in your Mind Map.
- Keep the Mind Map clear by using Radiant hierarchy, numerical order or outlines to embrace your branches.

4.2 Guidline for draw a Mind Map

An idea map is similar to a Mind Map but does not adhere to the above guidelines. Rules are constantly broken based on the purpose and application of the Map.

STAGE ONE

The first stage involves putting a title in bold, capital letters in the centre of your page. Although this example does not use pictures, it is best to use some kind of picture to help with recall of information.

This example is not perfect. To increase effectiveness, Mind Maps should preferably include:

- Pictures
- Color
- Memorable words / cues to memory

Figure 4.1: Step one to make a Mind Map

STAGE TWO

The next stage involves adding main branches to your diagram that represent each of the areas of the topic being studied, or its related topics.

The branches should extend far enough from your central image to avoid over-crowding the page and confusing information.

Ideally, pictures should be used to represent themes and concepts. It helps if the branches are different colors and/or shapes.

The branches should be:

- Bold
- Bright
- Colorful
- Labeled memorably and clearly, preferably in color (not shown in this example).

You should include as many aids to recall, such as pictures and key words, as you can.

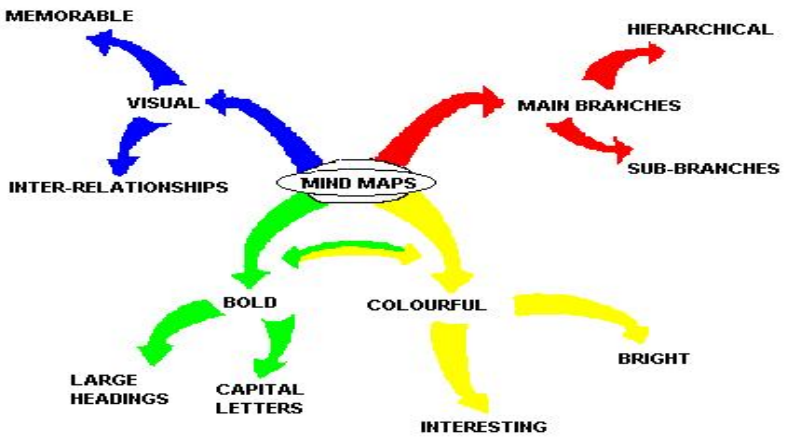


Figure 4.2: Step two to make a Mind Map

STAGE THREE

The next stage involves adding sub-branches to your hierarchical diagram. These branches are also colored. You may find it helpful to use different shades of the color used for the main branches. Continue to label in bold, colorful lettering. Continue using simple images to represent concepts and to make sense of your Mind Map.

Your completed mind - map or diagram should be:

- ❑ Bright
- ❑ Colorful
- ❑ Visually bold
- ❑ Aesthetically pleasing
- ❑ Ordered
- ❑ Meaningful to you
- ❑ Inclusive of Inter-relationships between headings / topics

4.2.2 Guidline for draw a Mind Map

Look for relationships

Use lines, colors, arrows, branches or some other way of showing connections between the ideas generated on your Mind Map. These relationships may be important in you understanding new information or in constructing a structured essay plan. By personalizing the map with your own symbols and designs you will be constructing visual and meaningful relationships between ideas which will assist in your recall and understanding.

Draw quickly on unlined paper without pausing, judging or editing

All of these things promote linear thinking and the idea of Mind Mapping is to think creatively and in a non-linear manner. There will be plenty of time for modifying the information later on but at this stage it is important to get every possibility into the Mind Map. Sometimes it is one of those obscure possibilities that may become the key to your knowledge of a topic.

Write down key ideas

Some students find that using capital letters encourages them to get down only the key points. Capitals are also easier to read in a diagram. You may, however, wish to write down some explanatory notes in lower case. Some students do this when they revisit the Mind Map at a later date while others write in such things as assessment criteria in this way.

Put main idea in the centre

Most students find it useful to turn their page on the side and do a Mind Map in "landscape" style. With the main idea or topic in the middle of the page this gives the maximum space for other ideas to radiate out from the centre.

Leave lots of space

Some of the most useful Mind Maps are those which are added to over a period of time. After the initial drawing of the Mind Map you may wish to highlight things, add information or add questions for the duration of a subject right up until exam time. For this reason it is a good idea to leave lots of space.

Chapter 5 Mind Map Software

5.1 Mind Mapping software

Mind Mapping software has become something of an industry in itself in recent years. The term Mind Map has primarily been popularised by Tony Buzan. The market leader among commercial applications is MindManager, with 72.6% of users according to the recent survey by Innovation Tools. The next is an open source application, FreeMind, with 10.4%. Most of the software appears to be aimed at business users and does not conform to all of Buzan's Mind Mapping Laws, although HeadCase makes this claim.

Mind Mapping is a successful type of study software as there is good evidence supporting its beneficial effects on learning/study efficiency, possibly by up to 15% (Farrand et al,2002) over making notes in a conventional way. Some Mindmapping software will be 3d, though full 3d functionality is difficult to achieve with the forms of interface devices readily available to users. Some Mapping programs will also incorporate other proven learning optimization techniques including Electronic flashcard style testing.

5.1.1 List of Mind Map Software

- **Aviz ThoughtMapper** (PC)
- **BrainMine** (PC)
- **ConceptDraw MINDMAP** (PC/Mac)
- **Eminec MYmap** (PC)
- **FreeMind** (PC/Mac/Linux)
- **HeadCase** (PC)
- **Ideagraph** (beta-PC)
- **iMindMap** (PC/Mac)
- **Inspiration** (PC/Mac)

- **Map it!** (PC)
- **Mayomi online mapping tool**
- **Mind Pad** (PC)
- **MindApp** (PC)
- **MindCad** (Mac)
- **MindChart** (PC)
- **MindGenius** (PC)
- **MindManager** (PC/Mac)
- **MindMapper** (PC)
- **MindVisualizer**
- **NovaMind** (PC/Mac)
- **OpenMind** (PC)
- **PiCoMap** (Palm OS)
- **Pocket Mindmap** (Pocket PC)
- **SMART Ideas** (PC/Mac)
- **ThinkGraph** (PC)
- **VisiMap** (PC)
- **MindManuals**- Supplier of Mind Mapping software for MindManager.
- **MindPlugs** - Plug-in for Mind Manager that allows live calculating of mathematical formulas.
- **SmartDraw**- Business graphics software that includes mindmapping and other functions.
- **FreeMind** - Free software. Java based, so platform independent.
- **MyMind** - Simple but versatile free software for Mac OS X.
- **Mind-Pad** - Object-orientated mindmapping software for Windows.
- **Visual Mind** - Windows
- **DeepaMehta** - Networked semantic desktop
- **Inspiration** **Mac and Windows** - Educational packages for kids and students.

5.2 Classification of Software

5.2.1 Open-source software

There are a number of free/libre/open-source software that allow the creation of or otherwise support Mind Maps.

- **FreeMind** is a GNU GPL-licenced mind-mapping application written in Java
- **WikkaWiki** is a free PHP/MySQL wiki engine with native support for FreeMind maps.
- **Pimki** is a wiki engine that includes Mind Maps rendered with GraphViz.
- **VYM (View Your Mind)** is Free Software (GPL) for UNIX/Linux and Mac OS X written in C++.
- **Kdissert is Free Software (GPL)** for UNIX/Linux, for producing general-purpose documents using mindmaps: articles, presentations, and reports.
- **DeepaMehta** is a Free Software mind-mapping program written in Java.
- **Labyrinth** is a Free Software mind-mapping program written for the GNOME desktop using Python and Gtk+
- **MindRaider** can be used to create Mind Maps. Written in Java.
- If you want an online version, try out Bubbl.us. Flash/Ajax-based
- **PlanFacile** is a compiler under GNU GPL-licence that generates documents from a mind-map composed of ideas linked together by dependencies. So the handled mind-maps are not trees, but real graphs.

5.2.2 Freeware software

- IHMC CmapTools is a freeware web based Mind Mapping application. It allows for online collaboration within the mindmaps.
- Bubbl.us is a free web based brainstorming application. Allows collaboration and posting Mind Maps to the web.
- Gliffy is a freeware web based Mind Mapping and drawing application.
- Compendium is a free Mind Mapping application created by the Open University.

- MindMeister is a 100% web-based collaborative mindmapping tool. Using only a standard web browser you can manage your own mindmaps, or collaborate with others in real-time on the same mindmap in brainstorming mode. *(Unavailable as of 2007-02-24 -- the project is in "private beta")*
- Mindomo is a free web-based Mind Mapping application with an impressive set of features: rich text topics, rich text notes, hyperlinks, task info, topic images, various topic layouts, boundary around topics, etc...
- MindPlan is a Lotus Notes based application for collaborative mindmapping. The personal edition is available for free.

5.2.3 Proprietary software

There are many pieces of proprietary software (in alphabetical order) that allow the creation of Mind Maps.

- 3D Topicscape takes Mind Mapping and concept mapping into 3D with flying and zooming.
- Aibase maps combine colorful trees, concept maps, tables and more.
- ArtificialMemory web-based text/semantic thinking tool using Semantic Web technology.
- Aviz Thought Mapper is a cross-platform Java-based mind-mapping tool. On Windows it integrates with Microsoft Office.
- Axon Idea Processor is a visual diagramming tool that includes support for Mind Mapping.
- BrainMine's major advantages come from an extensive graphics (icon/image) package, a convenient overview map, and an object attribute panel. The final products can be visually impressive, but the interface can be overwhelming (even distracting) for basic idea organizing.
- Buzan's iMindMap - Tony Buzan's official Mind Mapping software product that allows you to create fully organic freehand drawn Mind Maps. A cross platform Java-based tool.

- ConceptDraw MINDMAP Mind Mapping, Brainstorming and Project Planning software that works both on Windows and Mac OS X
- Cornerstone is a visual thinking tool that supports a variety of visual styles.
- HeadCase First to comply with Buzan's Mind Mapping Laws and create "hand-drawn" Mind Maps. Windows-only.
- i2Brain takes the next step - away from a flat tree to a network of ideas with depth. Multi-platform.
- InfoRapid KnowledgeMap achieves some of the same MindMap type organization, but is constructed to seem more like an outline.
- Inspiration is a cross-platform Mac OS X, Windows and Palm visual learning application which recently (version 8) introduced true mind-mapping support.
- I-Navigation is a focus+context mind-mapping application.
- MindCad Incubator is a visual thinking tool for Mac OS X featuring multiple worksheets and the ability to link to external desktop documents and web pages.
- MindGenius is proprietary mind-mapping software for Windows with export capability.
- MindManager is proprietary mind-mapping software running on both Microsoft Windows and Mac OS X, and integrates with Microsoft Office.
- Mind Map/LX Is a free Mind Map program that runs on the HP 200lx PDA. Also with a helper program it is able to run on any dos PC.
- MindMapper is a full-featured visual thinking and Mind Mapping tool for Microsoft Windows with interoperability with Microsoft Office.
- MyMind is a Mind Mapper with built-in outlining functionality. It is "donationware" for Mac OS X.
- Modelmaker is a visual CASE tool which supports UML diagrams and mindmaps.
- Nelements KOS is a 3d Mind Mapping tool.
- NovaMind is a proprietary mind-map application for Mac OS X and Microsoft Windows. Features include flexible branch shapes, a branch proposal system, integrated screenplay support, and OPML export

- OpenMind - software used by British schools
- PAUX PAUX is a software to develop, manage and publicize dynamic individualized content by linking reusable semantic content objects semantically. These objects are to make knowledge available as filterable content for websites, Semantic Wiki, detailed-evaluated eLearning and individualized print media. The data model is a multidimensional concept map.
- Pocket Mindmap - Mobile mind-mapping on the Pocket PC.
- SmartDraw, a Visio-like product.
- Smart Ideas is another visual diagramming tool with a unique "big picture" view.
- Spark-Space comes in various editions for enterprise or education. Available on Windows, MacOS/X, Linux in English, French, Spanish, German and Dutch.
- Thinkmap - uses a Java based SDK kit in an XML-based configuration language scripting toolset with syntax similar to that used for Cascading Style Sheets (CSS) and other scripting languages. Pre-configured building blocks include: Spider, Hierarchy, Clustering, and Chronology. The VisualThesauras product is an example of the use of this technology.
- Thinkgraph is a currently free mind-mapping program for Windows
- Thinking with Pictures is a visual thinking tool designed for children.
- Visual Concept touts itself as a Mind Mapping program. The final product is more like Visio, but seems to emphasize hexagon shaped maps.
- Visual Mind is another mind-mapping application.

