

DAM (DEPARTMENT OF AGRICULTURE MARKETING)
INFORMATION COLLECTION SYSTEM: SAMPLE DATA,
AGRICULTURE COMMODITY PRICES

Md. Mushfikur Rahman
Student ID: 01101013

Department of Computer Science and Engineering
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BRAC University, Dhaka, Bangladesh

DECLARATION

In accordance with the requirements of the degree of Bachelor of Computer Science and Engineering in the division of Computer Science and Engineering, I present the following thesis entitled 'DAM (Department of Agriculture Marketing) Information Collection System: Sample Data, Agriculture Commodity Prices'. This work was performed under the supervision of Dr. Yousuf mahabubul Islam.

I hereby declare that this thesis is based on the results found by myself. Materials of work found by other researcher are mentioned by reference. This thesis, neither in whole nor in part, has been previously submitted for any degree.

Signature of
Supervisor
(Dr. Yousuf Mahbubul Islam)

Signature of
Author
Md. Mushfikur Rahman

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Author: Md. Mushfikur Rahman

ABSTRACT

The essential data of agriculture marketing information are price data. Government to decide on the policies on production, export, import, price support need more accurate and faster knowledge of agriculture marketing information regular basis. Marketing information plays a vital role in the functioning of the whole market, by regulating the competitive marketing process. Marketing information helps farmers make profitable decisions in the short term what price to expect and decide what to produce. Making timely and unbiased information available to the farmers help them, in bargaining with the traders for a fair price for their crops. The aim of proposed information collection system is to provide very fast, timely, reliable and up to date agriculture commodity prices collection all over the country on regular basis through mobile phone SMS service. All the information stored in the database automatically. Stakeholder can get marketing information from currently stored price data what they need through mobile phone SMS service.

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CHAPTER I

1. INTRODUCTION

Since the 1950s, People have turned to the computer for help in solving problems. A computer is a machine that processes facts and figures to produce information. Therefore, information is the result of processing facts and figures in ways that are useful to people.

With the aid of computers, scientists perform data storage and retrieval. Data from current research can be stored on a computer, and computerized data libraries can be searched to find relevant reference materials. Sources of information often exist in different geographic locations that can be accessed through Mobile phone SMS service. Data is usually organized and cross-referenced in large collections called databases.

Information highway where information is power and it has a value. People are seeking information in different perspective what they need. Agriculture marketing information is one of the valuable data that people are seeking regularly for gather knowledge and taking decision easily, what is the buying/selling price of a product. Most of the people do not know where and how they will get price data.

DAM (Department of Agriculture marketing) is provided agriculture commodity prices information all over the country. People are confused about the price data reliability and up-to-date in which DAM provided. Current information collection system of agriculture commodity prices of DAM is manual based and take long time. If the information collection system takes to much time for a real time price data that will use less for the stakeholder taking decision for marketing.

1.1 About DAM

Department of Agriculture Marketing is the organization of Ministry of Agriculture government of Bangladesh. But Keeping in view of the importance of the marketing development the Department of Agricultural Marketing was created in then British India Since then the Department has been working for providing marketing services particularly to small & marginal farmers to fetch better prices for their produces.

The broad objective of the Department of Agricultural Marketing is to provide improved marketing services with a view to ensuring fair returns to the growers for their produces and adequate supply to the consumers at reasonable prices through improvement in marketing condition, reduction of marketing costs, regulation of market practices and market promotion present, specially new crops like, maize, soybean, potato and sunflower etc are given emphasis.

Different marketing information such as, market price, production and inputs, estimated production figures, market assemblage figures, supply of commodities of the market, stock position, product processing etc. are regularly collected, compiled, analyzed preserved and disseminated for use by the govt. statutory bodies, NGOs and the Private sector on request. Weekly wholesale and retail price of farm products are collected from 150 important rural assembly markets of the 64 districts. Monthly wholesale prices of minor farm products are also collected from district head quarter markets. The respective section compiles and analyses all the information. The recipients of the market information collected by the DAM have been govt. agencies, such as different ministries, Army, BDR, Banks, Customs authority, Bureau of statistics, Chamber of Commerce and industries, international agencies such as World Bank, FARO, US AID, FRI, UNDP universities, libraries, NGOs and various other public and private sector institutions.

Survey and research on the marketing of agricultural products have been being carried out by the DAM with its limited manpower and resources to identify the problems as well as problem areas and take/suggest suitable remedial measures. Researches/Studies on production, storage, transportation, processing of farm products along with cost of production & price spread studies are being carried out by using Rapid Market Appraisal and Conventional Survey Methods. These studies are conducted with the help of the hired firm under different products/programs to identify the problems associated in the different stages of marketing of farm products.

After the identification of problems the concerned authorities are contacted to take remedial measures for the improvement of the marketing of farm products. In addition to the above studies the DAM analyses the market information received from the field officials and prepares commodity situation reports. Reports on price trend, marketing channels etc on weekly and monthly basis and submit the same to the concerned authorities.

1.2 Problem Statement

The following difficulties are experienced in collecting, reporting and disseminating the prices:

- (I) The most important weakness is lack of trained, insufficient manpower and the work done by manually. There is no computer data base service for data and information operation.
- (II) There is considerable time lag between collection and issue of the Weekly Price Bulletin as the price statements are sent by post as ordinary mail. Sometimes the statements are miss/lost in transit. As a result, it takes 30 to 40 days to finally issue the bulletin after examination.

(III) Collection of comprehensive data and their quick reporting by wire/telephone/telex to national/ regional Headquarter for broadcast through radio involve great deal of staff and cost. Budgetary constraint limits the coverage and quality of the Market Intelligence Service.



Fig 1.1: Current marketing condition



Fig 1.2: Current market commodity

1.3 Need for Agricultural Market Information Service in Bangladesh

1. All parties associated with production, marketing, storage, transportation and processing of agricultural crops/inputs require market information for arriving at the correct decisions regarding their operations. The major parties requiring the information and their needs are:

(I) Farmers to decide what crops and varieties to grow and to what extent, when and where to sell and what is the prevailing price in important assembly/terminal markets where the price formation takes place.

(II) Traders/Exporters/Processors to decide where to buy and where and when to sell to maximize profits.

(III) Transportation agencies to decide about the expansion of transportation and handling facilities.

(IV) Consumers decide when and where to buy to get maximum satisfaction at the minimum cost.

(V) Government to decide on the policies on production, export, import, price support, procurement, distribution rates of import and export taxes and duties, expansion of market, transportation, storage, processing and credit facilities to meet the national targets of agricultural production as well as to initiate regulatory measures, as and when needed, to curb hoarding/profitteering by the traders.

2. Availability of timely and reliable market information improves transparency of the market and helps in correct price information and raising the efficiency of the marketing system. Farmers, particularly small farmers, badly need the market information to bargain with the traders for the price of their crops. One of the reasons for the low price received by the growers, particularly small farmers, is lack of market information that also results in wide inter-market price variation.

3. Hence the need for making timely and unbiased information available to the farmers to help them, particularly the small farmers, in bargaining with the traders for a fair price for their crops.

চাড়া দামের সুফল পায় না কৃষক

শওকত হোসেন মাসুম

মিসেস হাসিনার ঈদের বাজারে এরই মধ্যে টান পড়েছে। চাল থেকে শুরু করে সব ধরনের খাদ্যপণ্য কিনতে অতিরিক্ত ব্যয় হওয়ায় এখন তাকে ঈদের পোশাক কেনার বাজেট কমাতে হচ্ছে। সরকারি কর্মকর্তা রেজা আলীর বেতন কিছু বাড়লেও খরচ বেড়েছে আরো বেশি। ফলে বাড়তি বেতন তার অবস্থার কোনো পরিবর্তন আনতে পারেনি। মিসেস সাদিয়া আফরিনের অবস্থা একটু ভালো। তার মা তাকে এখনো সহায়তা করেন বলে বাজেট খুব একটা কাটাকাটি করতে হচ্ছে না। বেশির ভাগের ভাগ্যই মিসেস সাদিয়ার মতো নয়। ফলে সীমিত আয়ের মানুষকে প্রতিদিনের খাদ্য যোগাতেই হিমশিম খেতে হচ্ছে।

রমজান মাসে সীমিত আয়ের মানুষের বাজেটে টান পড়েছে। আগেই ধারণা ছিল, এ সময় নিত্যপ্রয়োজনীয় জিনিসপত্রের দাম বাড়বে। সরকারের সাধ্য হবে না উর্ধ্বমুখি ঠেকানোর। সরকার বিপত চার বছরের মতোই পশাদ্য নিয়ন্ত্রণে আবারও ব্যর্থ হয়েছে। আর তাতে সাধারণ মানুষ আরো বিপাকে পড়েছে।

সীমিত আয়ের মানুষ যে বাড়তি অর্থ ব্যয় করছে

তাও কিছ যাচ্ছে না কৃষকের হাতে। কৃষক পায় নামমাত্র মূল্য, সেই পণ্য খোলাবাজারে আসতে আসতে দাম বেড়ে যায় খিঁচুণ। লাভবান হয় মধ্যস্থত্বভোগীরা। আর এ তালিকায় পাইকারি ব্যবসায়ী থেকে শুরু করে চান্দাবাজ পুলিশ ও মাদান সবাই আছে।

আমরা জানি আমাদের সবজি নিয়ে ব্যবসায়ীরা অনেক লাভ করে। হাটের দিন আমরা জমির এক থেকে দেড় মণ বেতন নিয়ে যাই। এগুলো নিয়ে তো শহরে যাওয়া যায় না। ছোট কৃষকরা সাধারণত

আধামণ-একমণ করেই সবজি বিক্রি করেন। কিন্তু ব্যবসায়ীরা গাড়ি করে সবজি শহরে নিয়ে যায়। তাদের লাভও বেশি। আমরা তো সেই দাম পাইছি না—বলছেন পারনার হামিদপুর গ্রামের কৃষক ওয়াজিউদ্দিন। অথচ পণ্যের দাম বাড়লেই সরকারের পক্ষ থেকে বলা হয় যে এতে কৃষকরা লাভবান হয়।

বিশিষ্ট অর্থনীতিবিদ ড. সাজ্জাদ জবির এখনও অনেকে বলেন, সাধারণত খুব স্বল্প সময়ের জন্য উৎপাদিত পণ্যের দাম বাড়ে এবং তা দীর্ঘস্থায়ী হয় না। দীর্ঘস্থায়ী হলে উৎপাদকরা মূল্য পায়। দেখা যায়, খুব কম সময়ের জন্য উৎপাদিত পণ্যের দাম বাড়ে। এ সময়টা ৭ থেকে ১০ দিনের। সাধারণত অক্টোবর মাসে এমনটা দেখা যায়। আর এবার এর সঙ্গে যুক্ত হয়েছে রমজান মাস। এই সময় নিয়ে সরকারের কোনো পরিকল্পনা থাকে না বলেই সুযোগটা নেয় একশ্রেণীর ব্যবসায়ী। তারা স্বল্প সময়ে বেশি মুনাফা করতে শুরু করে। তবে কিছু দিনের মধ্যে বাজার আবার স্বাভাবিক হয়, দাম কমে যায়। ফলে উৎপাদক বা চাষিরা স্বল্প সময়ে বেশি মুনাফার ভাগ পায় না। আর এতে কৃষকের ভাগেরও কোনো পরিবর্তন হচ্ছে না।

