NEW JOB AND INTERVIEW ALERT THROUGH SHORT MESSAGE SERVICE (SMS)

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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 *'new job alert and interview message alert through short message service (SMS)'"*. This work was performed under the supervision of Dr. Sayeed Salam.

We hereby declare that the work submitted in this thesis is our own and based on the results found by our self. This thesis, neither in whole nor in part, has been previously submitted for any degree.

Signature of   Signature of

Supervisor   Author

Acknowledgement

I would like to express my sincerest appreciation and profound granitite to my supervisor Dr. Sayeed Salam, Chair Person, Department of Computer Science and Engineering, BRAC University, for his supervision, encourage guidance. In the course of the project development he discussed problems. He helped to overcome hurdles. His keen interest and valuable suggestions and advice were the source of all inspiration to us. I would like to thank BRAC University for helping with all the required resource for completion of the thesis work.

Abstract

Searching Job online is very popular to our Bangladesh. There are many job sites in Bangladesh where different types of jobs are available in online. Seeker become a member by filling up the resume and browses their jobs that completely suit them. They can get their suitable job from here. If he wishes to apply he/she can easily apply for the post. Company will return the result through the personal mail address that given in the resume.

Our country's job sites are unlike other developed countries. Jobs are searched using mobile and also can apply through mobile. So our job sites are behind on this new technology. So we are here introduced a new features SMS facility which gives alert in different times. The recent growth and infrastructure of mobile phone allows making this feature popular. Seekers first log in the site and when new job is available new job alert SMS will be sent. So he/she does not need to surf the net again. He/she can easily get all updates information about jobs using cell phones. Seekers can get details apply instantly from the cell phones using SMS facility.

This system helps people to know about jobs market from reliable media mobile network... he/ she can easily get the interview alert system from mobile by receiving SMS. Using SMS facility people can easily find   out their desire job easily and this SMS make this job site very effective and time consuming.

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Chapter 1

Now a days searching Job is not very difficult and not complicated task. It was very difficult to find jobs and sources of finding jobs were not very reliable media. People has to check newspaper everyday and always need to keep eyes on Now the blessings of the technology Internet which provides many job sites from where seeker can easily find out jobs. It's now the era of Job search online. We can easily find part time or full time jobs by visiting different job sites of different countries. In Bangladesh we have some sites from where we can easily find our suitable jobs. Many developed countries like India, Australia, Malaysia, UK, and USA and so many have developed their sites for mobile users.

www.naukrionmobile.com where you can now search for the jobs that you want anytime, anywhere through your Mobile! Just SMS NAUKRI to 676761. Once you send this message, you will receive: **Welcome to Naukri Job Search.**

www.jobsmobile.com which is basically Malaysian web sites where a person can easily find jobs, get Short Message Service (SMS) alert for new jobs, get confirmation SMS from the sites. Hence SMS search support free text search. User no longer needs to remember the area code or rules when using our service. Our country has many job sites but like other developed countries these sites are not introducing SMS facility.

Chapter 2

Current System

There are many job sites exists in Bangladesh like we have **www.bdjobs.com**, **www.jobsbd.com**, **www.jobsa1.com**, **www.anyworkanywhere.com**, **www.4icj.com**.

Among all those job sites **www.bdjobs.com** is pioneer job sites in Bangladesh. **www.bdjobs.com** is the largest job sites in Bangladesh. It has over 3 million job seekers and more than 20,000 corporate customers. In this site we can find job by different categories by following search job by categories Text in below there are several categories included from where we can pick our desired category and, find the suitable one and post the resume. Two types of people use this web site one who is looking for a job and second the company, industry, Multinational Company who will post jobs that are available in their company.

Steps of applying for a job:

- Choose jobs that are available in the sites.
- Create an user account for further assistance
- Creating an account means post a resume on their providing formats. This is known as resume.
- Apply online by posting resume.

A company comes and post new jobs with sufficient information like job requirements, job responsibilities, and application deadline, applying details all these are mentioned. After a certain period company check its own account and sort out all resumes that have been applied for posts and finally select some resumes and send message to their account.
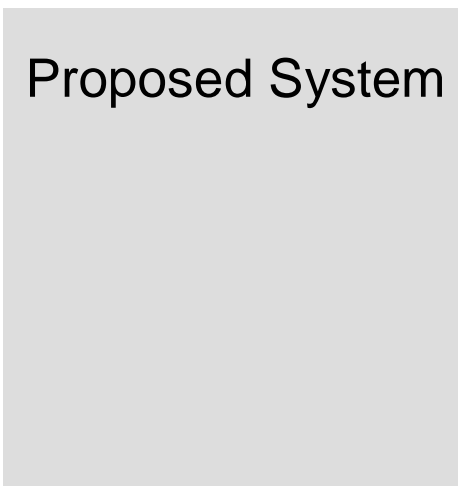
Job seekers log into account by giving their username and password. Then they check whether any new messages come or not. The message includes the interview confirmation, location of the interview. So company and job seekers get helps visiting these job sites in Bangladesh. **www.bdjobs.com** only

allowed for all Bangladeshi available jobs. Most recent and well post jobs are included in the home page which is known as HOTJOBS from where click into link we can easily move to their company sites and find all detail information and apply for that if suitable so.