General Knowledge Base is a good tool for Mind Mapping. It has the ability to create unlimited categories, and sub categories, attach unlimited topics and connect a topic to multiple categories. Search, sort, and filter features make it ideal to find things that are hard to categoriz.

5.3 Problem of those Software

- No so much user franidly
- Not ask question to the user

- User don’t find interest with those software
- After a certain time they can’t implement Mind Map
- They think this is time consuming
- They think this is not helpful for all work.
- User lost interest to complete their Mind-map.

Chapter 6 Research

6.1 At TARC

We do a little research on BRAC university student. We go in TARC (Savar) on four occasions. There is no doubt that mind map is a very useful toll to accomplish any task leniently. Sometimes user can realize the effectiveness of mind map but can't be able to create it properly at the very beginning. After knowing about the mind map, a lot of question arises in the user's mind. At first they thought, is it effective for his or her profession, if it is then how?

For example, we organize a workshop about the mind map for the student of the MGB department of the BRAC University, where we told about the mind map and its usefulness. We told them how to draw mind map and also showed an example of a mind map. Some student get really very interest on it and want to know more, but some student listen only for listen. The question that arise in the mind of all the students at the end of the session, was how much effective and beneficial it is for the BBA student? Why they use mind map? Is it time saving or time wasting?

Now the problems start with the drawing or creating mind map. Users have to do lots of things but they are confused to arrange the sequence. Also confused, whether they are following the correct rules of mind map or not. To find out the problems we divided all the students into eight groups and told each group to draw a mind map for a given topic. I observed sixteen students who were assign to do about "Planning for Savar". Their problems are:

- Unclear conception about the mind map.
- They couldn't organize the sequence properly.
- Some of them thought it is useless.
- They couldn't find out the actual point, they were confuses about what should come.

In spite of all those problems some students do their mind map almost correctly. They got some interest on it. They do their mind map sincerely.

6.1.1 Feedback from TRAC student

Knowing the techniques of the “Mind map” and realizing the usefulness of the mind map some student start using mind map for their day-to-day activities like taking class notes, planning for an event etc. But they are very few in number. But the interesting thing is that almost every one whom able to know about the mind map, can realize how much helpful it is to every sphere of life. But they don’t apply it, because of idleness.

The opinion of some student about the mind map:

1. It is useful but boring.
2. There is a problem to draw a mind map in a piece of paper while the map consist lots of branches.
3. Not for all activities but for some task they found mind map very effective. For example taking class notes, packing, shopping list etc.

Observing the student I found that very few students capture the technique of the mind map properly. The student who got the real interest in mind map can do the mind map properly and also present it wonderfully. But most of the student didn’t get any interest on it that’s why they couldn’t draw it properly.

6.2 Students find it difficult to do Mind Maps

Findings:

- As rote learners, they do not have the habit of asking questions.
- Mind Maps essentially plot the answer to questions that arise.
- Students also find it difficult to use available Mind Mapping software because of this.

6.3 To solve this we crafted an aid to Mind Mapping

- Asks questions to guide the student
- Given the type of Mind Map, the software poses step-by-step thought provoking questions.

Chapter 7 Software Implementation

7.1 Implementation of Software

We chose the tools Mind Map for help university student to there study. We divide the implementation with respect to SDLC life cycle:

- Project Identification and Selection
- Project Initiation and Planning
- Analysis
- Design
- Implementation
- Testing
- Application

7.1.1 Software used

- Microsoft Visual Basic (Main Tool)
- Microsoft Access 2003 (knowledge Base)
- Adobe Photoshop 7.0 (Design)

7.2 SDLC Life cycle

7.2.1 Project Identification and Selection

First we sort out the problem that a university student faces with Rote Learning process.

Traditional rote learning processes make a great harm for student. They lost the capabilities of brainstorming. For example in S.S.C and H.S.C board exam a student totally depends on teacher's hand writing note or any well known guide books. Even they don't write a single essay with using their thinking capabilities. After S.S.C and H.S.C exam when they came in a big institution, they don't know how to do brainstorming in their study. We Identification and Select major problems and implement in our software. We find ten major problem that a Student find difficulty. These are:

- Essay writing
- Management Study
- Thesis
- Extra Curricular Activities
- Development self
- Management Time
- Planning Career
- Projects
- Taking Lecture Notes
- Chapter Summary
- Brainstorming
- Exam preparation
- Doing Assignments
- Presentation

This is the start up from of our software:

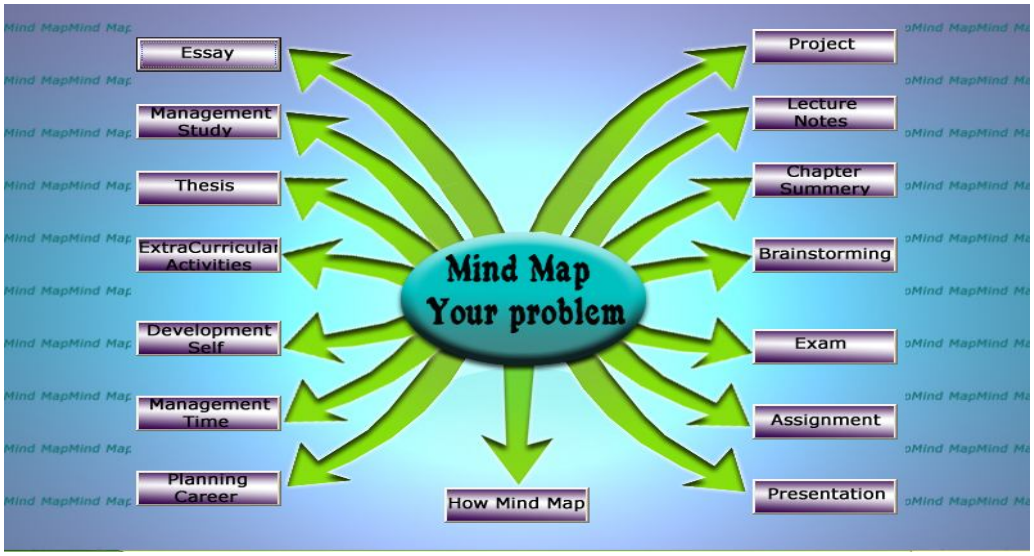


Figure 7.1: start up from

7.2.2 Project Initiation and Planning

Now we think how we implement the tool that can really help student.

- As rote learners, they do not have the habit of asking questions.

  We think if the software asked question to the user and user reply the question. The answers are automatically plotted in a Mind Map form. Here the benefit is that user doesn't have to think about Mind Map. They only answer the questions, and the software automatically makes the Mind Map for them.

- Mind Maps essentially plot the answer to questions that arise.
- Students also find it difficult to use available Mind Mapping software because of this.

We make a Knowledge base of question database for those 14 topics.

Each topic has 25 questions to make a Mind Map

Knowledge base of questions:

To make knowledge base question we take help from

- Internet
- Asked questions to students
- Asked question to teachers
- Consulted study guides

These are the table for Knowledge base of questions

Table 2.1: Essay_Table

Serial_No	Question
1	What is your topic name?
2	What is your main idea for introduction?

3	What is the supporting sentence that will relate with your opening statement?
4	What is your focusing sentence?
5	What is the first part of your focusing sentence?
6	What is the second part of your focusing sentence?
7	What is the third part of your focusing sentence?
8	What is your one of the main idea for 1st Paragraph?
9	What is your supporting points that support your that main idea?
10	What explanation would you like to add in the space under each point?
11	What is the first part of your thesis sentence for 1st Paragraph?
12	What is the second part of your thesis sentence for 1st Paragraph?
13	What is your supporting points that support your that 2nd main idea?
14	What is your second main idea 2nd Paragraph?
15	What is your supporting points that support your that main idea?
16	What explanation would you like to add in the space under each point ?
17	What is the first part of your thesis sentence for 2nd Paragraph?
18	What is the second part of your thesis sentence for 2nd Paragraph?
19	What is your supporting points that support your that 2nd main idea?
20	What is your one of the main idea for conculded the essay?
21	Which one is the strongest sentence among the all paragraphs?
22	Would you like to include an anecdote (Short and Interesting Story)?
23	What is the first part of your thesis sentence for 3rd Paragraph?
24	What is the second part of your thesis sentence for 3rd Paragraph?
25	What is your supporting points that support your that 2nd main idea?

Table 2.2: Assignment_Table

Serial_No	Question
1	What is your Assignment topic?
2	Is your assignment is descriptive or analytical?
3	If descriptive, then how do you organize your answer? If analytical, then how do you analyze the answer? (Use Key word)
4	For descriptive/ analytical answer, what will be your answer that can

	attention gather of your instructor
5	What is the main supporting answer1 for your assignment?
6	What is the main supporting answer2 for your assignment?
7	What is the main supporting answer3 for your assignment?
8	Do you use any supporting quotation, definition, image for your assignment? If no please do it.
9	Give the supporting definition.
10	Give the supporting quotation.
11	Do you thing this supporting definition/ quotation help the reader to understand the assignment. If yes. How?
12	Do you explain the image that you use for your assignment? If no, please explain it for the reader.
13	Do you give your won opinion?
14	Do you analyze your answer part by part?
15	Is this programming assignment of paper assignment?
16	If you implement it by any language then how do you implement it? Give some information. (Use Key word)
17	Which software do you use for implement or documented it? Ex: Word, Excel, Access etc.
18	Do you use any Reference Book for your assignment? If yes, give some information from that book.
19	Do you use Internet for your assignment? If yes, give some information that you find from internet.
20	How do you documenting your assignment? (Use Key word)
21	Do you use any useful image for your document? If yes, then mention in which purpose.
22	Do you list all the acknowledgements and reference? If no, please do it. (not compulsory for assignment)
23	Do you mention your Instructor Name, Position? If no, please give it.
24	In cover page, do you mention your Name, ID and full name of your assignment topic? If no, please do it.
25	Do you give submission date/due date etc? If no, please give it.

Table 2.3: Exam_Table

Serial_No	Question
1	Do you familiarize yourself with the appropriate text book? If no try to do some preliminary reading.
2	How can you Get Organized to Prepare for Exams?
3	Do you study with a group? If no then make contact with other students to form a useful study group.
4	Are you acquainted with the course program, lectures, tutorials, lab sessions - what is or has been covered, and when?
5	Where your subjects fit in to your overall course and career objectives
6	When should you Study for an Exam?
7	Do you have past exam papers? If no then try to collect them and solve them.
8	What can you do each day to prepare for exams?
9	Do you keep well-organized notes for your subjects?
10	Do you summarize suggested readings and include these as part of your notes on a topic?
11	Do you understand your notes when revising? If no then try to manage it from others.
12	Do you understand clearly all the exams syllabus? If no then take help from the course teacher or from the classmates.
13	Do you start answering questions before you have read the instructions? If yes please first read the question carefully.
14	What is your time planning during an exam so that you can attempt all the questions?
15	Do you know how many marks each question is worth?
16	Can you make a brief outline of your essay answers before you start writing them?
17	Can you carefully note the wording of each question?
18	Do you answer the first question those you most likely to find easy?
19	Do you spend more time on questions to which you know the answers than on questions that are worth more marks?

20	Do you find short-answer questions easier than essays?
21	Do you answer the questions in a multiple-choice exam in the order they appear?
22	When I don't know the answer to a multiple-choice Q do you look 4 words/phrases in the Q which might give a clue to the answer?
23	In a multiple-choice Q do you read all the alternatives even though you think one of the 1st alternatives is correct?
24	Do you take care of the technicalities-budgeting time, bringing the right equipment, writing legibly, improving weaker answer?
25	Do you get there on time - make arriving at the exam on time as simple and straightforward as possible so you feel relaxed?