দেশে সবচেয়ে বেশি শাকসবজি আসে উত্তরবঙ্গ ও বৃহত্তর ঢাকার বিভিন্ন অঞ্চল থেকে। সবখানেই কৃষকরা আগের তুলনায় খানিকটা বেশি দাম পাচ্ছে। তবে উৎপাদন খরচও বেড়েছে। আবার মূল্যস্ফীতির সার্বিক চাপে কৃষকের জীবনব্যয়ের ব্যয়ও বেড়ে গেছে অনেক। ফলে বাড়তি আয় ব্যয়ের চেয়ে বেশি হচ্ছে না। বাংলাদেশ পরিসংখ্যান ব্যুরোর তথ্যে দেশে এখন শহরের তুলনায় গ্রামাঞ্চলে মূল্যস্ফীতি বেশি।

২০০১ সালের অক্টোবরে বর্তমান সরকার ক্ষমতা নেয়। সে সময় গড় মূল্যস্ফীতি ছিল মাত্র ১ দশমিক ৪৭ শতাংশ এবং পরবর্তী ট-পথে বা আগের বছরের তুলনায় এ হার ছিল ১ দশমিক ৭১ শতাংশ। এর পর থেকে মূল্যস্ফীতি কেবলই বেড়েছে। সর্বশেষ হিসাব অনুযায়ী গত আগস্টে মূল্যস্ফীতি ছিল ৭ দশমিক ৯৮ শতাংশ। জোট সরকারের সময়ে এটাও মূল্যস্ফীতির সর্বোচ্চ হার। এর আগে গত বছরের সেপ্টেম্বরে এরপর পৃষ্ঠা ১৩

কেন কতো দামে বেচে কেনে

পণ্য	কৃষক কত পয় (টাকায়)	পাইকারি বাজারে দাম (টাকায়)	ফল যে দামে কেনে (টাকায়)
কেন	১২-১৪	১৭-১৮	৩২-৩৪
শসা	১৬	২০	৩২
বরবটি	৭-১২	১৬-২০	২৪-২৮
কবলা	২০	২৮	৩৬
কাঁকরেল	৮	১৫	২৪
মুগা	১০-১২	১৬	২৪

সূত্র: গণক মাগোরে সারকর্মী

পথে পথে চান্দাবাজি

উত্তর ও দক্ষিণবঙ্গ থেকে এক ট্রাক সবজি আনতে চান্দা লাগে ২ হাজার টাকা

আবিন রহমান

পোশারের কিকরপাছার গাভখালী থেকে এক ট্রাক পোশে আনতে কিকরপাছা থানাকে দিতে হয় ২০০ টাকা, মাগুরা পুলিশ ১৫০ টাকা, বাশার পুলিশ ১৫০ টাকা, বাজাবাজী মোড় ১৫০ টাকা, ফরিদপুর বিটের চান্দা ১৫০ টাকা, মৌলভীবাজার হাট ৩০০ টাকা, মনিকগঞ্জ বিট ২০০ টাকা, ঢাকার পাসতলীতে ২০০ টাকা, কারওয়ান বাজারে চুকতে ৩০০ টাকাসহ মোট

১ হাজার ৮০০ টাকা।

মেহেদপুরের ট্রাকচালক অরুণ এজাভে এক নিম্নোক্ত চান্দার অঙ্ক মুখস্থ বলে দিলেন। তার কাছে গ্রন্থ ছিল—এক ট্রাক কাঁচা তরকারি গ্রামের বাজার থেকে ঢাকায় আনতে কত টাকা চান্দা দিতে হয়? কারওয়ান বাজারের ব্যবসায়ীরা জানান, দেশের উত্তর ও দক্ষিণবঙ্গ থেকে প্রতিদিন গড়ে আড়াই থেকে ৩০০ ট্রাক বিভিন্ন ধরনের কাঁচা শাকসবজি নিয়ে এরপর পৃষ্ঠা ১৩

কৃষক কম দামে বেচে বেশি দামে কেনে

অরুণ কর্মকার

সাক্ষরতার বাপনিবাড়ী গ্রামের কৃষক মোহাম্মদ আফজাল হক ভরা বাজারে যোগা দিয়েছেন, তার কৃষি কাজ এ বছরই শেষ। গতকাল ১৭ অক্টোবর কান্দামারিচ নিয়ে। পাইকারি দাম বলে সাড়ে ৬০০ টাকা মণ (৪০ কেজি) প্রতি কেজি ১৬ টাকা ২৫ পয়সা)। এ এরপর পৃষ্ঠা ২ কলাম ২

● বাজারে সবজির দাম চড়া হলেও কৃষক হতাশ: পৃষ্ঠা-৪

Fig 1.3: Farmers are in critical marketing condition

1.4 Purpose of the Study

Comparison of current market information collection system by DAM and my proposed system

There is no such committee in Bangladesh; all market information are collected by the field staff of the DAM by visiting the markets, observing the actual transactions and after discussion with the traders and growers operating in the markets.



Fig 1.4: Existing data collection system of DAM

In the national Headquarters' one Deputy Director is in charge of the 'Market Intelligence and Statistics' Division who is assisted by two Assistant Directors and one Research Officer and few staff. The Division is divided mainly into two sections - (a) Daily Price Section and (b) Weekly Price Section. Daily Price Section is look after and manage by one Assistant Director who is assisted by one City Marketing Officer, two Market Investigators and some other staff;

while the weekly Price Section is looking after by a Research Officer who is assisted by some supporting staff. The other Assistant Director in this section is mainly responsible for verification of information supplied, by the field staff in the Weekly Price Statements by actually visiting the markets and discussion with traders and reporting staff; he also looks after the work in connection with growers level prices, supply, of price and other market information to other agencies and other miscellaneous work of the section.

District Marketing Officers/Market Investigators in charge of districts report weekly wholesale and retail prices and other market information in respect of 150 important markets in the prescribed form to the Headquarters' (Research Officer). There is no staff at the district level now for verification of the prices/information supplied by the report staff. Six Divisional Deputy Directors, however, supervise the work of the District Officers and verify the information supplied by them. There is no staff of the Department at upazila (police station).

Limitations:

Current market information collection systems by DAM have no automated data collection and stored system. Also they have not any automated system to provide information to stakeholders. Information received from the field staff are compiled, analyzed, stored and The Department can not disseminate the price information in the form of daily bulletin, weekly bulletin and in the time frames as requested.

But my proposed system supports the information collection system very fast, timely, reliable and up to date data through mobile phone SMS service. We are all always-recognized Bangladesh as a huge potential for mobile telecommunications. There is almost 95 percent mobile phone network coverage existing in Bangladesh now.

1.5 Objectives and Scope

The objective of Information Collection System of Agriculture Commodity Prices is to make the prices collection system easier and to have a wider access to marketing information. The system provides the better way to collect price data within two or three hour from all over the country where DAM collects the same data taking too much time. They provide those data by publishing a book to the government-authorized organization taking seven-month time. The current existing system does not have any system to provide marketing information to its stakeholder what specific information needs. As DAM collected agriculture price information from all over the Bangladesh are back dated that the farmers, consumers, wholesalers, retailers etc never get benefits for taking their marketing decision. The proposed system collection the agriculture commodity prices information very fast on broad range of market area. Any stakeholder can get any commodity price information from any place through mobile phone SMS service.

The scope of the project is to provide agriculture marketing information to those farmers, small businessmen who have not an ability to buy the current information. But the automated system cut down the total cost of collecting and reduces the time required compare to the current marketing information collection system. And the proposed system stores a large amount of data availability. Stakeholder can get that information without any big cost service like Internet, television, newspapers, or any brokers. Only they send a SMS to the system and few second later will get their necessary price information.

1.6 Methodology

The procedures or methodologies for the project “DAM (Department of Agriculture Marketing) Information Collection System: Sample Data, Agriculture Commodity Prices” are described below,

1.6.1 Analysis

To complete the project I will follow the SDLC process. The first phase of SDLC is **Analysis**. In this phase I will carry out the followings,

1. First I will gather thorough knowledge of the existing system to have clear idea about the system. For this I will arrange interview session with the Mr. Sirajul Islam, Director, Dept. of Agriculture Marketing, Khamar Bari, Dhaka and Mr. Md. Zobdul Hoque, Director, National Accounting Department of BBS.
2. I will study on Sample data of growers level agriculture commodity prices of DAM and Monthly BBS Bulletins.
3. From my gathering knowledge I will find the pitfalls of the existing system.
4. I will review the system to find a suitable solution to overcome these pitfalls.
5. Then I will determine the proposed system. I will follow both the traditional and modern way to determine the requirements. In the traditional way I will arrange an interview session with a pre-selected questioner. Then I will arrange a JAD (Joint Application Development) to get the sensitive information to determine the requirements. This process of gathering requirements is known as the modern method of determining system requirements. I will use prototype during the requirement-gathering period. After the JAD session I will have the

requirements in my hand and I could turn these requirements into formal analysis and design specifications.

6. At last, I will structure system requirements:

- a. First, I will do process modeling. The deliverables for process modeling are Context diagram, DFD's of current systems, new system and thorough description of each DFD component.
- b. I will do logic modeling. The deliverables for logic modeling are decision table representation or the system sequence diagram for each process on the lowest level data flow diagram.
- c. Then I will do Conceptual Data modeling. The primary deliverable from the Conceptual Data modeling step is an E-R Diagram (Entity Relationship Diagram).

1.6.2 Design

The second phase of SDLC is **Design**. In this phase I will carry out the followings,

1. First, I will design the logical database. To do this, I need to consider all inputs, outputs and every data element on the E-R diagram. Then I will design the physical database. Here I will use the relational database model.
2. I will design the forms and reports were established as part of the design strategy formed at the end of the analysis phase. To design forms and reports I will follow the prototyping approach. I will have to design the Interfaces and Dialogues at this stage.

3. Then I will finalize the design specification. The only deliverable is a set of physical design specifications for each separate part of the entire system.

1.6.3 Implementation

The third phase of SDLC is **Implementation**. In this phase I will carry out the followings,

I will code the system according to the design specification. Then I test the new system and after the successful testing I will install the system. At last I will prepare the Documentation for the system

CHAPTER II

2. PROJECT INITIALIZATION AND PLANNING

The project initiation and planning is a critical activity in the life of a project. The objective of this process is to transform a manual based delay system request into a tangible system description clearly outlining the objective test plan, feasibility issues, benefits, cost and time scheduling for the project.

2.1 System:

2.1.1 Project name:

DAM (Department of Agriculture Marketing) Information Collection System: Sample Data, Agriculture Commodity Prices

2.2 Business Need:

Bangladesh government expenses a lot of money through DAM collecting information for taking policy decision. But the problem is that they don't get that information on timely, up-to-date, reliable data. And stakeholders all over the country also need agriculture marketing information on regular basis for their professional needs to save time, cost and get the required service as quick as possible.

2.3 Functionality:

The new Information Collection Systems will be more satisfactory because of the following functionalities:

1. District Marketing Officer and District Marketing investigator can easily send the collecting marketing prices of different commodity from grower's level market by mobile phone through SMS to DAM data database system.
2. All the commodity prices automatically store in the database. There is no need to manually store the data in database system.
3. Administrator officer login with Password and check sending prices data are store in database or not. Administrator officer also can do adding new GIS information and new commodity information. He can also delete old GIS information and old commodity information, which is not exists in the market. If any information of GIS or Commodity information needs to edit he can update those information.
4. All updated GIS and Commodity information print copy are sending to District Marketing Officer and District Marketing investigator.
5. All the prices information will be stored in the database Server.
6. Stakeholder with login Password can view Average Retail Prices of agriculture commodity from DAM.
7. Stakeholder also can send SMS to know a particular Commodity's Maximum and Minimum Price of a particular Market place of specific date. After that he/she will get an auto reply message on mobile phone of Prices information details.
8. Finally the DAM Authorized person will be able to access all the data at any time and will be able to submit these reports to the authorized distributor.