Though **www.bdjobs.com** is best job sites in web portal but they have lacking in job using mobile like other developing countries in the world. So our proposal solves this lacking. Now in the existing system we can easily find jobs, post new jobs, and find the confirmation all are done in sites. But here we are developed some new features that will help to get all these features from mobile sending SMS. Our goal is to develop a system, which will be able to send SMS from site to registered mobile users.

Chapter 3

Proposed System

Our main target is giving SMS facilities to job seekers so that no one misses any opportunities. Now mobile is a very available handy device to everyone. We will introduce new features from where applicants easily get the updated information through cell phones. Our system now developed for all Information Technology related jobs. The top most seven countries IT jobs are available here in our **www.jobhunter.com**.

3.1　Initial Setup of the System:

Applicant's registration: An applicant must be a valid member and for that he/she has to fill up resume forms.

Company registration: Company need to be registered to post new jobs and get all the applicants who applied for a particular job.

SMS server: Our SMS server must be on for 24 hours. This server always searches for any updates.

1. Job posting process:

Employer authentication

An employee must be registered before posting for new jobs. For that the company has to use credit cards to use our web sites.

New job alert

This is the first alert in our system. Our system will begin with this alert. When company posts a new job it will be store in our databases. SMS will be send to the users who is qualified for that post particularly.

SMS criteria

The company requirements must match with any of seekers resume. Our database will match and find out those cell no and send SMS one by one.

SMS delivery notification

If the SMS is successfully send to seekers success option will be shown in our running server.

Invalid notification

If the SMS is not send it will show that invalid recipients no in the server.

SMS recording

Successful users will be recorded in our database server accordingly.

Show details SMS

When the user get the SMS about the new job he/ she will would like to see the details of that job. For that he needs s to type "<Details> <Job Id>" and sends to the GSM device, which is connected with our server.

Return details

The server will return to that user with the details information about that particular job.

Apply details

Now in our system applicants can easily apply for that post from cell phones. Just type "Apply <User Name> <Job ID>". After typing this it will be updated in the databases and in the web site number of applicants will be showed for that post.

Interview alert

Company checks resumes and would like to call or the interview. The interview alert will be send to the applicants.

Call for joining

   After giving the interview the company wants to recruit him and call for the second interview than company will type a message and that message will be send to that applicants.

2. Result Generation:

   After applying for any post the applicants will get the updates news. When the applicant applies the information will be stored in the databases and retrieve from that database when it needs in further.

Chapter 4

About SMS

Definition

Short message service (SMS) is a globally accepted wireless service that enables the transmission of alphanumeric messages between mobile subscribers and external systems such as electronic mail, paging, and voice-mail systems.

INTRODUCTION

SMS appeared on the wireless scene in 1991 in Europe. The European standard for digital wireless, now known as the Global System for Mobile Communications (GSM), included short messaging services from the outset.

In North America, SMS was made available initially on digital wireless networks built by early pioneers such as BellSouth Mobility, PrimeCo, and Nextel, among others. These digital wireless networks are based on GSM, code division multiple access (CDMA), and time division multiple access (TDMA) standards.

Network consolidation from mergers and acquisitions has resulted in large wireless networks having nationwide or international coverage and sometimes supporting more than one wireless technology. This new class of service providers demands network-grade products that can easily provide a uniform solution, enable ease of operation and administration, and accommodate existing subscriber capacity, message throughput, future growth, and services reliably. Short messaging service center (SMSC) solutions based on an intelligent network (IN) approach are well suited to satisfy these requirements, while adding all the benefits of IN implementations

Figure 1 represents the basic network architecture for an IS–41 SMSC deployment handling multiple input sources, including a voice-mail system (VMS), Web-based messaging, e-mail integration, and other external short message entities (ESMEs). Communication with the wireless network elements such as the home location register (HLR) and mobile switching center (MSC) is achieved through the signal transfer point (STP).

SMS provides a mechanism for transmitting short messages to and from wireless devices. The service makes use of an SMSC, which acts as a store-and-forward system for short messages. The wireless network provides the mechanisms required to find the destination station(s) and transports short messages between the SMSCs and wireless stations. In contrast to other existing text-message transmission services such as alphanumeric paging, the service elements are designed to provide guaranteed delivery of text messages to the destination. Additionally, SMS supports several input mechanisms that allow interconnection with different message sources and destinations.