Table 2.4: How_do_Mind_Map_Table

Serial_No	**Question**
1	What supplies do you need for Mind Mapping?
2	Is there any Mind Mapping software available?
3	You have only got one pen and lined paper - what do I do?
4	Where do I start?
5	You have started taking/making a note linearly; what do you do now?
6	Is it useful for you?
7	Must use colors?
8	How do you use colors?
9	Why use symbols and images?
10	Is it useful for understood?
11	Does it can attention gather of a viewer?

12	When does a Mind Map end?
13	How do you select main branch themes?
14	What makes a good key recall word?
15	What if a word is repeated on my Mind Map?
16	Why only one word per line?
17	Which is first, the word or the line?
18	Why are the lines connected?
19	What do you do when you get stuck?
20	What do you do with your ‘stupid’ thoughts?
21	How can a Mind Map help you to concentrate?
22	You get good ideas at inconvenient times - what should you do?
23	Could a Mind Map help you to fall asleep?
24	People ask you what you are doing.
25	Why would you use a Mind Map?

Table 2.5:Management_Time_Table

Serial_No	**Question**
1	What is the definition of good time management?
2	What is your best time for studying?
3	What are your priorities and scheduling activities?
4	Do you know any rules for effective time management?
5	Have you ever created any impossible situation-like take too many lab classes? If yes avoid this.
6	Can you identify your first priority classes and do whatever it takes to succeed?
7	Can you drop second priority classes or reduce work hours if necessary?
8	Can you make your basic time budgeting guide-like using weekly calendar?
9	Can you list your courses, work, study time, recreation, meals, TV, relaxation, etc?

10	Can you be flexible to adapt your schedule to changing needs i.e If it doesn't work, change it?
11	Can you write down all the things that you want to do today?
12	Can you note homework due or tests or subjects you want to emphasize? Include shopping and personal calls, etc?
13	What will you do if time is tight?
14	Can you put down your goals and things you have to do in a month?
15	What do you want to accomplish over the next month or year?
16	What do you need to buy-make a list?
17	Are you worried about something? Put it on this list.
18	Do you spend your valuable time on television, telephone? If yes avoid this.
19	Continually ask yourself "What is the best use of my time right now?" If it is not important, or urgent, don't do it.
20	Do you write "Did Do" lists at the end of each day? Keeping track of your accomplishments may help you stay motivated.
21	Can you estimate before starting and then record how long it takes to complete a task?
22	Can you note when you tend to underestimate or overestimate the amount?
23	What is your list of small "To Do" items for gaps bet appointments?
24	How you will use your free time?
25	Can you set priorities for using the free time properly?

Table 2.6: Planning_Career_Table

Serial_No	**Question**
1	What is your career plan?
2	Do you have any professional training/degree?
3	Does your career plan effective for your future life?
4	How does it helpful for your future life, give reason?
5	How does it helpful for your future life, give reason?
6	How does it helpful for your future life, give reason?

7	What initial step would you like to take to fulfill your plan? Give Ex-like which university would you like to join.
8	What supporting initiative would you like to take to fulfill your plan? Ex-S.S.C and H.S.C plan and result.
9	Why you choose the Career?
10	Is there any particular reason to choose the career?
11	How do you help your family and community with this career?
12	Does it related with your life goal?
13	What type of institution do you choose? Government/ non government.
14	If Non government, do you get all your financial support from your family?
15	Do you think about scholarship, financial aid etc?
16	If yes, how do you get all of those? If you have any plan then mentions it.
17	How do you successful in your plan?
18	Is there any supporting plan to success your goal?
19	What is your time duration to fulfill your plan?
20	Do you think this time is sufficient enough to fulfill your plan? How?
21	If your plan is not fulfill with in time, then what step do you take?
22	Do you choose your career for your family pressure?
23	Is it technical line or general line?
24	Do you get all of supports from your institution?
25	Do you get all of supports from your family and friends?

Table 2.7:Thesis_Table

Serial_No	**Question**
1	What is your thesis topic?
2	In which part of this topic do you want to focus?
3	How do you describe the focusing topic?
4	Find new information that can attention gather of your instructor.
5	Do you want include sub information1 that support the main focusing topic?
6	Do you want include sub information2 that support the main focusing topic?

7	Do you want include sub information3 that support the main focusing topic?
8	What is your 1st supporting topic for focusing topic?
9	Give information that can attention gather of your instructor for 1st supporting topic.
10	Why do you think this information can help your thesis, give one reason?
11	Do you want include sub information1 that support the supporting topic for focusing topic?
12	Do you want include sub information2 that support the supporting topic for focusing topic?
13	Do you want include sub information3 that support the supporting topic for focusing topic?
14	How do you implement the focusing topic?
15	Do you use any particular programming language or total paper base thesis paper?
16	If you implement it by any programming language then how do you implement it? Give some information.
17	Which software do you use for implement or documented it? Ex: Word, Excel, Access etc.
18	Do you use any Reference Book for your thesis? If yes, give some information from that book. (Use Key word)
19	Do you use Internet for your thesis? If yes, give some information that you find from internet.
20	How do you documenting the focusing topic? (Use Key word)
21	Do you use any useful image for your document? If yes, then mention in which purpose.
22	Do you list all the acknowledgements and reference? If no, please do it.
23	Do you mention your Instructor and Sub Instructor Name, Position, Profession etc? If no, please do it.
24	In cover page, do you use University logo, Name and full name of your thesis topic? If no, please do it.
25	Do you take Instructor signature and also your signature on main paper? If

	no, please do it.

7.2.3 Analysis

We analysis on our design and concept. We want to find that, is it helpful for university students? We ask some ELPro (English language program) student that question. Most of them say yes, it is helpful to taking notes, essay writings.