2.4 Expected Value:

Tangible:

1. It will save large amount of money such as reduce government expenses.
2. It also save large amount of money of stakeholder such as currently who need price information has to go Department of Agriculture Marketing, Dhaka what was increase transport cost, but all the information can be easily found on computer interface or mobile phone through SMS.
3. It will save a lot of time on both the perspective of District Marketing Officer or District Marketing investigator and Stakeholder.
4. This system ensure the reliability and data are up-to-date.
5. It will improve management satisfaction.
6. The stakeholder all over the country such as Businessman, Farmers, buyers who never get any price information daily basis from DAM, now from this system they can easily get agriculture marketing price information.

2.5 Special Issues or Constraints:

The concept of mobile phone SMS through information collection system of agriculture commodity prices and get those stored prices from anywhere through SMS is new Bangladesh. So it will take time to understand the system in local area both government employee and stakeholder.

2.6 Feasibility Analysis:

Technical Feasibility: (Can We Build It?)

Familiarity with Application

1. The proposed system is implemented on existing real data of DAM.

2. The use of Mobile phone very popular in Bangladesh now. All categories of people are use mobile phone. The most interesting thing is that village farmers are using mobile phone that why one of mobile phone company name here “Grameen Phone”.
3. All the GIS Code and Commodity Code are available to District Marketing Officer or District Marketing investigator And Stakeholder.
4. All are familiar with SMS (Short Message Service) and message-sending types are very easy to understand.

CHAPTER III

3. ANALYSIS

3.1 Interview Report

Person Interviewed: Humayun Kabir (Research Officer, Agriculture Marketing Department, Khamar Bari, Dhaka)

Interviewer: Md. Mushfikur Rahman

Date: 25/07/2005

Purpose: To gather detail information about the current agriculture commodity prices collection system of Agriculture Marketing Department and identify the problem and solutions for the new system.

Question Format:

Q 1. How many markets select to collect agriculture commodity prices all over the country?

Ans: Each district we have selected two market where are most of the growers products are available. Goods are mostly marketing by buyers and sellers. In total we have selected 128 markets all over the country.

Q 2. Who are collecting agriculture commodity prices from grower's level markets?

Ans: Every district we have two officers, District Marketing Officer and District Marketing Investigator. They have sub ordinate employee.

Q 3. How District Marketing Officer and District Marketing Investigator collect agriculture commodity prices?

Ans: They collect agriculture commodity prices from a market one time within 15 days. For example: Amtali and Pathargata are selected market for Barguna district. Marketing officer will collect Agriculture Commodity Prices on marketing day of Amtali first week and marketing day of Pathargata second week.

Q 4. How they send data to head office?

Ans: we provide them a data collection format chart. All the collected data put on it and send to the Agriculture Marketing Department (Khamar Bari, Dhaka) by government postal service. We have not any Internet service or any automated systems to collection those data.

Q 5. Who are the users of the collection of the Agriculture Commodity Price?

Ans: We mainly provide those data for government organization because of government needs those data for making policy decision, BBS, Research Organizations. Stakeholder can know about marketing prices from us.

Person Interviewed: Mr. Md. Zobdul Hoque (Director, National Accounting Department of BBS)

Interviewer: Md. Mushfikur Rahman

Date: 10/08/2005

Purpose: To gather detail information about the current agriculture commodity prices collection system of BBS and identify the problem and solutions for the new system.

Question Format:

Q 1. What types of data do National Accounting Department of BBS Collecting?

Ans: National Accounting Department of BBS is mainly collecting Agriculture Commodity Prices. The Monthly Statistical Bulletin of Bangladesh is designed to provide current monthly data on major socio-economic sectors of the country.

Q 2. Are your department collect price data all over the country?

Ans: We mainly collect price data from Department of Agriculture Marketing that is working at growers level market. National Accounting Department of BBS collects Agriculture Commodity Prices of all over the country. We mainly collect those data from the popular market of each district where the entire agriculture commodities are available and farmers are sold their produce commodity

Q 3. What is the last update of all those data?

Ans: We have processed all those data after collected data then we published on Monthly Statistical Bulletin of Bangladesh. Our last published Monthly Statistical Bulletin was January'2005.

Q 4. Which data is required regularly?

Ans: It was not possible for us to collect all the agriculture commodity prices on regular basis because of postal service are not fast in our country.

Q 5. How you collect those data regularly?

Ans: We have Statistical Department all the district in the country. Our marketing officers are survey of those markets on marketing day. They observe each commodity market prices. They send those prices on excel sheet format by government post services.

Q 6. Is this data collection systems is satisfactory?

Ans: We are not satisfied the existing data sending system but we have not any alternative solution at this moment. Another problem is that we don't know that sending data are reliable or not. We find that most of the marketing officers are sending Agriculture Commodity Prices all over the country without survey.

Q 7. Does National Accounting Department of BBS have any computerized database system to store data?

Ans: National Accounting Department of BBS has not any computerized database system to store data but we store the collecting data in excel sheet.

Q 8. What are the problems you have face for collecting those data?

Ans: The problems we faced for collecting those data are question of data reliability, cost of money, and take too much time. The update data always mistaken because of price data entry are in Ms-Excel sheet.

Q 9. Can you show the sample of data that you collect?

Ans: You can see our Monthly Statistical-Bulletin.

Q 10. Do you think that automated system will improve this situation?

Ans: Always we are seeking automated system that will improve this situation. If it possible we can save cost, time and the most valuable thing is that price data will be reliable.

3.1.1 Notes from observation

From the question answer section and interview I gather detailed knowledge about the Agriculture Commodity Prices collection systems. Now I give the detailed description about the systems:

1. Department of Agriculture Marketing (DAM) specified which agriculture commodity prices are collected from which market. They provide the commodity list to District Marketing Officer. The commodity list is updated by every crops session by DAM. Also DAM changes markets on basis of survey.
2. District Marketing Investigator collect agriculture commodity prices from grower's level market on survey.
3. All collection data are processed in district marketing office. After processed they type price data in a MS-Excel sheet format. The typed data are posted to Department of Agriculture Marketing (DAM), Dhaka by District Marketing Officer.
4. Research Officer, Department of Agriculture Marketing, receives those data. He checked the receiving data and send to the data entry sector for print.
5. Data entry officer take input those data into Microsoft Excel sheet to save and print.
6. The print copies are sending to the Director of Agriculture Marketing Department.
7. Director of Agriculture Marketing Department are finalizing all the collection of Agriculture Commodity Prices for distribution authorized distributor.
8. Director of National Accounting Department, BBS. Collect those data to publishing Monthly Statistical Bulletin-Bangladesh.

9. Monthly Statistical Bulletin-Bangladesh is only providing for Government Organization. Stakeholder can know the Agriculture Commodity Prices from DAM.

The problems in the existing system I find are followed:

- DAM information collection system is manual based and they have not any computerized database system.
- Their price data collection system takes too much time. All the market investigators send agriculture commodity prices from different market all over the country by ordinary post mailing system.
- Because of existing system takes time for data collection, there is a chance to send unreliable data to DAM.
- The cost of existing information collection system is too much expensive.

3.2 Data Flow Diagram of Current System

3.2.1 DFD of current manual system

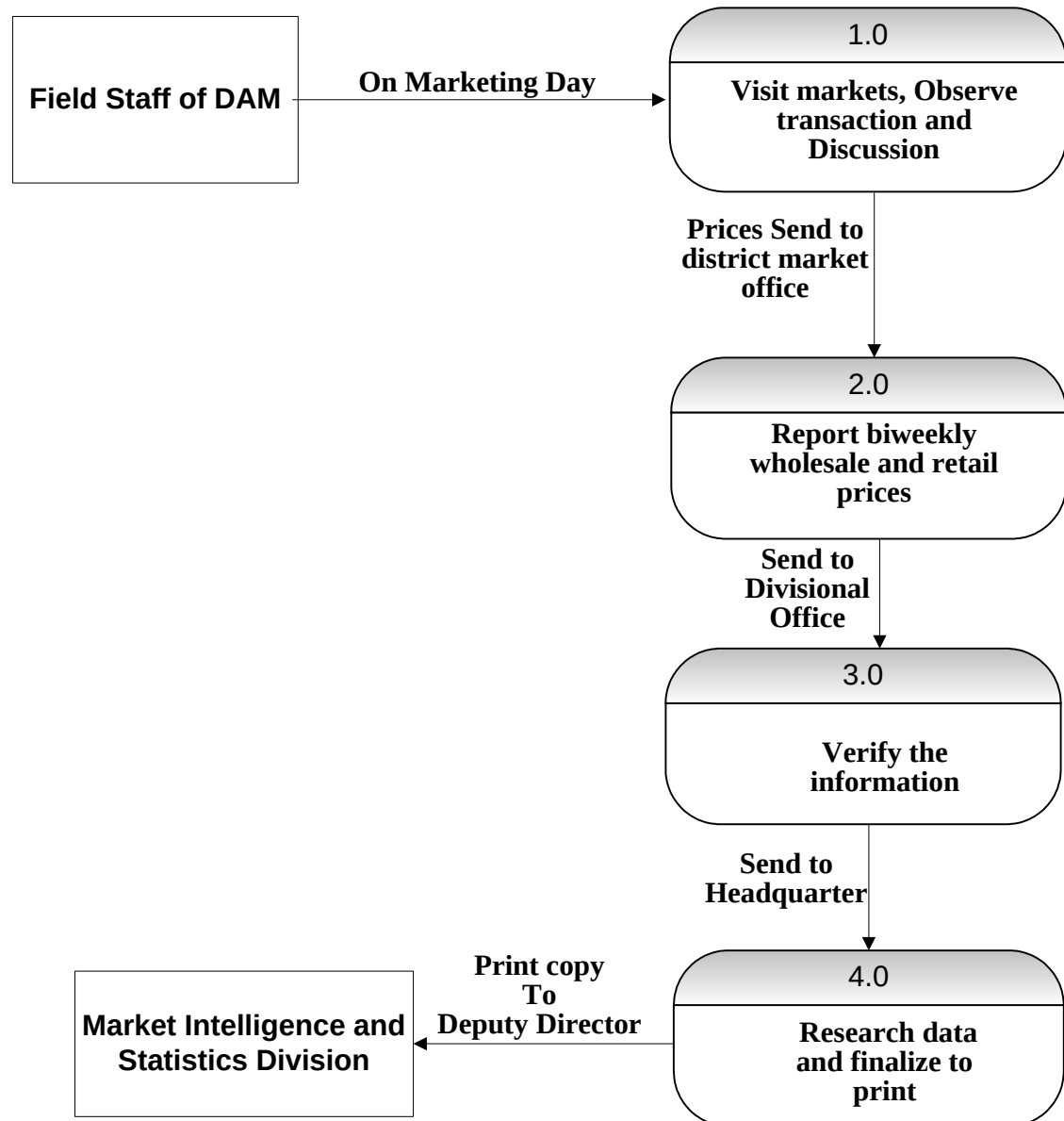


Fig 3.1: Data flow diagram current manual system

3.2.1.1 Thorough description

Data flow diagram current manual system

1. Field Staff of DAM: Field Staffs are the root level employee of the Department of Agriculture Marketing (DAM). They collected the agriculture commodity prices information from growers level market.
2. Visit markets: For agriculture commodity prices collection to visit specified market on marketing day and observed the transaction of commodity between buyers and sellers. Also discussion with them to justify the reality price.
3. Report Wholesale and Retail price: Collection of price data are calculated by District Marketing Officer/ District Marketing investigator.
4. Verify information: All price data are store in division office from different district of the central division for verification by divisional deputy director.
5. Research data: In DAM collection of agriculture commodity prices is research for justification and processed to data entry in Microsoft Excel sheets for print.
6. Market Intelligence and Statistics division: Here from the agriculture commodity prices are distributed different organization and stakeholder.