7.2.4 Design

This is the design of our software

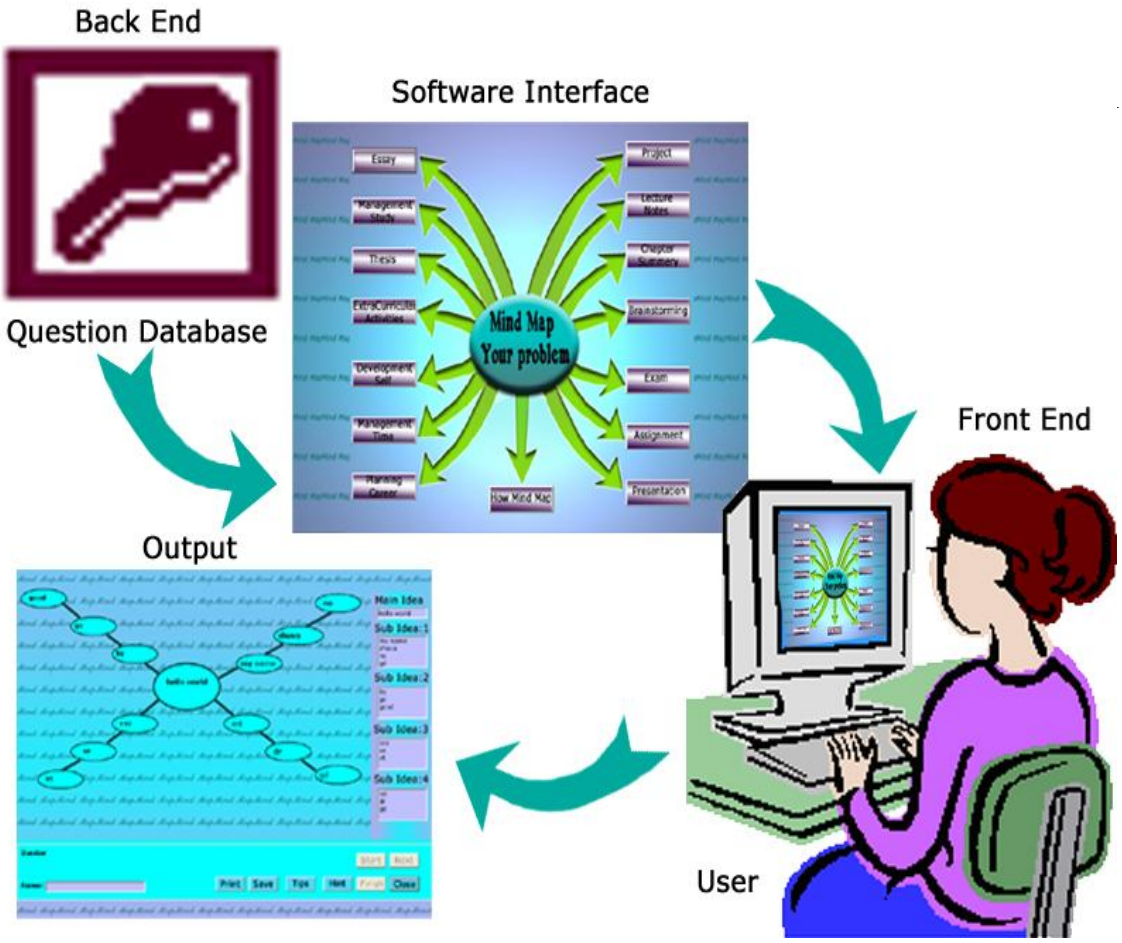


Figure 7.2: Design process of Software

7.2.5 Implementation

Coding

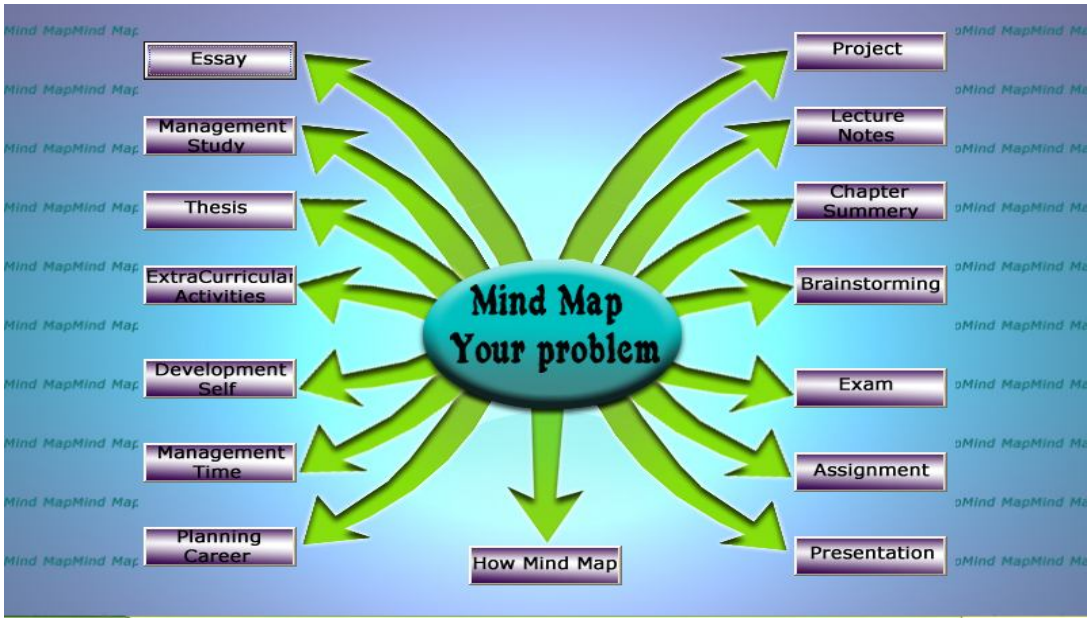


Figure 7.3: Software Interface

Startup from:

```
Private Sub about_dev_Click()
about_us_frm.Show
End Sub

Private Sub about_soft_Click()
about_soft_frm.Show
End Sub

Private Sub assign_Click()
about_assign.Show
End Sub

Private Sub assign1_Click()
help_assign.Show
End Sub

Private Sub assignment_Click()
Inactive_Button
draw_map_frm.center_label.Caption = "Assignment"
draw_map_frm.Show
End Sub

Private Sub augment_Click()
augmentative.Show
End Sub

Private Sub brainst_Click()
BrainStor.Show
End Sub
```

```
Private Sub brainstorming_Click()
Inactive_Button
draw_map_frm.center_label.Caption = "Brainstorming"
draw_map_frm.Show
End Sub

Private Sub bstrom1_Click()
help_brain.Show
End Sub

Private Sub cas_Click()
cause.Show
End Sub

Private Sub chap_sum_Click()
ChapterSummary.Show
End Sub

Private Sub chapter_summery_Click()
Inactive_Button
draw_map_frm.center_label.Caption = "Chapter Summery"
draw_map_frm.Show
End Sub

Private Sub comp_Click()
comp1.Show
End Sub

Private Sub critical_Click()
critical1.Show
End Sub

Private Sub CS1_Click()
help_CS.Show
End Sub

Private Sub def_Click()
defination.Show
End Sub

Private Sub des_Click()
desc.Show
End Sub

Private Sub dev_self_Click()
DevelopmentSelf.Show
End Sub

Private Sub development_self_Click()
Inactive_Button
draw_map_frm.center_label.Caption = "Development Self"
draw_map_frm.Show
End Sub

Private Sub do_again_Click()
Dim i As Integer
```

```
Active_Button
draw_map_frm.center_oval.Visible = False
draw_map_frm.cen_ovl_ans.Visible = False
draw_map_frm.cen_ovl_ans.Caption = ""

draw_map_frm.htree.Text = "0"
draw_map_frm.hiden.Text = "0"
draw_map_frm.start.Enabled = True
draw_map_frm.Next.Enabled = False
draw_map_frm.finish.Enabled = False
draw_map_frm.answer.Enabled = False
draw_map_frm.question.Caption = ""
draw_map_frm.answer.Text = ""

For i = 0 To 23
   draw_map_frm.oval(i).Visible = False
   draw_map_frm.line5(i).Visible = False
   draw_map_frm.ilabel(i).Visible = False
   draw_map_frm.ilabel(i).Caption = ""
Next

start_up_frm.do_again.Enabled = False
End Sub

Private Sub DS1_Click()
help_development_self.Show
End Sub

Private Sub em_Click()
examination.Show
End Sub

Private Sub ess_Click()
about_essay.Show
End Sub

Private Sub essay_Click()
Inactive_Button
selection_frm.Show
draw_map_frm.center_label.Caption = "Essay"
End Sub

Private Sub exam_Click()
Inactive_Button
draw_map_frm.center_label.Caption = "Exam"
draw_map_frm.Show
End Sub

Private Sub exam1_Click()
help_exam.Show
End Sub

Private Sub exca1_Click()
help_ECA.Show
End Sub
```

```
Private Sub exit_Click()
End
End Sub

Private Sub ext_cur_act_Click()
Extra_Curricular_Activities.Show
End Sub

Private Sub extra_curricular_actvities_Click()
Inactive_Button
draw_map_frm.center_label.Caption = "Ext. Curricular Activities"
draw_map_frm.Show
End Sub

Private Sub Form_Load()
Open_DB
End Sub

Private Sub how_m_map_Click()
howMindMap.Show
End Sub

Private Sub how_mind_map_Click()
Inactive_Button
draw_map_frm.center_label.Caption = "How Mind Map"
draw_map_frm.Show
End Sub

Private Sub Lc1_Click()
help_ln.Show
End Sub

Private Sub lec_note_Click()
lecture.Show
End Sub

Private Sub lecture_notes_Click()
Inactive_Button
draw_map_frm.center_label.Caption = "Lecture Notes"
draw_map_frm.Show
End Sub

Private Sub man_study_Click()
management_study1.Show
End Sub

Private Sub man_time_Click()
management_time1.Show
End Sub

Private Sub management_study_Click()
Inactive_Button
draw_map_frm.center_label.Caption = "Management Study"
draw_map_frm.Show
End Sub

Private Sub management_time_Click()
```

```
Inactive_Button
draw_map_frm.center_label.Caption = "Management Time"
draw_map_frm.Show
End Sub

Private Sub mp1_Click()
help_hmm.Show
End Sub

Private Sub MS1_Click()
help_ms.Show
End Sub

Private Sub MT1_Click()
help_mt.Show
End Sub

Private Sub narr_Click()
narr1.Show
End Sub

Private Sub PC1_Click()
help_pc.Show
End Sub

Private Sub plan_car_Click()
PlanningCar.Show
End Sub

Private Sub planning_career_Click()
Inactive_Button
draw_map_frm.center_label.Caption = "Planning Career"
draw_map_frm.Show
End Sub


Private Sub pres_Click()
help_presentation.Show
End Sub

Private Sub pres2_Click()
presentation1.Show
End Sub

Private Sub presentation_Click()
Inactive_Button
draw_map_frm.center_label.Caption = "Presentation"
draw_map_frm.Show
End Sub

Private Sub process_Click()
process1.Show
End Sub

Private Sub proj_Click()
ProjectM.Show
End Sub
```

```
Private Sub projec1_Click()
help_project.Show
End Sub

Private Sub project_Click()
Inactive_Button
draw_map_frm.center_label.Caption = "Project"
draw_map_frm.Show
End Sub

Private Sub thes_Click()
thesis_frm.Show
End Sub

Private Sub thesis_Click()
Inactive_Button
draw_map_frm.center_label.Caption = "Thesis"
draw_map_frm.Show
End Sub

Public Sub Active_Button()
start_up_frm.assignment.Enabled = True
start_up_frm.brainstorming.Enabled = True
start_up_frm.chapter_summery.Enabled = True
start_up_frm.development_self.Enabled = True
start_up_frm.essay.Enabled = True
start_up_frm.exam.Enabled = True
start_up_frm.extra_curricular_actvities.Enabled = True
start_up_frm.how_mind_map.Enabled = True
start_up_frm.lecture_notes.Enabled = True
start_up_frm.management_study.Enabled = True
start_up_frm.management_time.Enabled = True
start_up_frm.planning_career.Enabled = True
start_up_frm.presentation.Enabled = True
start_up_frm.project.Enabled = True
start_up_frm.thesis.Enabled = True
End Sub

Public Sub Inactive_Button()
start_up_frm.assignment.Enabled = False
start_up_frm.brainstorming.Enabled = False
start_up_frm.chapter_summery.Enabled = False
start_up_frm.development_self.Enabled = False
start_up_frm.essay.Enabled = False
start_up_frm.exam.Enabled = False
start_up_frm.extra_curricular_actvities.Enabled = False
start_up_frm.how_mind_map.Enabled = False
start_up_frm.lecture_notes.Enabled = False
start_up_frm.management_study.Enabled = False
start_up_frm.management_time.Enabled = False
start_up_frm.planning_career.Enabled = False
start_up_frm.presentation.Enabled = False
start_up_frm.project.Enabled = False
start_up_frm.thesis.Enabled = False
End Sub
```

```
Private Sub thesis1_Click()
help_thesis.Show
End Sub
```

If we select a button then came a selection from. For example if we choice essay then come the above from

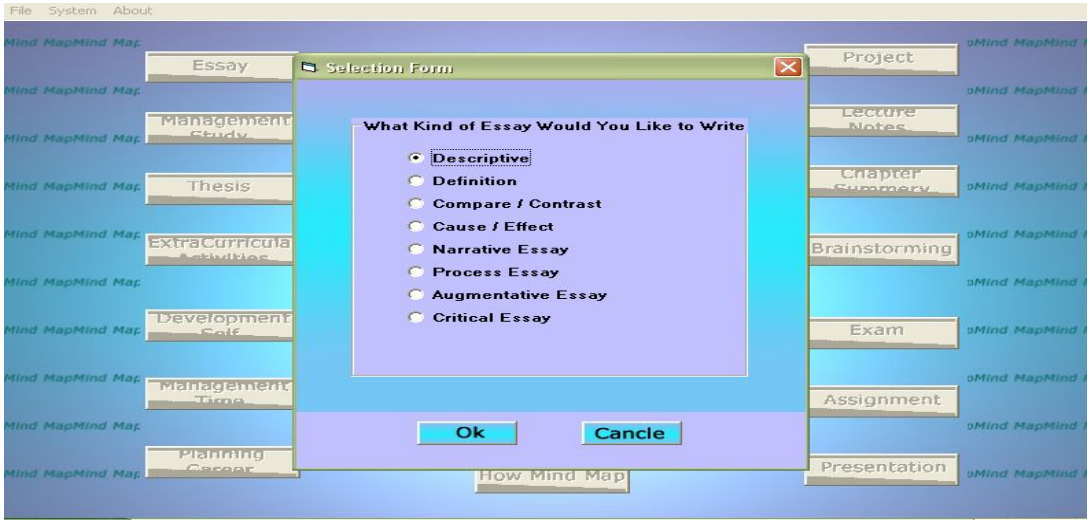


Figure 7.3: Selection from

When we select a type then come the draw from

Draw From

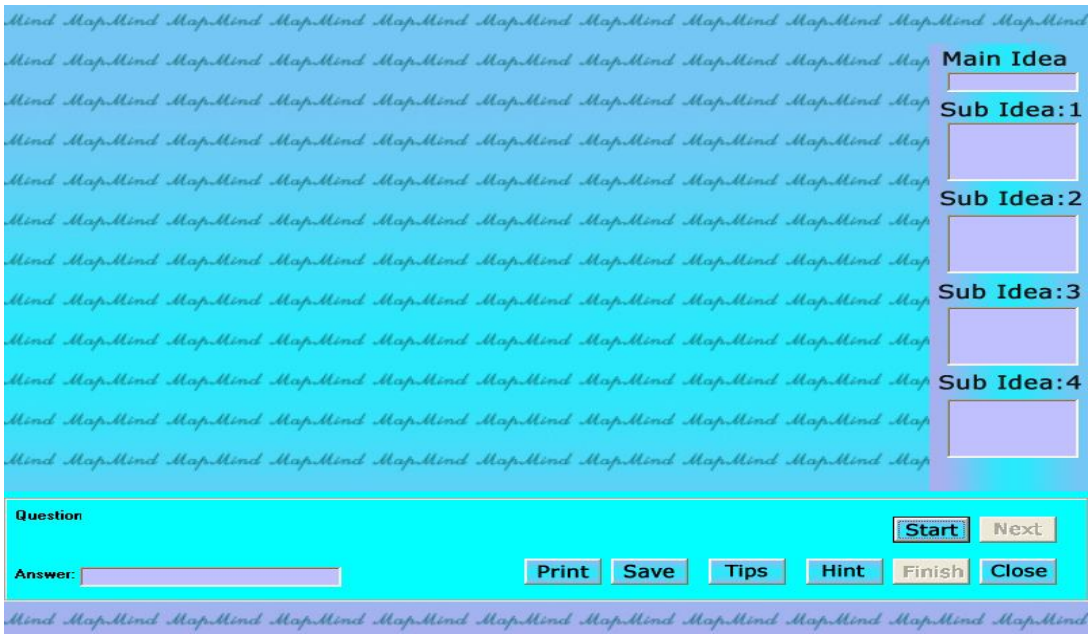


Figure 7.4: Draw Form

```
Dim sel_type As String
Dim db_name As String
Dim ques As ADODB.Recordset
Dim cnt As ADODB.Recordset

Private Sub close_Click()
draw_map_frm.Visible = False
draw_map_frm.htree.Text = "0"
start_up_frm.do_again.Enabled = True
End Sub
Private Sub Command1_Click()
tips.Show
End Sub
Private Sub Command3_Click()
On Error GoTo block1
draw_map_frm.PrintForm
Exit Sub
block1:
MsgBox "Printer Not Found", vbCritical, "Warnning"
End Sub

Private Sub finish_Click()
draw_map_frm.htree.Text = "0"
draw_map_frm.next.Enabled = False
draw_map_frm.answer.Enabled = False
draw_map_frm.question.Caption = ""
draw_map_frm.answer.Text = ""
End Sub

Private Sub hint_Click()
FromHintsMP.Show
End Sub
```

```
Private Sub next_Click()
On Error GoTo Error_Block

Dim temp_cnt As Integer
Dim buff_cnt As Integer
Dim act_ol As Integer
Dim diff As Integer
Dim temp_buff As Integer
Dim con_buff As String
Dim reply As String
Dim true1 As Boolean
Dim true2 As Boolean
Dim true3 As Boolean
Dim true4 As Boolean
Dim ihtree As Integer
Dim ihiden As Integer

true1 = False
true2 = False
true3 = False
true4 = False

Dim temp As Integer
temp = 0

Set ques = New ADODB.Recordset

   temp_cnt = draw_map_frm.htree.Text
   temp_buff = temp_cnt
   act_ol = draw_map_frm.hiden.Text

   If temp_cnt = 0 Then
      If answer.Text = "" Then
         MsgBox "Fill the Answer Box then Proceed", vbCritical, "Warning"
         'draw_map_frm.htree.Text = temp_cnt
      Else
         center_oval.Visible = True
         cen_ovl_ans.Visible = True
         cen_ovl_ans.Caption = answer.Text
         main_idea.Text = answer.Text
         answer.Text = ""

         buff_cnt = temp_buff + 2
         con_buff = buff_cnt

         If draw_map_frm.center_label.Caption = "Project" Then
            ques.Open "SELECT Question FROM Project_Table WHERE Serial_No = '" &
con_buff & "'", DB, adOpenDynamic, adLockOptimistic
         ElseIf draw_map_frm.center_label.Caption = "Essay" Then
            ques.Open "SELECT Question FROM Essay_Table WHERE Serial_No = '" &
con_buff & "'", DB, adOpenDynamic, adLockOptimistic
         ElseIf draw_map_frm.center_label.Caption = "Management Study" Then
            ques.Open "SELECT Question FROM MStudy_Table WHERE Serial_No = '" &
con_buff & "'", DB, adOpenDynamic, adLockOptimistic
         ElseIf draw_map_frm.center_label.Caption = "Thesis" Then
```

```
            ques.Open "SELECT Question FROM Thesis_Table WHERE Serial_No = '" &
con_buff & "'", DB, adOpenDynamic, adLockOptimistic
         ElseIf draw_map_frm.center_label.Caption = "Ext. Curricular Activities" Then
            ques.Open "SELECT Question FROM ECA_Table WHERE Serial_No = '" &
con_buff & "'", DB, adOpenDynamic, adLockOptimistic
         ElseIf draw_map_frm.center_label.Caption = "Development Self" Then
            ques.Open "SELECT Question FROM DSelf_Table WHERE Serial_No = '" &
con_buff & "'", DB, adOpenDynamic, adLockOptimistic
         ElseIf draw_map_frm.center_label.Caption = "Management Time" Then
            ques.Open "SELECT Question FROM MTime_Table WHERE Serial_No = '" &
con_buff & "'", DB, adOpenDynamic, adLockOptimistic
         ElseIf draw_map_frm.center_label.Caption = "Planning Career" Then
            ques.Open "SELECT Question FROM PC_Table WHERE Serial_No = '" &
con_buff & "'", DB, adOpenDynamic, adLockOptimistic
         ElseIf draw_map_frm.center_label.Caption = "How Mind Map" Then
            ques.Open "SELECT Question FROM HMM_Table WHERE Serial_No = '" &
con_buff & "'", DB, adOpenDynamic, adLockOptimistic
         ElseIf draw_map_frm.center_label.Caption = "Lecture Notes" Then
            ques.Open "SELECT Question FROM LN_Table WHERE Serial_No = '" &
con_buff & "'", DB, adOpenDynamic, adLockOptimistic
         ElseIf draw_map_frm.center_label.Caption = "Chapter Summery" Then
            ques.Open "SELECT Question FROM CS_Table WHERE Serial_No = '" &
con_buff & "'", DB, adOpenDynamic, adLockOptimistic
         ElseIf draw_map_frm.center_label.Caption = "Brainstorming" Then
            ques.Open "SELECT Question FROM BS_Table WHERE Serial_No = '" &
con_buff & "'", DB, adOpenDynamic, adLockOptimistic
         ElseIf draw_map_frm.center_label.Caption = "Exam" Then
            ques.Open "SELECT Question FROM Exam_Table WHERE Serial_No = '" &
con_buff & "'", DB, adOpenDynamic, adLockOptimistic
         ElseIf draw_map_frm.center_label.Caption = "Assignment" Then
            ques.Open "SELECT Question FROM Assign_Table WHERE Serial_No = '" &
con_buff & "'", DB, adOpenDynamic, adLockOptimistic
         ElseIf draw_map_frm.center_label.Caption = "Presentation" Then
            ques.Open "SELECT Question FROM Presen_Table WHERE Serial_No = '" &
con_buff & "'", DB, adOpenDynamic, adLockOptimistic
         End If

         question.Caption = ques("Question")
         draw_map_frm.answer.SetFocus

         temp_buff = temp_buff + 1
         draw_map_frm.htree.Text = temp_buff
      End If
   Else
      If answer.Text = "" Then
         MsgBox "Fill the Answer Box then Proceed", vbCritical, "Warning"
         draw_map_frm.htree.Text = temp_cnt
      Else
         act_ol = draw_map_frm.hiden.Text
         draw_map_frm.oval(temp_cnt + act_ol - 1).Visible = True
         draw_map_frm.line5(temp_cnt + act_ol - 1).Visible = True
         draw_map_frm.ilabel(temp_cnt + act_ol - 1).Visible = True
         draw_map_frm.ilabel(temp_cnt + act_ol - 1).Caption = answer.Text

         If temp_cnt + act_ol - 1 = 2 Then
            reply = MsgBox("After this Question Are You Want to Extend this Branch",
vbQuestion + vbYesNo, "Confirmation")
```

```
            If reply = vbNo Then
               diff = 6 - temp_cnt
               draw_map_frm.hiden.Text = diff
               temp = temp + 3
               List1.AddItem (answer.Text)
               true1 = True
            End If
         End If

         If temp_cnt + act_ol - 1 = 8 Then
            reply = MsgBox("After this Question Are You Want to Extend this Branch",
vbQuestion + vbYesNo, "Confirmation")
            If reply = vbNo Then
               diff = 12 - temp_cnt
               draw_map_frm.hiden.Text = diff
               temp = temp + 3
               List2.AddItem (answer.Text)
               true2 = True
            End If
         End If

         If temp_cnt + act_ol - 1 = 14 Then
            reply = MsgBox("After this Question Are You Want to Extend this Branch",
vbQuestion + vbYesNo, "Confirmation")
            If reply = vbNo Then
               diff = 18 - temp_cnt
               draw_map_frm.hiden.Text = diff
               temp = temp + 3
               List3.AddItem (answer.Text)
               true3 = True
            End If
         End If

         If temp_cnt + act_ol - 1 = 20 Then
            reply = MsgBox("After this Question Are You Want to Extend this Branch",
vbQuestion + vbYesNo, "Confirmation")
            If reply = vbNo Then
               diff = 6 - temp_cnt
               draw_map_frm.hiden.Text = diff
               temp = temp + 3
               List4.AddItem (answer.Text)
               true4 = True
            End If
         End If

         ihtree = htree.Text
         ihiden = hiden.Text
         If true1 = False And (ihtree + ihiden) < 7 Then
            List1.AddItem (answer.Text)
         End If
         If true2 = False And ((ihtree + ihiden) > 6 And (ihtree + ihiden) < 13) Then
            List2.AddItem (answer.Text)
         End If
         If true3 = False And ((ihtree + ihiden) > 12 And (ihtree + ihiden) < 19) Then
            List3.AddItem (answer.Text)
         End If
         If true4 = False And (ihtree + ihiden) > 18 Then
```

```
            List4.AddItem (answer.Text)
        End If

        buff_cnt = temp_buff + act_ol + 2 + temp
        con_buff = buff_cnt

        If draw_map_frm.center_label.Caption = "Project" Then
            ques.Open "SELECT Question FROM Project_Table WHERE Serial_No = '" &
con_buff & "'", DB, adOpenDynamic, adLockOptimistic
        ElseIf draw_map_frm.center_label.Caption = "Essay" Then
            ques.Open "SELECT Question FROM Essay_Table WHERE Serial_No = '" &
con_buff & "'", DB, adOpenDynamic, adLockOptimistic
        ElseIf draw_map_frm.center_label.Caption = "Management Study" Then
            ques.Open "SELECT Question FROM MStudy_Table WHERE Serial_No = '" &
con_buff & "'", DB, adOpenDynamic, adLockOptimistic
        ElseIf draw_map_frm.center_label.Caption = "Thesis" Then
            ques.Open "SELECT Question FROM Thesis_Table WHERE Serial_No = '" &
con_buff & "'", DB, adOpenDynamic, adLockOptimistic
        ElseIf draw_map_frm.center_label.Caption = "Ext. Curricular Activities" Then
            ques.Open "SELECT Question FROM ECA_Table WHERE Serial_No = '" &
con_buff & "'", DB, adOpenDynamic, adLockOptimistic
        ElseIf draw_map_frm.center_label.Caption = "Development Self" Then
            ques.Open "SELECT Question FROM DSelf_Table WHERE Serial_No = '" &
con_buff & "'", DB, adOpenDynamic, adLockOptimistic
        ElseIf draw_map_frm.center_label.Caption = "Management Time" Then
            ques.Open "SELECT Question FROM MTime_Table WHERE Serial_No = '" &
con_buff & "'", DB, adOpenDynamic, adLockOptimistic
        ElseIf draw_map_frm.center_label.Caption = "Planning Career" Then
            ques.Open "SELECT Question FROM PC_Table WHERE Serial_No = '" &
con_buff & "'", DB, adOpenDynamic, adLockOptimistic
        ElseIf draw_map_frm.center_label.Caption = "How Mind Map" Then
            ques.Open "SELECT Question FROM HMM_Table WHERE Serial_No = '" &
con_buff & "'", DB, adOpenDynamic, adLockOptimistic
        ElseIf draw_map_frm.center_label.Caption = "Lecture Notes" Then
            ques.Open "SELECT Question FROM LN_Table WHERE Serial_No = '" &
con_buff & "'", DB, adOpenDynamic, adLockOptimistic
        ElseIf draw_map_frm.center_label.Caption = "Chapter Summery" Then
            ques.Open "SELECT Question FROM CS_Table WHERE Serial_No = '" &
con_buff & "'", DB, adOpenDynamic, adLockOptimistic
        ElseIf draw_map_frm.center_label.Caption = "Brainstorming" Then
            ques.Open "SELECT Question FROM BS_Table WHERE Serial_No = '" &
con_buff & "'", DB, adOpenDynamic, adLockOptimistic
        ElseIf draw_map_frm.center_label.Caption = "Exam" Then
            ques.Open "SELECT Question FROM Exam_Table WHERE Serial_No = '" &
con_buff & "'", DB, adOpenDynamic, adLockOptimistic
        ElseIf draw_map_frm.center_label.Caption = "Assignment" Then
            ques.Open "SELECT Question FROM Assign_Table WHERE Serial_No = '" &
con_buff & "'", DB, adOpenDynamic, adLockOptimistic
        ElseIf draw_map_frm.center_label.Caption = "Presentation" Then
            ques.Open "SELECT Question FROM Presen_Table WHERE Serial_No = '" &
con_buff & "'", DB, adOpenDynamic, adLockOptimistic
        End If

        draw_map_frm.answer.Text = ""
        draw_map_frm.answer.SetFocus
        question.Caption = ques("Question")
```

```
        temp_buff = temp_buff + 1
        draw_map_frm.htree.Text = temp_buff
      End If
   End If
Exit Sub

Error_Block:
   MsgBox "Question Database is Empty", vbCritical, "Warning"
   draw_map_frm.start.Enabled = False
   draw_map_frm.next.Enabled = False
   draw_map_frm.finish.Enabled = False
   draw_map_frm.question.Caption = ""
   draw_map_frm.answer.Text = ""
   draw_map_frm.answer.Enabled = False
End Sub

Public Sub Type_Selection()
If selection_frm.descriptive.Value = True Then
   sel_type = "Descriptive"
ElseIf selection_frm.defination.Value = True Then
   sel_type = "Defination"
ElseIf selection_frm.com_con.Value = True Then
   sel_type = "Compare / Contrast"
ElseIf selection_frm.cau_eff.Value = True Then
   sel_type = "Cause / Effect"
ElseIf selection_frm.narrative.Value = True Then
   sel_type = "Narrative Essay"
ElseIf selection_frm.process.Value = True Then
   sel_type = "Process Essay"
ElseIf selection_frm.augmentative.Value = True Then
   sel_type = "Augmentative Essay"
ElseIf selection_frm.critical.Value = True Then
   sel_type = "Critical"
End If
End Sub

Private Sub start_Click()
On Error GoTo Error_Block

Dim temp_cnt As Integer
Dim buff_cnt As Integer
Dim con_buff As String

Set ques = New ADODB.Recordset

   temp_cnt = draw_map_frm.htree.Text
   buff_cnt = temp_cnt + 1
   con_buff = buff_cnt

   If draw_map_frm.center_label.Caption = "Project" Then
      ques.Open "SELECT Question FROM Project_Table WHERE Serial_No = '" &
con_buff & "'", DB, adOpenDynamic, adLockOptimistic
   ElseIf draw_map_frm.center_label.Caption = "Essay" Then
      ques.Open "SELECT Question FROM Essay_Table WHERE Serial_No = '" & con_buff
& "'", DB, adOpenDynamic, adLockOptimistic
   ElseIf draw_map_frm.center_label.Caption = "Management Study" Then
```

```
      ques.Open "SELECT Question FROM MStudy_Table WHERE Serial_No = '" &
con_buff & "'", DB, adOpenDynamic, adLockOptimistic
   ElseIf draw_map_frm.center_label.Caption = "Thesis" Then
      ques.Open "SELECT Question FROM Thesis_Table WHERE Serial_No = '" & con_buff
& "'", DB, adOpenDynamic, adLockOptimistic
   ElseIf draw_map_frm.center_label.Caption = "Ext. Curricular Activities" Then
      ques.Open "SELECT Question FROM ECA_Table WHERE Serial_No = '" & con_buff &
"'", DB, adOpenDynamic, adLockOptimistic
   ElseIf draw_map_frm.center_label.Caption = "Development Self" Then
      ques.Open "SELECT Question FROM DSelf_Table WHERE Serial_No = '" & con_buff
& "'", DB, adOpenDynamic, adLockOptimistic
   ElseIf draw_map_frm.center_label.Caption = "Management Time" Then
      ques.Open "SELECT Question FROM MTime_Table WHERE Serial_No = '" &
con_buff & "'", DB, adOpenDynamic, adLockOptimistic
   ElseIf draw_map_frm.center_label.Caption = "Planning Career" Then
      ques.Open "SELECT Question FROM PC_Table WHERE Serial_No = '" & con_buff &
"'", DB, adOpenDynamic, adLockOptimistic
   ElseIf draw_map_frm.center_label.Caption = "How Mind Map" Then
      ques.Open "SELECT Question FROM HMM_Table WHERE Serial_No = '" & con_buff
& "'", DB, adOpenDynamic, adLockOptimistic
   ElseIf draw_map_frm.center_label.Caption = "Lecture Notes" Then
      ques.Open "SELECT Question FROM LN_Table WHERE Serial_No = '" & con_buff &
"'", DB, adOpenDynamic, adLockOptimistic
   ElseIf draw_map_frm.center_label.Caption = "Chapter Summery" Then
      ques.Open "SELECT Question FROM CS_Table WHERE Serial_No = '" & con_buff &
"'", DB, adOpenDynamic, adLockOptimistic
   ElseIf draw_map_frm.center_label.Caption = "Brainstorming" Then
      ques.Open "SELECT Question FROM BS_Table WHERE Serial_No = '" & con_buff &
"'", DB, adOpenDynamic, adLockOptimistic
   ElseIf draw_map_frm.center_label.Caption = "Exam" Then
      ques.Open "SELECT Question FROM Exam_Table WHERE Serial_No = '" & con_buff
& "'", DB, adOpenDynamic, adLockOptimistic
   ElseIf draw_map_frm.center_label.Caption = "Assignment" Then
      ques.Open "SELECT Question FROM Assign_Table WHERE Serial_No = '" & con_buff
& "'", DB, adOpenDynamic, adLockOptimistic
   ElseIf draw_map_frm.center_label.Caption = "Presentation" Then
      ques.Open "SELECT Question FROM Presen_Table WHERE Serial_No = '" &
con_buff & "'", DB, adOpenDynamic, adLockOptimistic
   End If

   question.Caption = ques("Question")

   draw_map_frm.answer.Enabled = True
   draw_map_frm.start.Enabled = False
   draw_map_frm.next.Enabled = True
   draw_map_frm.finish.Enabled = True

Exit Sub

Error_Block:
   MsgBox "Question Database is Empty", vbCritical, "Warning"
   draw_map_frm.start.Enabled = False
   draw_map_frm.next.Enabled = False
   draw_map_frm.finish.Enabled = False
End Sub
```