3.3 Context Diagram of Proposed System

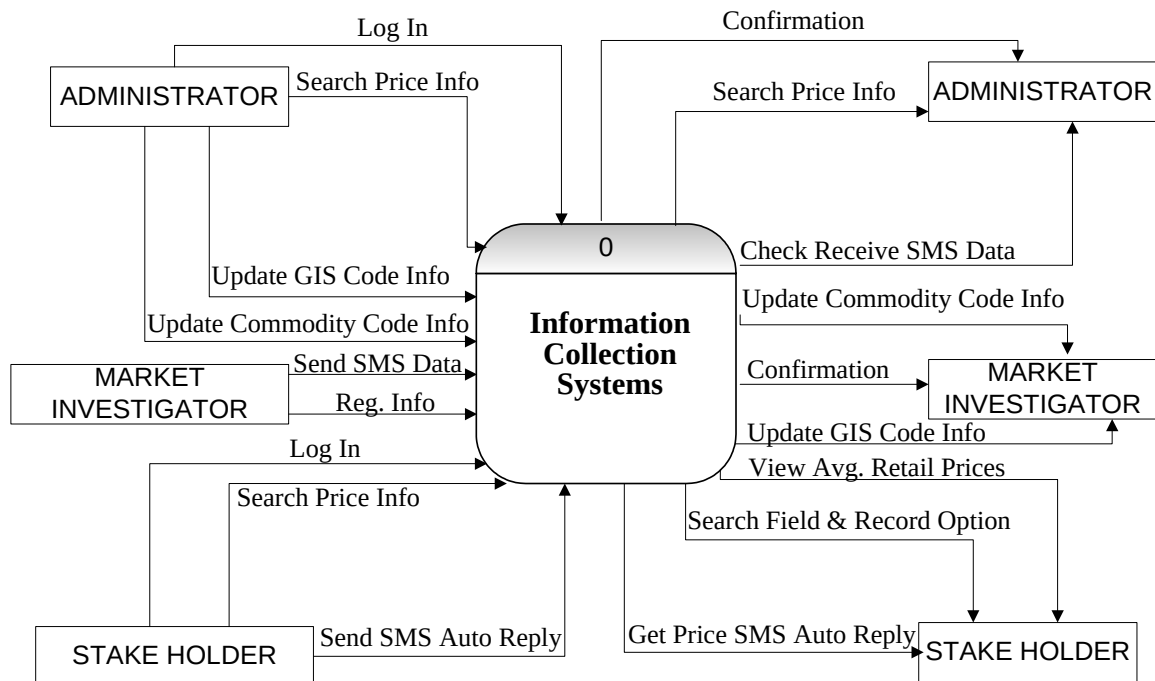


Fig 3.2: Context Diagram

3.3.1 Level 0 data flow diagram of proposed system

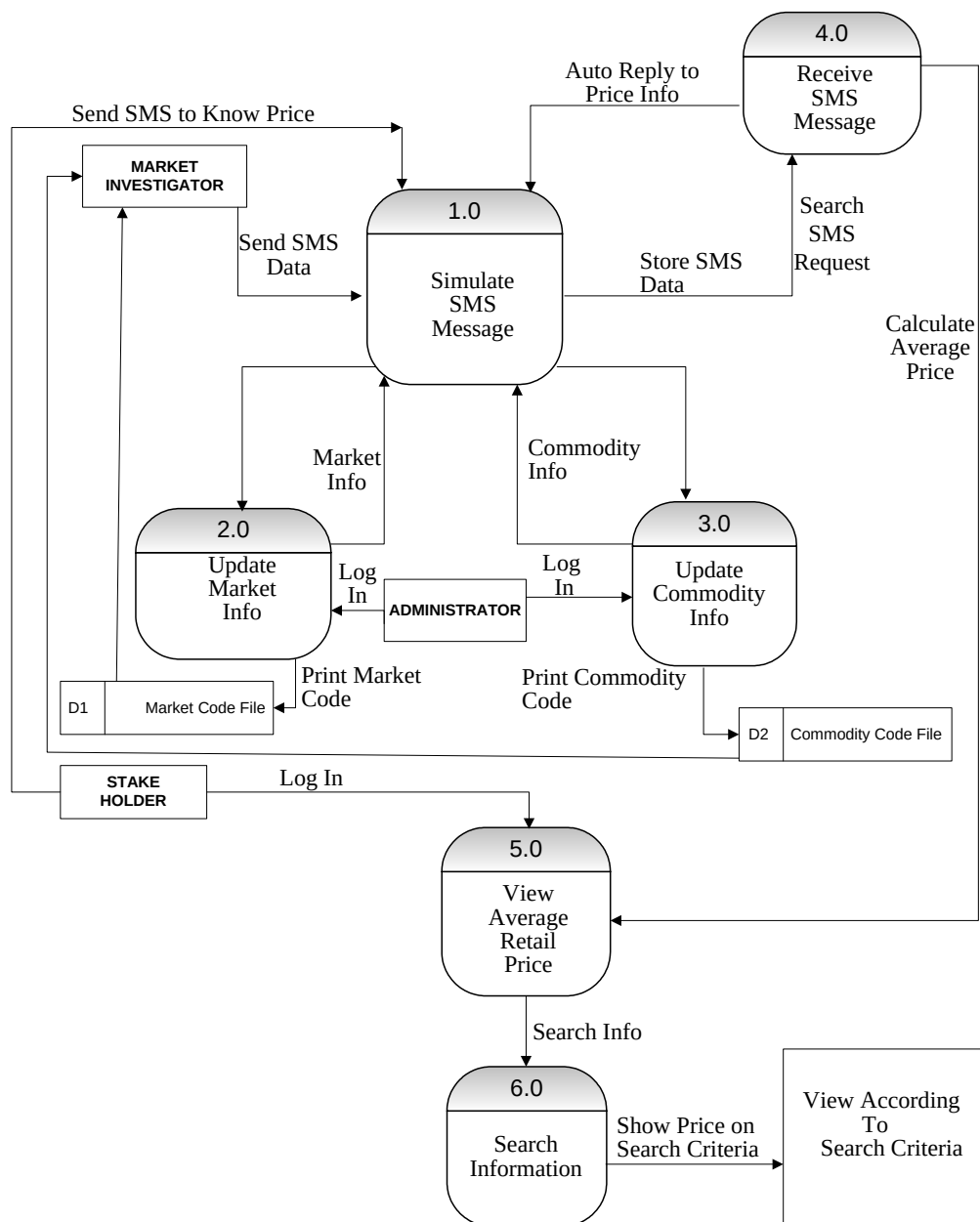


Fig 3.3: Level 0 Data Flow Diagram of proposed system

3.3.1.1 Thorough description of proposed data flow diagram

Level 0 Data Flow Diagram of Proposed System

1. At first DAM Administrator officer enter the system with login password. He/she is authorized to update the Commodity info code and Market (GIS) info code. Administrator officer will have to make Commodity Code file and Market (GIS) Code file to distribute Market Investigator Officer.
2. Market Investigator Officer is in simulate SMS Message to sending the agriculture commodity prices through SMS to Main Database system, what price they collect from market on marketing day.
3. After successfully receive the SMS of the agriculture commodity prices in Main database automatically parse the GIS Code, Commodity Code and prices. All that information is store in Receive SMS Message data warehouse.
4. Receive SMS message of agriculture commodity prices will calculate automatically to View Average retail prices of agriculture commodity prices all over the country.
5. To View Average retail prices of agriculture commodity prices all over the country, Stakeholder will input their login password in the main system. He/she can search the information on choosing searching criteria options what his/her needs.
6. Stakeholder can know the agriculture commodity prices of any particular market of a specific commodity through SMS. He/she will send a SMS for knowing price. After some moment on his/her mobile display screen will get auto reply of the Maximum and Minimum price of agriculture commodity with full description.
7. On the other side Department of Agriculture Marketing (DAM) will easily distribute more accurate and faster information of the agriculture commodity prices all over the country to authorized beneficiaries.

3.3.1.2 Level 1 Data Flow Diagram of market Information

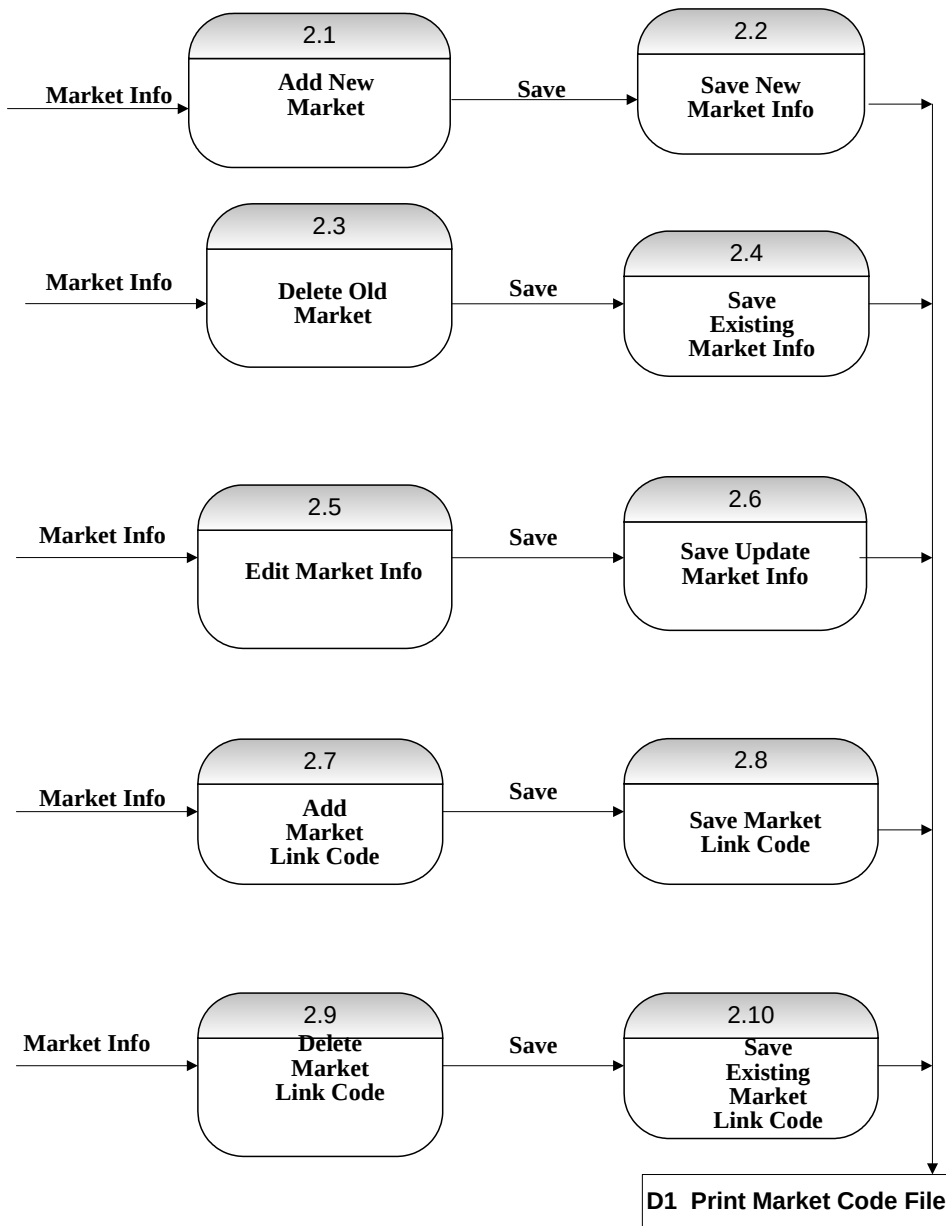


Fig 3.4: Level 1 Data Flow Diagram of market information

3.3.1.2.1 Level 1 DFD of marketing information

1. DAM Administrator Officer is authorized to update the Market (GIS) information. If any new Market is needed to be adding in the database, system admin will add that Market (GIS) Code with all description in database.
2. If any old Market is needed to be editing in the database, system admin will edit the specific Market (GIS) information without primary key of that record in database.
3. If any old Market is needed to be deleting from the database, system admin will delete that Market (GIS) from database.
4. If DAM Administrator Officer adds any new Market (GIS) information, will also have to add SMS link Market (GIS) Code in Market (GIS) Link database.
5. If DAM Administrator Officer deletes any old Market (GIS) information will also have to delete SMS link Market (GIS) Code from Market (GIS) Link database.
6. DAM Administrator Officer will make the Market (GIS) Code information file to distribute authorized District Marketing Officer/ District Marketing Investigator.

3.3.1.3 Level 1 data flow diagram of commodity information

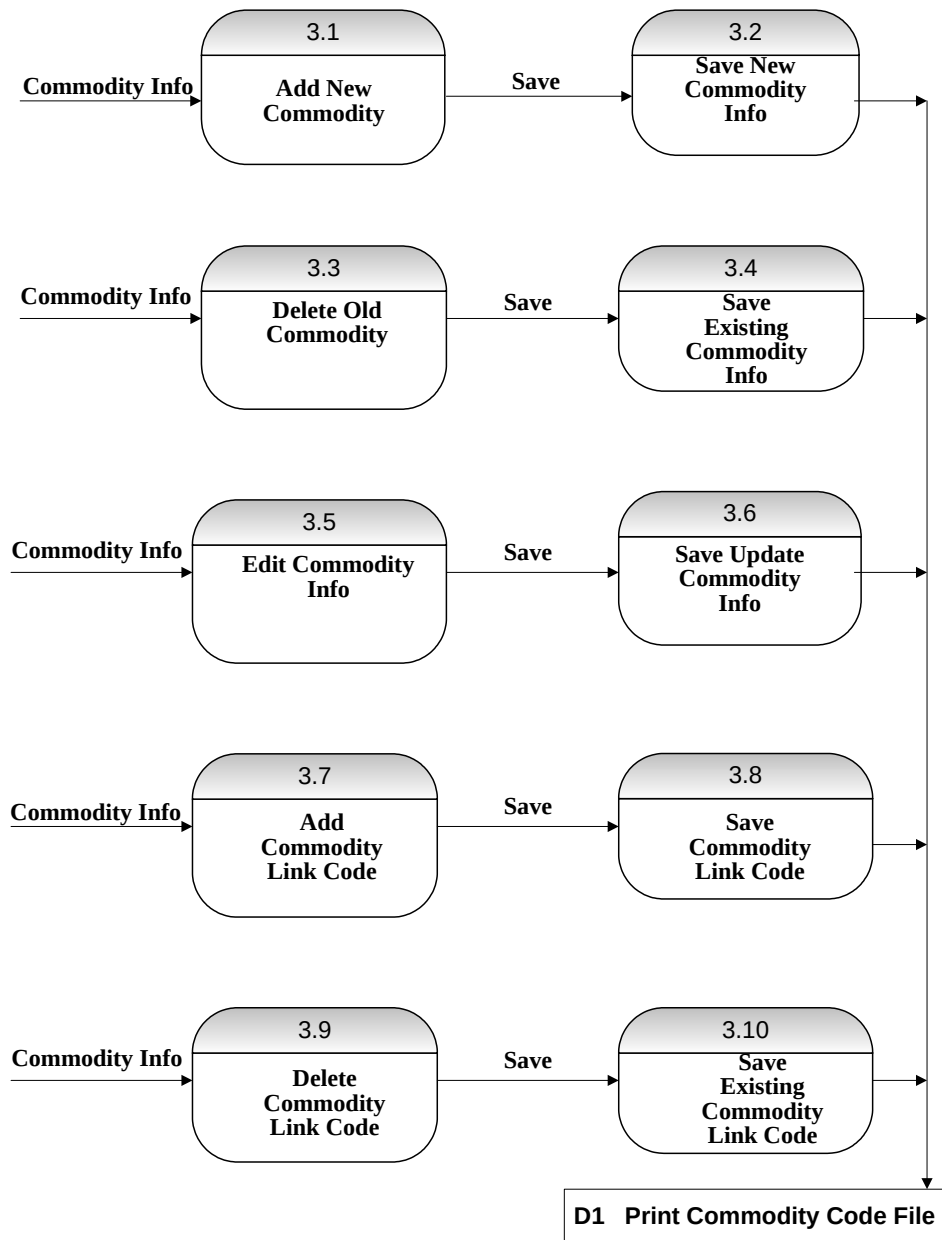


Fig 3.5: Level 1 Data Flow Diagram of commodity information

3.3.1.3.1 Level 1 DFD of commodity information

- DAM Administrator Officer is authorized to update the Commodity information. If any new commodities are needed to be adding in the database, system admin will add that commodity with all description in database.
- If any old commodities are needed to be editing in the database, system admin will edit the specific commodity information without primary key of that record in database.
- If any old commodities are needed to be deleting from the database, system admin will delete that commodity from database.
- If DAM Administrator Officer adds any new commodity information will also have to add SMS link Commodity Code in Commodity Link database.
- If DAM Administrator Officer deletes any old commodity information, will also have to delete SMS link Commodity Code from Commodity Link database.
- DAM Administrator Officer will make the Commodity Code information file to distribute authorized District Marketing Officer/ District Marketing Investigator.

3.3.1.4 Level 1 Simulate SMS Message

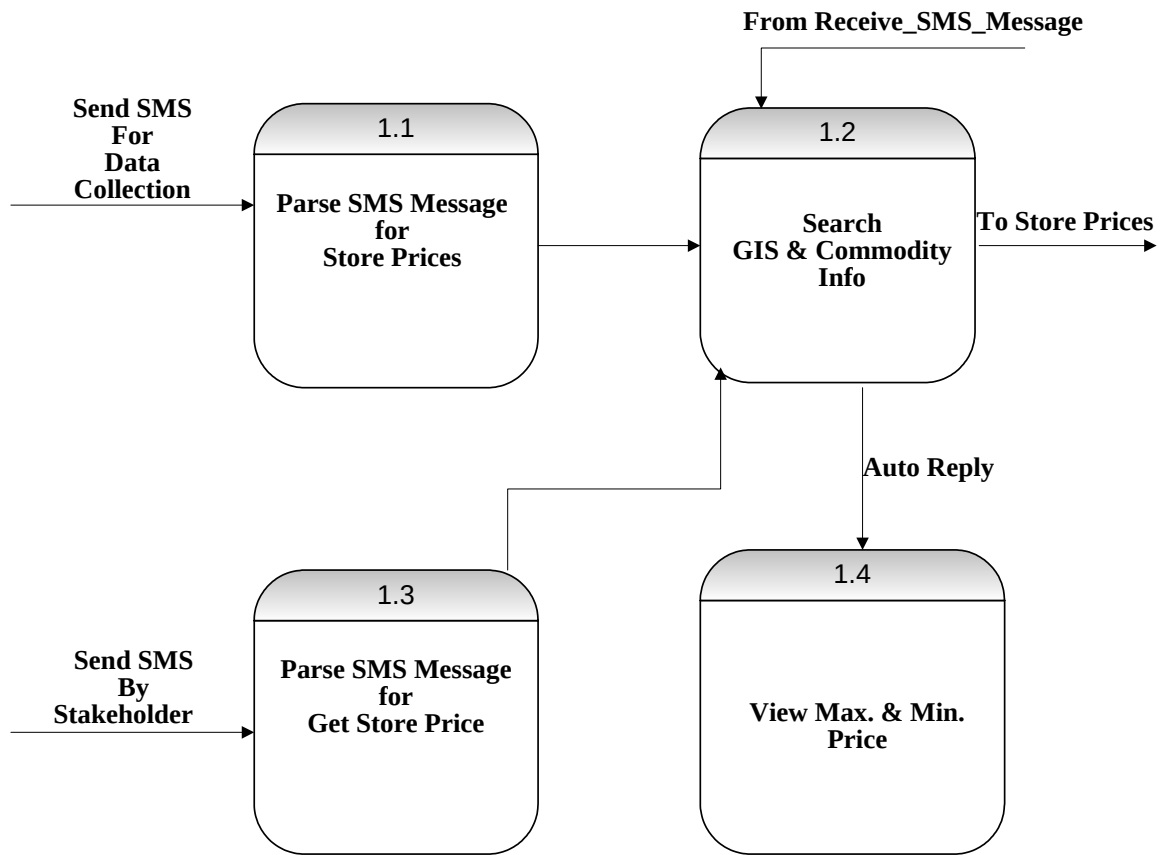


Fig 3.6: Level-1 Simulate SMS Message

3.3.1.4.1 Level 1 simulate sms message

1. Parse the SMS Message (GIS Code, Commodity Code, Maximum Prices and Minimum Prices) of Agriculture Commodity Prices, which send by District Marketing Officer/ District Marketing.
2. Search GIS Code and Commodity Code from Market (GIS) and Commodity Info database to store.
3. Parse the SMS Message (Price, GIS Code, Commodity Code and Date) to know the Agriculture Commodity Prices from the collection of data warehouse, which send by Stakeholder.
4. Search GIS Code, Commodity Code and Date from Receive SMS Message database to show on the mobile screen display of stakeholder.