After press the start button, here come question from data base. And when user gives the answer it automatically plotted in Mind Map form. Here main idea goes in center. Sub idea goes in branches or hand of the main idea.

Figure 7.5: Draw Mind Map with question

Next button give the next Question -

Figure 7.6: Mind Map expanded with question

After 3 question of each branch there come an option “Do you want to expand the branch?” If user chose no then there no branch will extended. If he/she chose yes then each branch will expanded with another 3 branches.

Figure 7.7: Sub branch expanded with another 3 branches

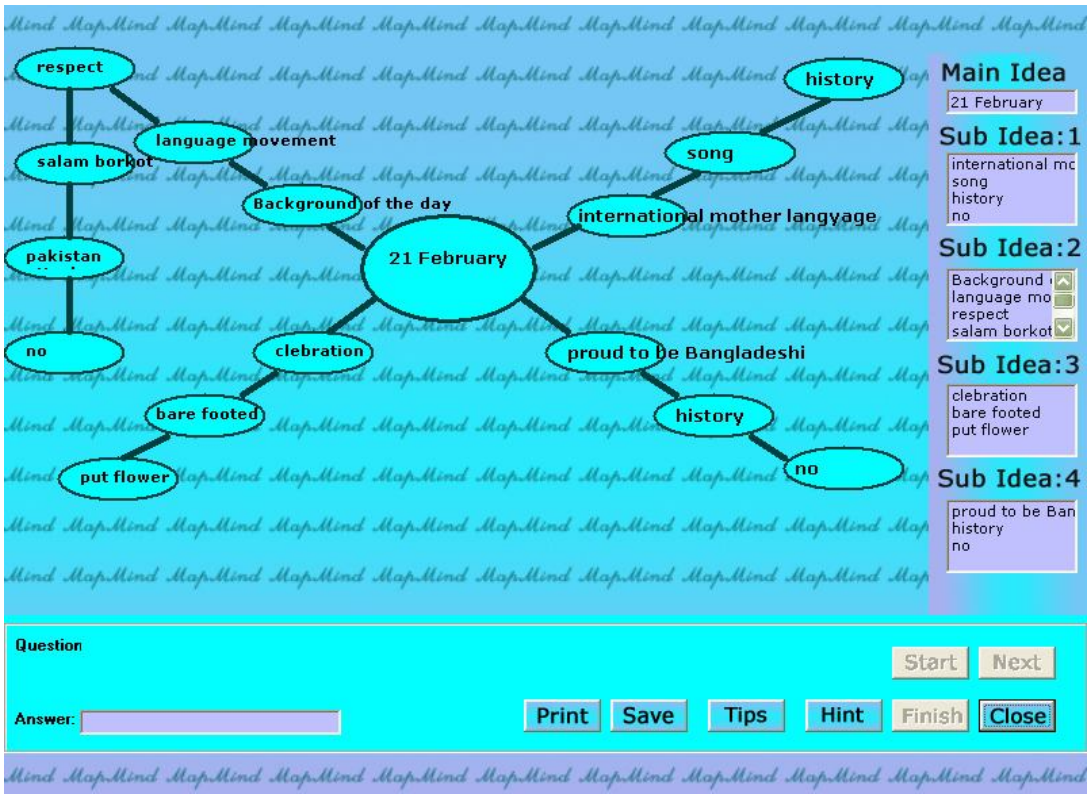


Figure 7.8: Full implemented Mind Map

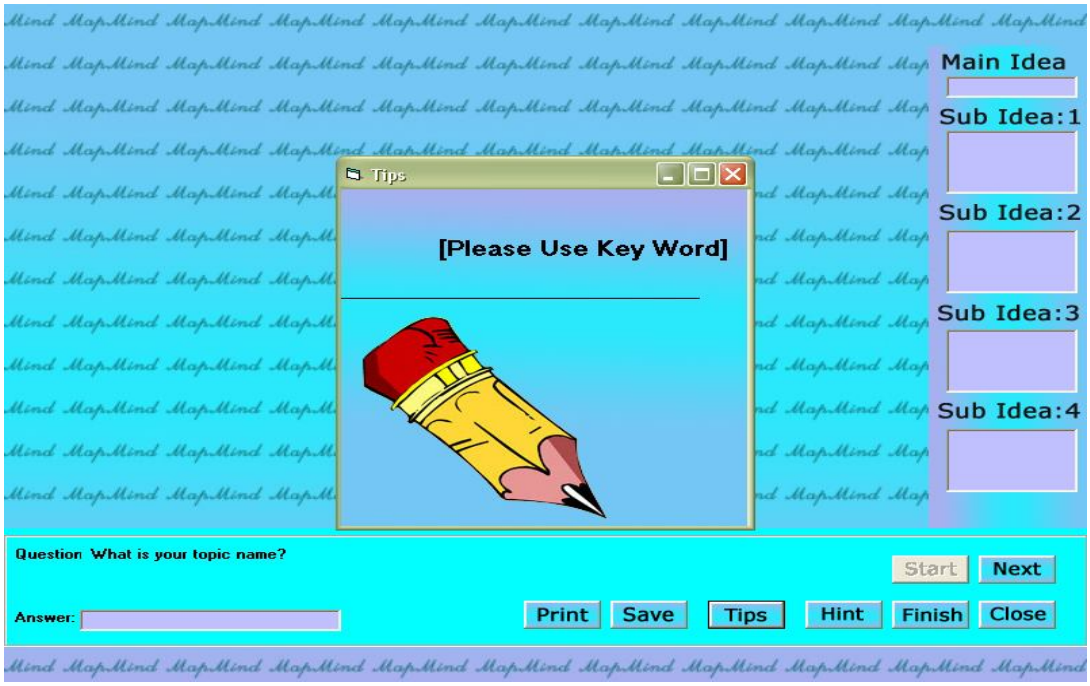


Figure 7.9: Tip (use key word)

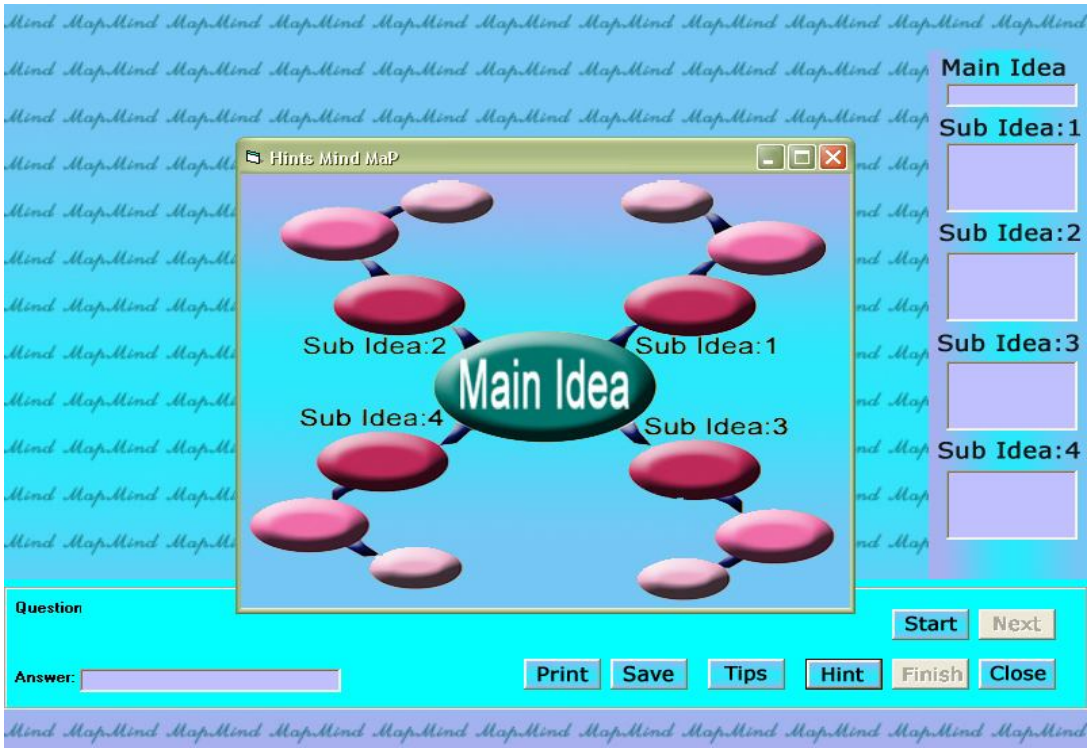


Figure 7.10: Hint

Hint that user understand what is main idea and sub idea. Also give a list form beside the Mind Map. Because user a familiar with maid list.