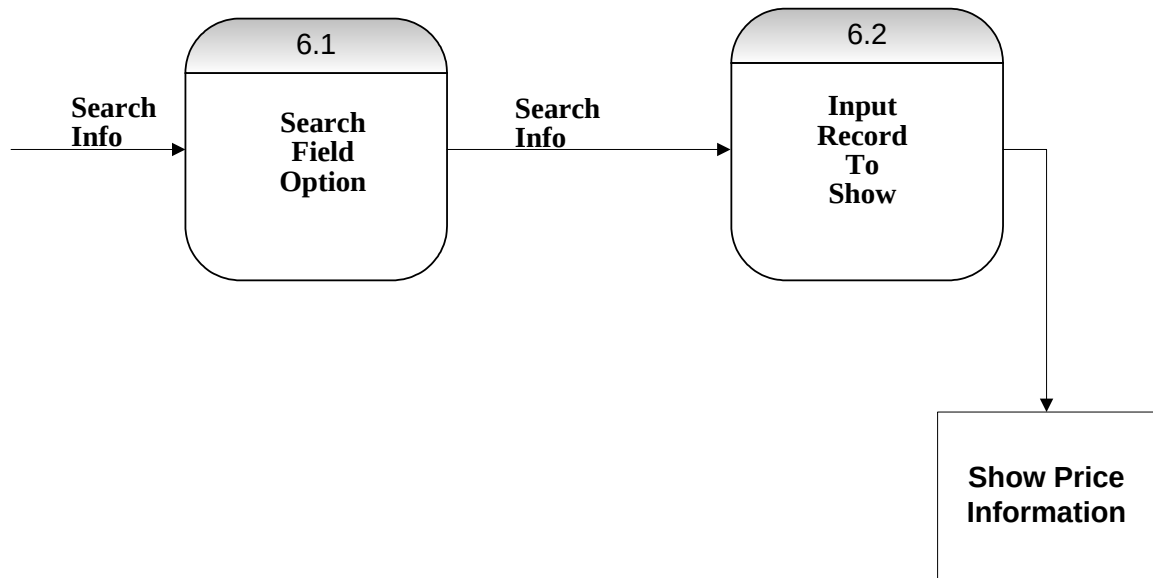


Fig 3.7: Level-1 search information

3.3.1.5.1 Level 1 search information

1. Any user to search any specific information, he/she will have to chose search criteria is Field like as Commodity Name, Specification, District/Town, Market Name, Marketing Day, Date.
2. After that in Record option type what information want to search.
3. It will automatically show the price information in details on the screen.

3.4 Prototype Design of the System

3.4.1 Form name: Main

User: DAM Admin/Marketing Investigator/Stakeholder

Purpose:

- DAM Admin is authorized to Add/Delete/Edit for New/Old/Update the commodity.
- Market Investigator get commodity file to send price data.
- Stakeholders know about database systems with commodity information.

Proposed Department of Agriculture Marketing (DAM) Information Collection System:							
Sample Data, Agriculture Commodity Prices							
Commodity Code:							
				Interface			
Commodity Id	Commodity Name	Specification	Unit	GIS Code			
01211110	Rice-aus	Fine	kg	Commodity Code			
01211210	Rice-aus	Boiled,medium	kg	Simulate SMS Message			
01211310	Rice-aus	Coarse	kg	Receive SMS Message			
01221110	Rice-aman	Fine	kg	View Average Retail Price			
01221210	Rice-aman	Boiled,medium	kg				
01221310	Rice-aman	Coarse	kg				
01231110	Rice-boro	Fine	kg				
01231210	Rice-boro	Boiled,medium	kg				
01231310	Rice-boro	Coarse	kg				
02211410	Flour-Atta	Superior quality	kg				
03211512	Pulses-Moong	Split,Kutchra	kg				
03221613	Pulses-Masur	Husked,whole	kg				
03231410	Pulses-Khesari	Superior quality	kg				
03241410	Pulses-Matar	Superior quality	kg				
03251410	Pulses-Gram	Superior quality	kg				
03261410	Pulse-Maskalai	Superior quality	kg				

Fig 3.8: Main Form

3.4.3 Form name: Simulate SMS Message

User: Marketing Investigator

Purpose:

- Market Investigator sends SMS of Agriculture Commodity Prices from his authorized market to DAM main Database server.

Simulate SMS Message:

Marketing Date	10/ 3 /2005	GIS CODE	03260156	Send SMS Message
Back To Interface		Go To Receive SMS Message		Go To View Average Retail Price

SI	Commodity Id	Commodity Name	Specification	Unit	Max Price	Min Price
01	01211110	Rice-aus	Fine	kg	25.5	24.5
02	01211210	Rice-aus	Boiled,medium	kg		
03	01211310	Rice-aus	Coarse	kg		
04	01221110	Rice-aman	Fine	kg		
05	01221210	Rice-aman	Boiled,medium	kg	20	18
06	01221310	Rice-aman	Coarse	kg		
07	01231110	Rice-boro	Fine	kg		
08	01231210	Rice-boro	Boiled,medium	kg		
09	01231310	Rice-boro	Coarse	kg		
10	02211410	Flour-Atta	Superior quality	kg	18	17
11	03211512	Pulses-Moong	Split,Kutchra	kg	48	46.5
12	03221613	Pulses-Masur	Husked,whole	kg	44	42
13	03231410	Pulses-Khesari	Superior quality	kg		
14	03241410	Pulses-Matar	Superior quality	kg		
15	03251410	Pulses-Gram	Superior quality	kg		
16	03261410	Pulse-Maskalai	Superior quality	kg		

Fig 3.10: Simulate SMS Message Form

3.4.5 Form name: View Average Retail Price

User: Stakeholder

Purpose:

- Stakeholders know about Average Retail Price of agriculture commodity
- Stakeholder can search information in different search criteria basis.

View Average Rental Price :

Searching Date	10/ 3 /2005	Back To Interface	Show Average Rental Price
----------------	-------------	-------------------	---------------------------

Commodity Name	Specification	District/Town	Market Name	Marketing Day	Unit	Average Price	Date
Rice-aus	Fine	Netrokona	Teligati	Friday	kg	25	3-Oct-05
Rice-aman	Boiled,medium	Netrokona	Teligati	Friday	kg	19	3-Oct-05
Flour-Atta	Superior quality	Netrokona	Teligati	Friday	kg	17.5	3-Oct-05
Pulses-Moong	Split,Kutch	Netrokona	Teligati	Friday	kg	47.25	3-Oct-05
Pulses-Masur	Husked,whole	Netrokona	Teligati	Friday	kg	43	3-Oct-05
Rice-aus	Boiled,medium	Manikganj	Gior	Monday	kg	21.5	3-Oct-05
Rice-boro	Fine	Manikganj	Gior	Monday	kg	13	3-Oct-05
Pulses-Khesari	Superior quality	Manikganj	Gior	Monday	kg	24.125	3-Oct-05
Pulse-Maskalai	Superior quality	Manikganj	Gior	Monday	kg	19.875	3-Oct-05
Rice-aman	Boiled,medium	Dhaka	Devinagar	Thursday	kg	19.5	3-Oct-05
Flour-Atta	Superior quality	Dhaka	Devinagar	Thursday	kg	16.75	3-Oct-05
Pulses-Moong	Split,Kutch	Tangail	Korotia	Thursday	kg	45.5	3-Oct-05
Pulses-Gram	Superior quality	Tangail	Korotia	Thursday	kg	35	3-Oct-05

Fig 3.12: View Average Retail Price

CHAPTER IV

4. DESIGN

4.1 Change Made from Prototype Testing

I did a prototype using MS-Excel that shows me a guide to implement this new system. Lots of improvement was made in my proposed system after prototyping. I made a template in the prototype to information collection system. But I use all the real data of existing agriculture commodity prices collection system of DAM. In my prototype there I input real GIS code and Commodity code for identification. In my prototype had all type of searching option for information search by any user. In my prototype there all information are real data with price information. In my proposed system there was SMS link GIS code and Commodity code. But in prototype SMS link GIS code and Commodity code are absent. When my prototype using MS-Excel database system works properly then I design my proposed system.

4.2 Hybrid Solution

Hybrid solution is the mixture of automated and manual process. We need hybrid solution because it is always possible to make a system fully automated. Again in the prospect of Bangladesh it is very hard to obtain the automated system for a process. The information collection system of agriculture commodity prices is needed to be sending price data to DAM very fast from growers level market. And also who needs those price data; can get information about agriculture commodity prices as quickly as possible. But current information collection system of agriculture commodity prices from growers level market and delivery those collected information to stakeholder is not possible in the context of Bangladesh.

By using the hybrid solution Department of agriculture Marketing (DAM) can easily collection the information of agriculture commodity prices from growers level market all over the country through Mobile phone SMS message Service. DAM also can provide information to stakeholder through Mobile phone SMS message Service. Stakeholder, who needs a huge amount of agriculture marketing information of different market and different commodities, come DAM to know information without any manual based search. Stakeholder login with password and view agriculture commodity prices information. My proposed system also supports to search any specific information very quickly what a user need. As my proposed information collection system and information delivery system is fast which save an amount huge time on both the perspective of DAM and Stakeholder. A lot of time means a lot of money save. Because of proposed information collection system is transaction on the information highway very quickly so its data are up to date and reliable. My proposed system provides all the information processed automatically. The only task is that the growers level Marketing Officer/Investigator of DAM to type in the mobile phone message box of the agriculture commodity prices information with special code format what he/she collect. All the codes with details information are providing to them

initially. The SMS Message code is very easy to understand to them. There will provide a short training to them how to send SMS Message code of agriculture commodity price information. Stakeholder also can send SMS Message to know price information of any market of any commodity at any date. After sending SMS Message by stakeholder, few times later they will get an auto reply of price information on their mobile phone screen what he/she wants to know.

4.3 Logical Data Modeling for Proposed System

4.3.1 Tables & Relations for information collection system

Commodity (Commodity_Code, Commodity_Name, Specification, Unit)

Commodity_Link (Commodity_Id, Commodity_Code)

Market (GIS_Code, District/Town, Market_Name, Marketing_Day)

Market_Link (GISCODE, GIS_Code)

Receive_SMS_Message (Commodity_Code, Commodity_Name, Specification, GIS_Code, District/Town, Market_Name, Marketing_Day, Unit, Maximum_Price, Minimum_Price, Date)

Simulate_SMS_Message (GISCODE, Commodity_Id, Maximum_Price, Minimum_Price)

View_Average_Retail_Price (Commodity_Name, Specification, District/Town, Market_Name, Marketing_Day, Unit, Average_Price, Date)

4.4 Entity Relationship Diagram

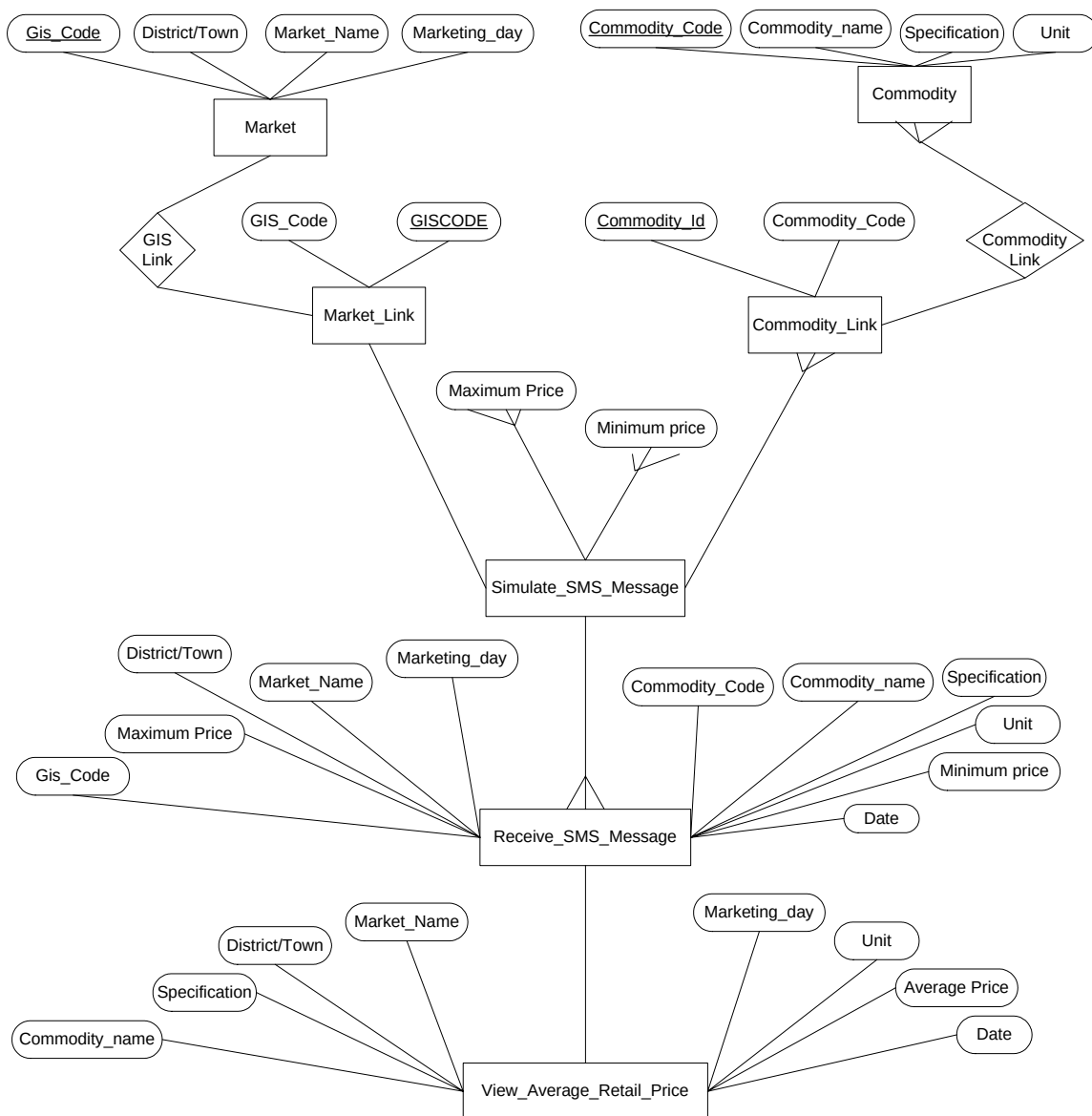


Fig 4.1: Entity Relationship Diagram

4.5 Form Design

Name: Login Form

User: Administrator/Stakeholder

Tasks:

- In this form Administrator/Stakeholder can login with the system by giving valid password.

System: Automated Information Collection of Agriculture Commodity Prices.

Environment: Windows

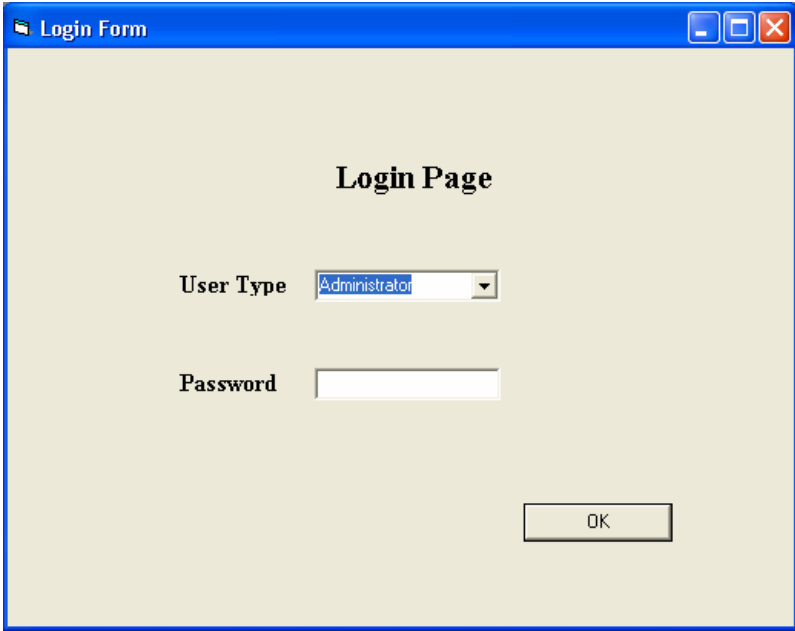
A screenshot of a Windows-style application window titled "Login Form". The window has a blue title bar with standard minimize, maximize, and close buttons. The main content area has a light beige background. At the top center, the text "Login Page" is displayed in a bold, black, serif font. Below this, there are two input fields. The first is labeled "User Type" and contains a dropdown menu with "Administrator" selected. The second is labeled "Password" and is an empty text box. At the bottom right of the form, there is an "OK" button.

Fig 4.2: Login Form

Name: Main Form

User: Administrator/Stakeholder

Tasks:

- Administrator/Stakeholder has option to go different type information about GIS Code, Commodity Code.

System: Automated Information Collection of Agriculture Commodity Prices.

Environment: Windows

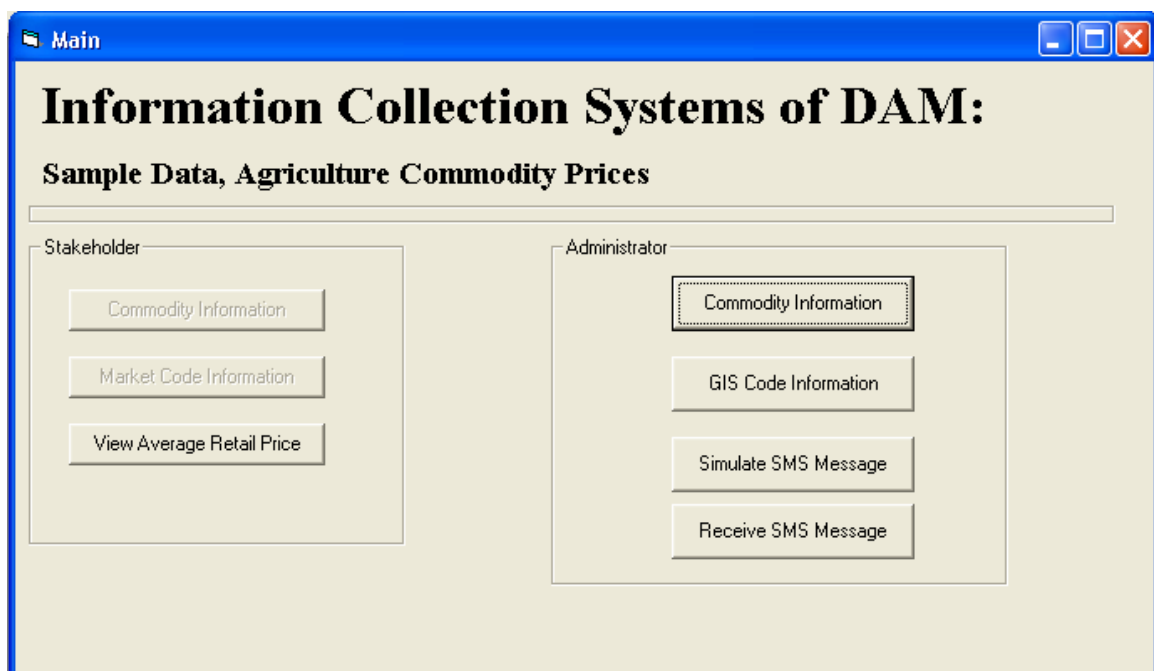


Fig 4.3: Main Form

Name: GIS Form

User: Administrator/Stakeholder

Tasks:

- Administrator Officer is authorized to Add/Delete/Edit for new/old/up-to-date market information in database.
- Administrator Officer also Add/Delete three bit GIS SMS Link Code to minimize the actual eight bit GIS code with number of English later $26*26*26=17576$ combination for unique GIS Code.
- Stakeholder only access Market Code information to know.

System: Automated Information Collection of Agriculture Commodity Prices.

Environment: Windows

The screenshot displays the GIS Form application window. The title bar reads "GIS". The main content area is titled "Market Information".

Market Properties Section:

- GIS_Code: 05274754
- District/Town: Dinaipur
- Market_Name: Hili-Hakimpur
- Marketing_Day: Thursday
- Buttons: Edit, Add

Market Properties Action Buttons:

- Add New Market
- Delete Old Market
- Edit Market Info
- Print Market Info

Info Line Table:

GIS_Code	District/Town	Market_Name	Marketing_Day
05109463	Bogra	Mokamtala	Monday
05271208	Dinaipur	Birganj	Sunday
05274754	Dinaipur	Hili-Hakimpur	Thursday
05323011	Gaibandha	Gobindaganj	Friday
05328885	Gaibandha	Saghatta	Tuesday
05381315	Joypurhat	Akkelpur	Wednesday

Buttons: Details Market Info, SMS Link Code

Market Link Properties Section:

- GISCODE: [Empty]
- GIS_Code: [Empty]
- Buttons: Add, Edit

Market Link Properties Action Buttons:

- Add New Market Code
- Delete Old Market Code
- Print Market Code

Info Line Table:

GISCODE	GIS_Code
ADM	05271208
ADN	05274754
ADD	05323011
ADP	05328885

Fig 4.4: GIS Form

Name: Commodity Form

User: Administrator/Stakeholder

Tasks:

- Administrator Officer is authorized to Add/Delete/Edit for new/old/up-to-date commodity information in database.
- Administrator Officer also Add/Delete three bit commodity SMS Link Code to minimize the actual eight bit commodity code with number of English later $26*26=676$ combination for unique commodity Code.
- Stakeholder only access commodity Code information to know.

System: Automated Information Collection of Agriculture Commodity Prices.

Environment: Windows

Commodity Information

Commodity_Code:
 Commodity_Name:
 Specification:
 Unit:

Commodity Properties

Info Line

Commodity_Code	Commodity_Name	Specification	Unit
0101010001	Rice-Aus	Fine quality	kg
0101020001	Rice-Aus	Medium quality	Kg
0101030001	Rice-Aus	Coarse quality	Kg
0102010001	Rice-Amon	Fine quality	Kg
0102020001	Rice-Amon	Medium quality	Kg
0102030001	Rice-Amon	Coarse quality	Kg

Commodity_Id:
 Commodity_Code:

Commodity_Link Properties

Info Line

Commodity_Id	Commodity_Code
AA	0101010001
AB	0101020001
AC	0101030001
AD	0102010001
AE	0102020001

Fig 4.5: Commodity Form

CHAPTER V

5. IMPLEMENTATION

5.1 System Implementation

Implementation is needed to convert the design, system development and previous specification into computer programs.

5.1.1 Computer programming

I maintain some steps in the coding phase. First I make flow charts and according to the flow charts I code and test it parallel. When it successfully completed I save it in actual coding phase and linked with the main program.

5.1.2 Actual coding

I use Microsoft Visual Basic 6.0 for front-end. For the database I use Microsoft SQL Server. The reason for using Microsoft Visual Basic 6.0 and Microsoft SQL Server are,

1. These are free of cost
2. These are the most popular tools for developing an automated system.
3. Acceptable security level
4. Easy to learn and implement.
5. Platform free

5.1.3 Brief description of modules implementation in the system

a) Market (GIS) Information System

I implement the function to make market (GIS) code information in the back end. I implement some another function as Administrator can add new GIS Code, delete old GIS Code, edit any information for up to date. Also SMS GIS Link code store in back end where can be add and delete the Code.

b) Commodity Information System

I implement the function to make commodity code information in the back end. I implement some another function as Administrator can add new commodity Code, delete old commodity Code, edit any information for up to date. Also SMS commodity Link code store in back end where can be add and delete the Code.

c) Simulate SMS Message System

I implement the sending SMS Message for agriculture commodity price information processing system. The SMS Message contains of GIS and Commodity Code with price information. The function is that parse the SMS Message for searching the exact information from the back end GIS and Commodity database. Also I implement as many as possible of different commodity prices information can be send in a one SMS.