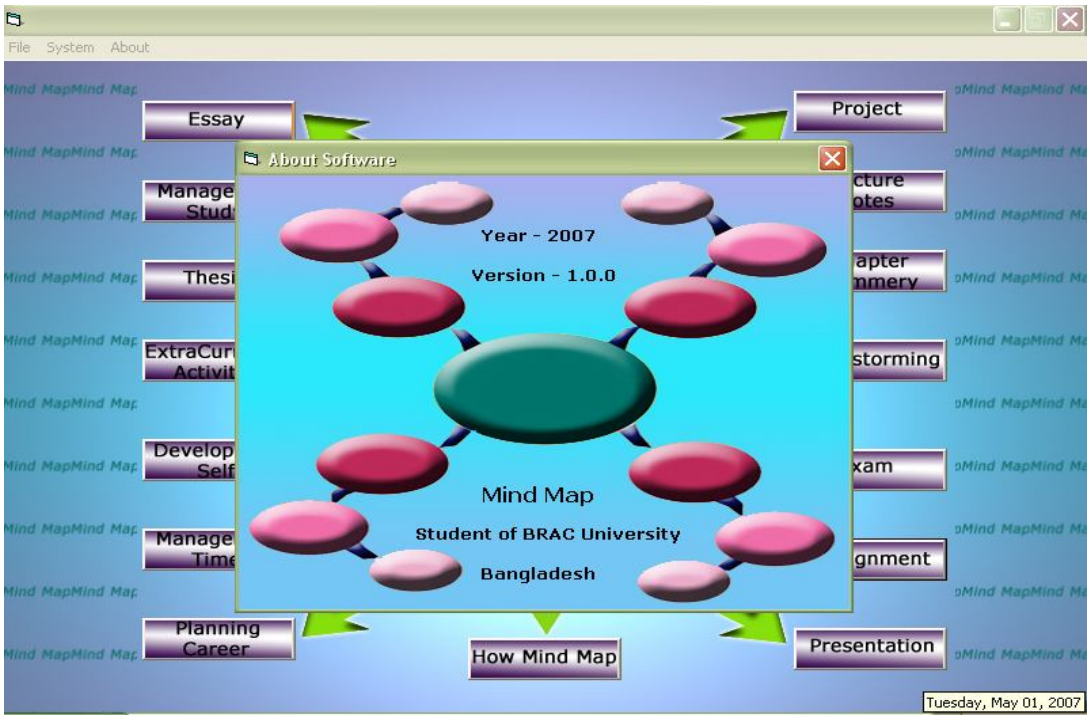


Figure 7.11: About Software

Figure 7.12: About Developers

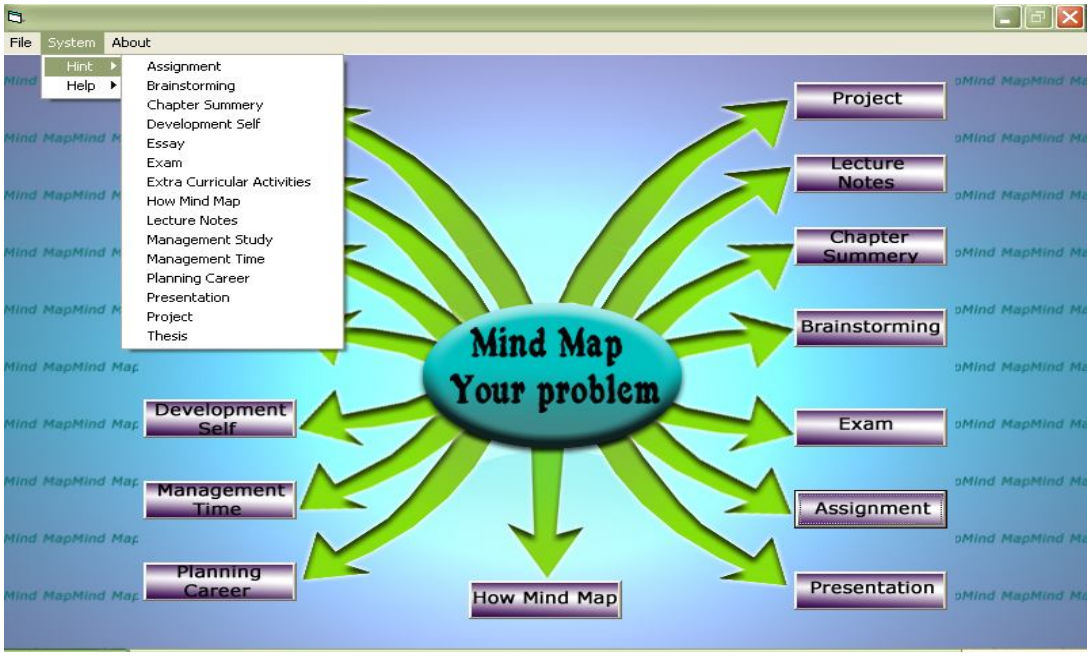


Figure 7.13: Hints of every topic Mind Map

Figure 7.14: Hints of Essay Mind Map

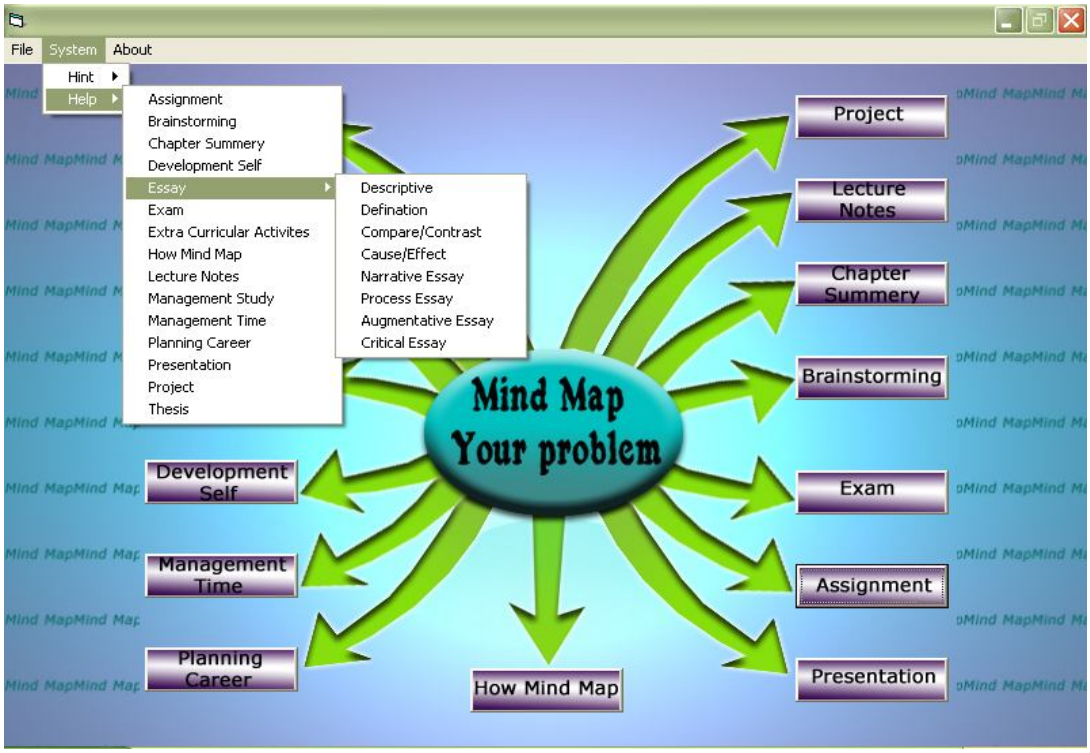


Figure 7.15: Help of every Mind Map topic

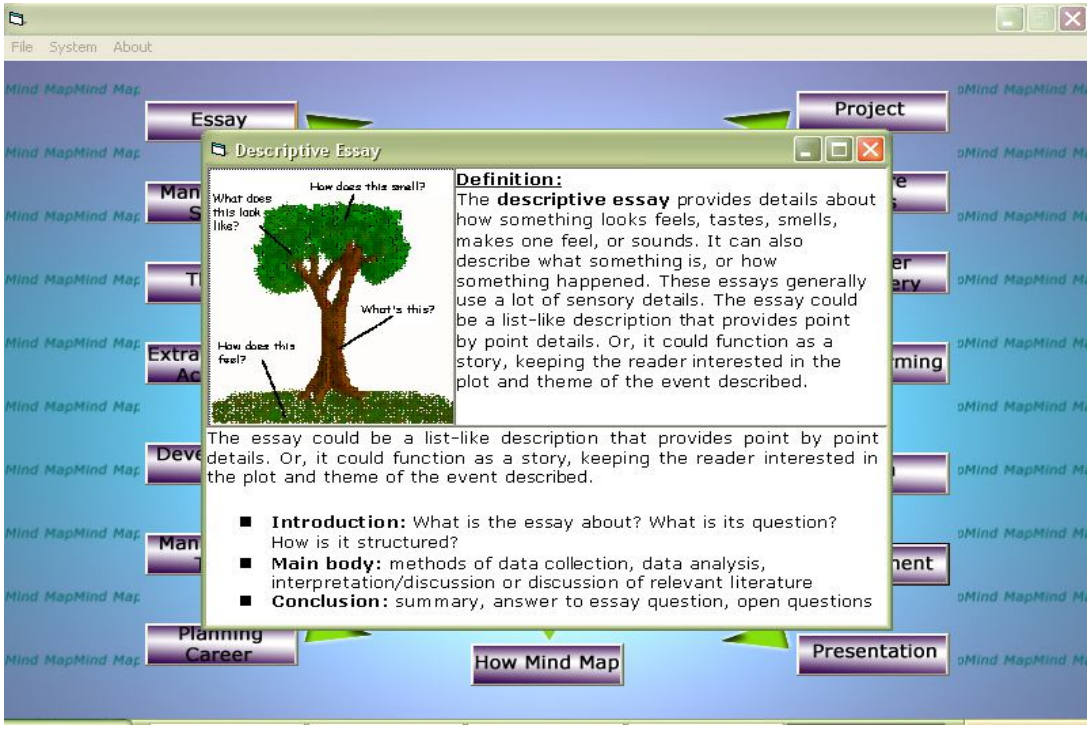


Figure 7.14: Help of Essay Mind Map

7.2.6 Testing

We test on some ELPRO student in BRAC University. We give them to write two essays on same topic. One is before using this software and second one is after using the software.

BEFORE

21st February

21 February is national Language day. Before the liberation war Bangladesh was known as East Pakistan and was ruled by the West Pakistan's government. Suddenly they declared Urdu as our national language but Bangladeshi people didn't agree with their decisions. Student of Dhaka University betrayed and killed by the Pakistan's Government.

They walk barefooted to Shahid Minar and they go to shahid minar singing the most cherished song "Amar bhaier rocte rangano…." they pay homage and tribute to the memory of the martyrs. They offer flowers, prayer and suras to the martyrs' souls.

It is very prideful for every Bangladeshi that 21 February is declared as an international language day.

Using this tool

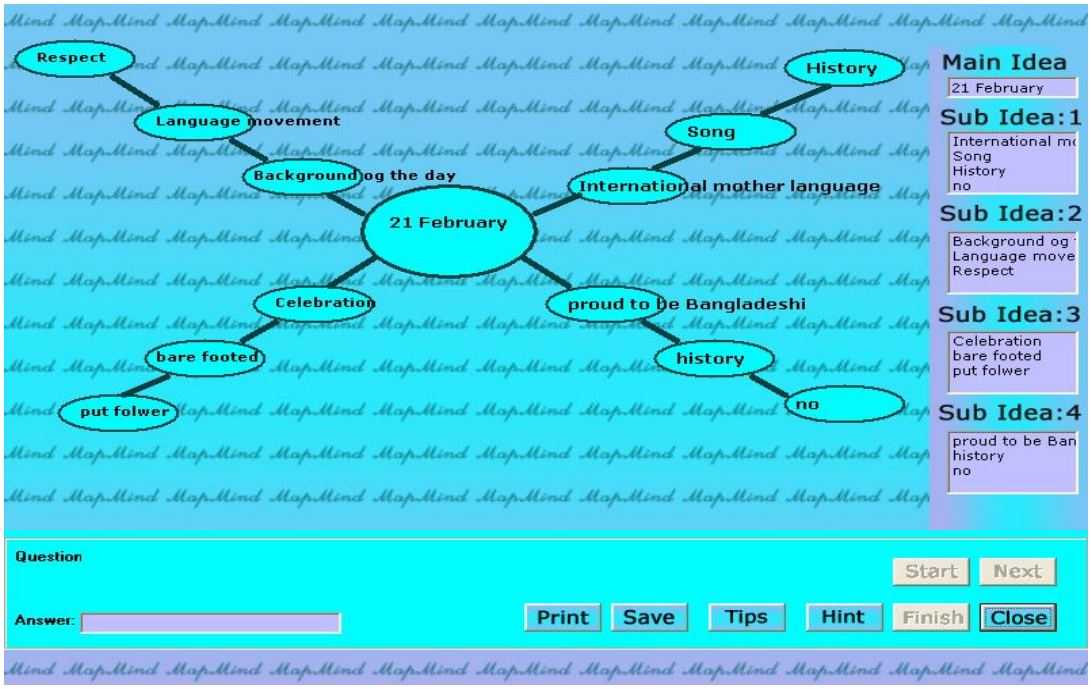


Figure 7.15: Mind Map made by ELPRO students

AFTER

21st February

21st February is celebrated as an international mother language day. It is very prideful for every Bangladeshi. In 1952, 21st February Salam Barkat Rafiq sacrificed their life for our language. Before the liberation war Bangladesh was known as East Pakistan and was ruled by the West Pakistan's government. Suddenly they declared Urdu as our national language but Bangladeshi people didn't agree with their decisions. Student of Dhaka University betrayed and killed by the Pakistan's Government.

February 21 people get up early in the morning remembering the memory of the martyrs. They walk barefooted to Shahid Minar. Most of them put on black badges on their shoulder. They go to shahid minar singing the most cherished song "Amar bhaier rocte rangano …." they pay homage and tribute to the memory of the martyrs. They offer flowers, prayer and suras to the martyrs' souls. They also gather in the mosque, temple and some other religious institution pray for salvation of the

martyrs departed soul. People also attended meetings and seminar to get inspirations to uphold their mother tongue.

FEEDBACK

The students of ELPRO says that, this tools is-

- Helpful
- Easy to understand
- Time consuming
- Helpful for the beginner, but not in the exam hall

Chapter 8 Conclusion

Mind Map tool is not a required tool for student. It is only a helping tool for helping a student develop a step-by-step questioning attitude to improve learning skills. Using Mind Map a person can improve his\her creativity. Practicing Mind Map regularly can help a person to proper utilizing his\her potential. At the very beginning user may face difficulty with doing Mind Map. But regular practice can make a person to become a perfect Mind Map maker.

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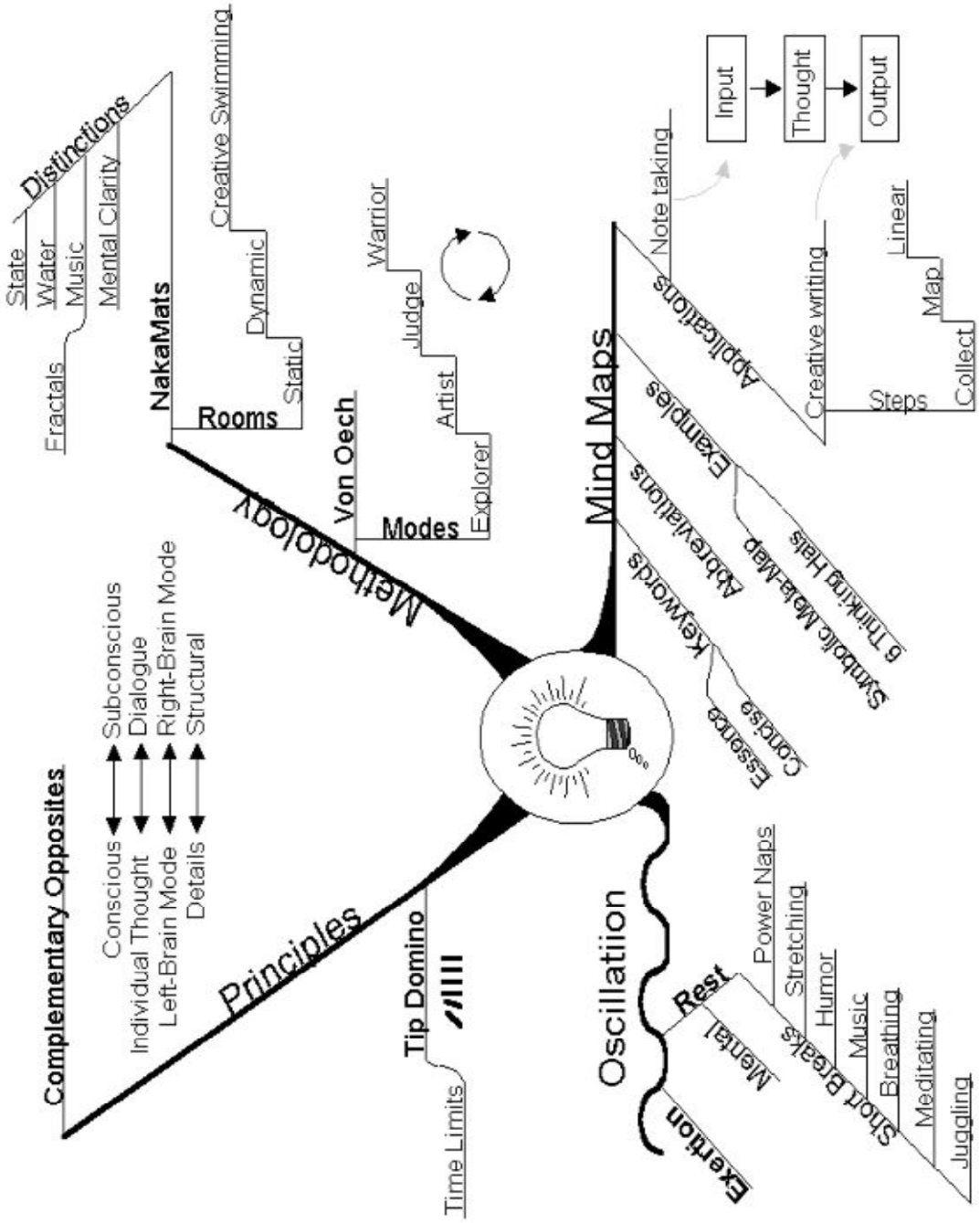
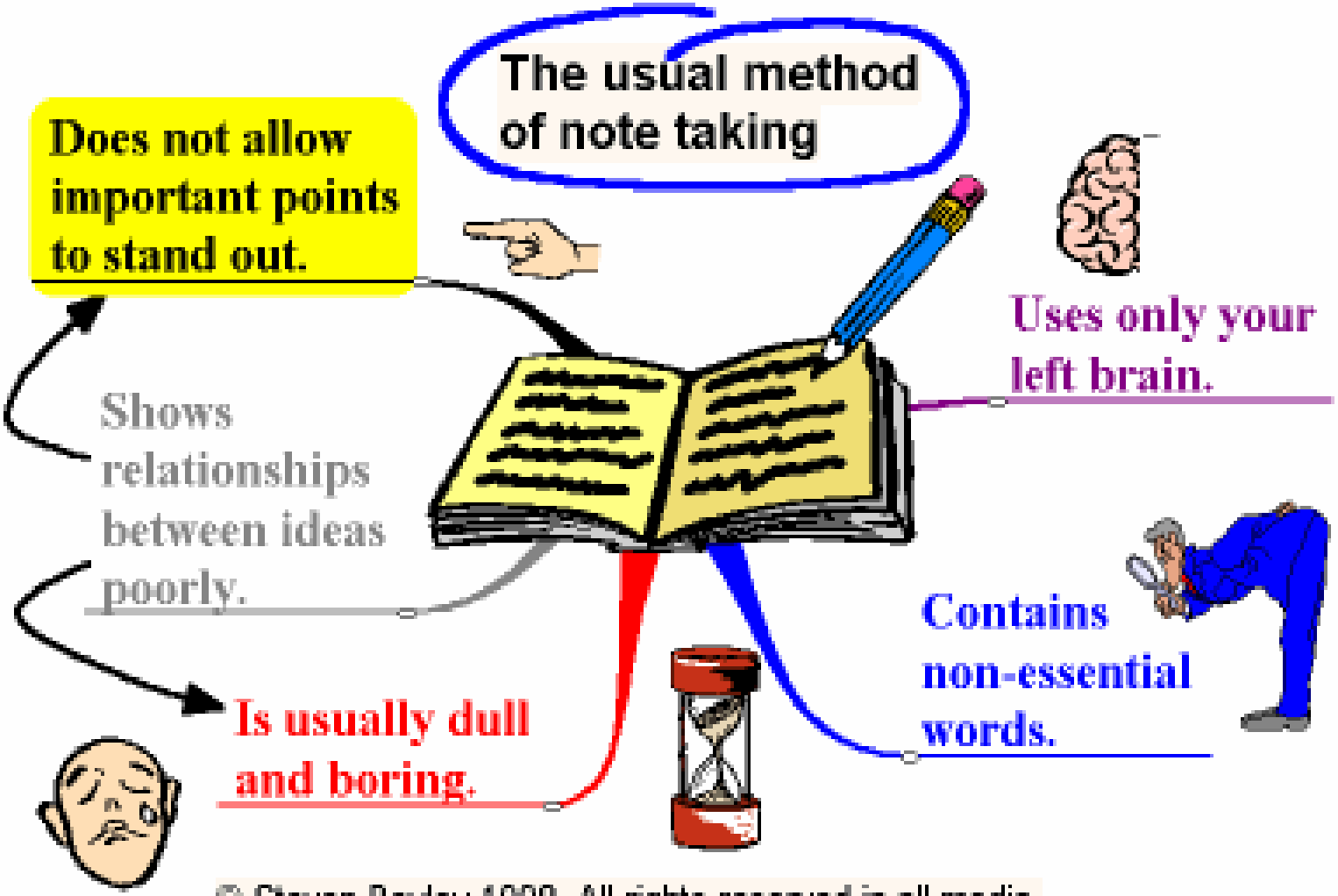
Appendix A

Mind Map use in thesis paper (Big Picture)




The usual method of note taking
Does not allow important points to stand out.
Uses only your left brain.
Shows relationships between ideas poorly.
Contains non-essential words.
Is usually dull and boring.
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No Professional Training/Degrees
COMPETITION
Professional Training/Degrees

Appendix B

Mind Map (Made by BRAC University students)