I implement SMS Message that sends by stakeholder to know price information that store in the back end. Parse the SMS Message as price, GIS Code, Commodity Code, Date. All parsing code searches the price information from back end of Receive_SMS_Message. After few second later price information will display on the stakeholder mobile phone screen in Message inbox.

d) Receive SMS Message System

I implement the receive SMS Message System. After receiving SMS Message successfully which send by growers level Market Investigator all over the country, all the details information are store in the back end automatically. I also implement that when the SMS Message are save in back end with data and time.

e) View Average Retail Price System

I implement view average retail price System. To calculating the store commodity prices in the back end.

f) Search Price Information System

To implement this search system I have created two function of which search the prices in category wise searching function allow user to select a particular category like Commodity Name, Specification, Unit, Market Name, District/Town, Date with record field have to type category description as e.g. category Commodity Name of record is Rice-Aus, Fish-Hilsa, Fruits-Pineapple etc to view quickly.

5.2 Actual Testing

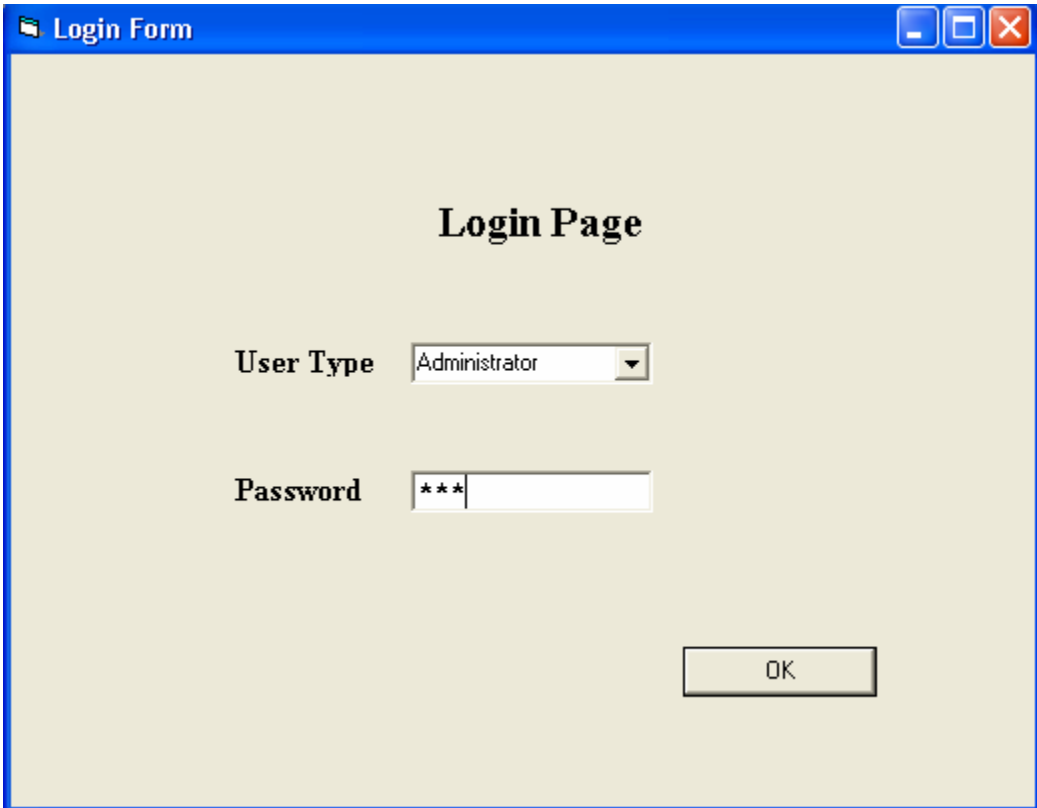
5.2.1 Testing preparation

While I have finished the coding I need to test my coding and system in real environment. For the testing section SMS Gateway is a unique Short Message Service (SMS) messaging tool. SMS Gateway connects a PC to a GSM handset (Mobile Terminal), via a PCMCIA “Cellular Data Card”, specialized

data cable connected to a COM (serial) port, and also via infrared or Bluetooth wireless connections. Through this connection all message currently stored in the mobile terminal can be retrieved, new messages sent, and new incoming messages to be sent straight through to the PC by SMS Gateway using Visual Basic application. A “Short Message” may contain up to 7 bit 160 characters or 140 octets of binary data. In my software I use the SMS gateway software of trial version from the Internet. The web site address of SMS gateway Software Company is <http://www.winsms.com>. I have tested 1000-1100 commodity prices information collection in the proposed system.

5.2.2 Actual test data

In the actual testing phase, I test the system with real data and I follow the information collection system in a sequential process.



The screenshot shows a Windows-style application window titled "Login Form". The window's title bar is blue and includes standard minimize, maximize, and close buttons. The main content area has a light beige background. Centered at the top of the content area is the text "Login Page". Below this, there are two input fields. The first is labeled "User Type" and is a dropdown menu currently displaying "Administrator". The second is labeled "Password" and is a text box containing three asterisks ("***"). At the bottom right of the window is a rectangular button labeled "OK".

Fig 5.1: Login Form

After login user will enter in the main page to connection the mobile phone with main database.

Simulate_SMS_Message

Info_Line

GISCODE	Commodity Id	Maximum Price	Minimum Price
---------	--------------	---------------	---------------

Clear Grid

Connect To SMS Server

Connected !

Disconnect

Fig 5.2: Simulate SMS Message for mobile connection Form

When mobile phone connected successfully then Market investigator collected current agriculture commodity prices from growers level market e.g. Madhupur, district of Tangail send some commodity prices information.



Fig 5.3: Send SMS message of price information by market investigator

Receive SMS Message

Info Line

Commodity_Code	Commodity_Name	Specification	GIS_Code	District/Town	Market_Name
0101010001	Rice-Aus	Fine quality	04474520	Khulna	Khalishpur
0406110001	Fish-Boal	Medium size	05779081	Panchagarh	Tentulia
0701110001	Vegetable-Potato	Medium size	05779081	Panchagarh	Tentulia
0707120501	Vegetable-Chalkumra	Green,one seer size	05779081	Panchagarh	Tentulia
0709040001	Vegetable-Ladys finger	Superior quality	05779081	Panchagarh	Tentulia
0501040001	Meat-Beef	Superior quality	05109463	Bogra	Mokamtala
0701110001	Vegetable-Potato	Medium size	05109463	Bogra	Mokamtala
0705110001	Vegetable-Mitha Kumra	Medium size	05109463	Bogra	Mokamtala
0801140602	Fruits-Banana	Sabri,Medium size	05109463	Bogra	Mokamtala
0501040001	Meat-Beef	Superior quality	02156179	Chittagonj	Patiya
0701110001	Vegetable-Potato	Medium size	02156179	Chittagonj	Patiya
0803110003	Fruits-Pineapple	Medium size	03935776	Tangail	Madhupur
0714070901	Vegetable-Tomato	Fresh,Superior quality	03935776	Tangail	Madhupur
0711040001	Vegetable-Beans	Superior quality	03935776	Tangail	Madhupur

Fig 5.4: Receive SMS message Form

Receive SMS Message

Info Line

Market_Name	Marketing_Day	Unit	Maximum_Price	Minimum_Price	Date
Khalishpur	Friday	kg	25	23.5	Dec 18 2005 5:23AM
Tentulia	Saturday	Kg	75	70	Dec 18 2005 11:14PM
Tentulia	Saturday	Kg	10	8	Dec 18 2005 11:14PM
Tentulia	Saturday	Kg	20	18	Dec 18 2005 11:14PM
Tentulia	Saturday	Kg	15.5	13.75	Dec 18 2005 11:14PM
Mokamtala	Monday	Kg	110	100	Dec 28 2005 5:38AM
Mokamtala	Monday	Kg	14	12	Dec 28 2005 5:38AM
Mokamtala	Monday	Kg	22	20	Dec 28 2005 5:38AM
Mokamtala	Monday	Halil(4)	8	7	Dec 28 2005 5:38AM
Patiya	Tuesday	Kg	110	100	Dec 28 2005 6:04AM
Patiya	Tuesday	Kg	14	12	Dec 28 2005 6:04AM
Madhupur	Wednesday	Each	6	4.5	Dec 29 2005 2:26AM
Madhupur	Wednesday	Kg	16	14	Dec 29 2005 2:26AM
Madhupur	Wednesday	Kg	20	18	Dec 29 2005 2:26AM

Fig 5.5: continue Receive SMS message Form

The sending agriculture commodity prices SMS message automatically store in the Receive SMS Message database which show all the details information.

After successfully receive SMS message of price data then the system will calculate the average retail prices automatically. And the View Average Retail Price there is search criteria to search for a specific data what a person need. It will show very quickly.

View Average Retail Price

Search_Properties

Field: Date

Record: 29 Dec 2005 Search

Info Line

District/Town	Market_Name	Marketing_Day	Unit	Average_Price	Date
Tangail	Madhupur	Wednesday	Each	5.25	Dec 29 2005 2:26AM
Tangail	Madhupur	Wednesday	Kg	15	Dec 29 2005 2:26AM
Tangail	Madhupur	Wednesday	Kg	19	Dec 29 2005 2:26AM

Show All

Fig 5.6: View Average Retail Price with search criteria Form

Another option is any stakeholder can know current price information through his mobile phone SMS service. He/she sends a SMS with GIS Code, Commodity Code, and Date.



Fig 5.7: Send Message by Stakeholder

After receive the SMS by stakeholder to the system, few second later an auto reply of details price information is showing on the mobile phone message screen.



Fig 5.8 Auto reply of price information

5.3 Analysis of Testing

From different market place I have done the tested with some Market investigator and stakeholder for Agriculture Commodity Price information collection and distribution service. The result, at this level of testing seemed appropriate. The use and testing of the prototype helped to identify many drawbacks in the original design. It also helped me to understand the entire workflow and implications in the software design.

CHAPTER VI

6. LIMITATIONS AND RECOMMENDATION

The development of information collection system of agriculture commodity prices all over the country is a new concept. I was not able to test my system in the Department of Agriculture Marketing (DAM). Some of the Market investigator/stakeholder may accept the system and some are needs time to accept the system because Market investigators need training for sending SMS message system. Market investigator need to be trained and motivated for sending reliable data. A general stakeholder like farmers, small businessman, wholesalers, retailers, and consumers etc who have lack of education is a problem to type SMS to send and to read the price information what they get. In real system the security of the collected information needs to consider.

The recommendation is that the system should also provide a web-based service. Another thing is that such a different type of information can be collected in this mainframe like Agriculture commodity production information, fertilizers distribution, crops seed distribution information etc.

CHAPTER VII

7. CONCLUSIONS

Proposed Information Collection System: Sample data, Agriculture Commodity Prices can be the alternative to the existing manual information collection system. The system is develop using free and reliable software available in the internet is very easy to setup and it can reduce some of burden of the existing information collection system of agriculture commodity prices and thus reduce overhead costs. Such reductions in costs were however not calculated. The system may be very useful for the farmers in the rural areas. Farmers must be able to seek out and compare the information available for different outlets if they are to sell to best advantage. Proposed System attempts to ensure the Information Collection of Agriculture Commodity Prices will be very fast, reliable, up to date, and less expensive from all over the Bangladesh.

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