A distinguishing characteristic of the service is that an active mobile handset is able to receive or submit a short message at any time, independent of whether a voice or data call is in progress (in some implementations, this may depend on the MSC or SMSC capabilities). SMS also guarantees delivery of the short message by the network. Temporary failures due to unavailable receiving stations are identified, and the short message is stored in the SMSC until the destination device becomes available.

SMS is characterized by out-of-band packet delivery and low-bandwidth message transfer, which results in a highly efficient means for transmitting short bursts of data. Initial applications of SMS focused on eliminating alphanumeric pagers by permitting two-way general-purpose messaging and notification services, primarily for voice mail. As technology and networks evolved, a variety of services have been introduced, including e-mail, fax, and paging integration, interactive banking, information services such as stock quotes, and integration with Internet-based applications. Wireless data applications include downloading of subscriber identity module (SIM) cards for activation, debit, profile-editing purposes, wireless points of sale (POSs), and other field-service applications such as automatic meter reading, remote sensing, and location-based services. Additionally, integration with the Internet spurred the development of Web-based

messaging and other interactive applications such as instant messaging, gaming, and chatting.
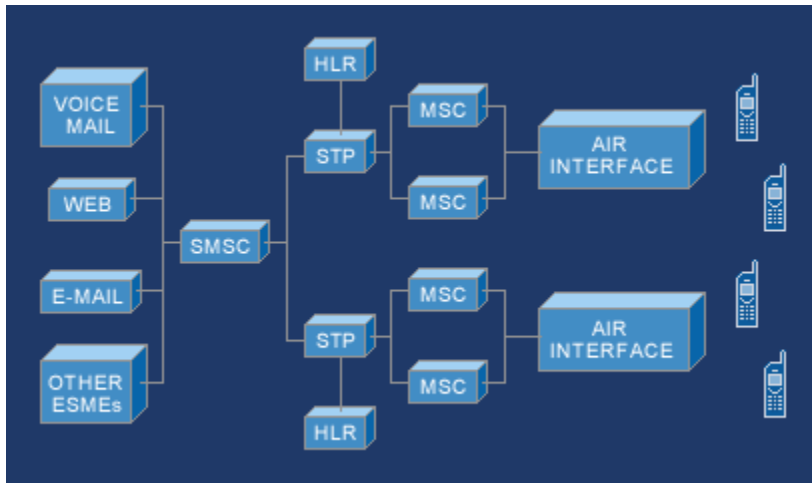
Picture 1. Basic Network Architecture for an SMS Deployment (IS-41)

Benefits of SMS

In today's competitive world, differentiation is a significant factor in the success of the service provider. Once the basic services, such as voice telephony, are deployed, SMS provides a powerful vehicle for service differentiation. If the market allows for it, SMS can also represent an additional source of revenue for the service provider.

The benefits of SMS to subscribers center around convenience, flexibility, and seamless integration of messaging services and data access. From this perspective, the primary benefit is the ability to use the handset as an extension of the computer. SMS also eliminates the need for separate devices for messaging because services can be integrated into a single wireless device—the mobile terminal. These benefits normally depend on the applications that the service provider offers. At a minimum, SMS benefits include the following:

- Delivery of notifications and alert

- Guaranteed message deliver

- Reliable, low-cost communication mechanism for concise information

- Ability to screen messages and return calls in a selective way

- Increased subscriber productivity

More sophisticated functionality provides the following enhanced subscriber benefits:

- Delivery of messages to multiple subscribers at a time

- Ability to receive diverse information

- E-mail generation

- Creation of user groups

- Integration with other data and Internet-based applications

The benefits of SMS to the service provider are as follows

- Ability to increment average revenue per user (due to increased number of calls on wireless and wire line networks by leveraging the notification capabilities of SMS)

- An alternative to alphanumeric paging services, which may replace or complement an existing paging offer

- Ability to enable wireless data access for corporate users

- New revenue streams resulting from addition of value-added services such as e-mail, voice mail, fax, and Web-based application integration, reminder service, stock and currency quotes, and airline schedules

- Provision of key administrative services such as advice of charge, over-the- air downloading, and over-the-air service provisioning

- Protection of important network resources (such as voice channels), due to SMS' sparing use of the control and traffic channels

- Notification mechanisms for newer services such as those utilizing wireless application protocol (WAP)

All of these benefits are attainable quickly, with modest incremental cost and short payback periods, which make SMS an attractive investment for service providers.

Network Elements & Architecture

The basic network structure of SMS in an IS-41 network is depicted in *Picture 1*.

External Short Messaging Entities

An ESME is a device that may receive or send short messages. The short message entity (SME) may be located in the fixed network, a mobile device, or another service center.

VMS – The VMS is responsible for receiving, storing, and playing voice messages intended for a subscriber that was busy or not available to take a voice call. It is also responsible for sending voice-mail notifications for those subscribers to the SMSC.

Web – The growth of the Internet has also affected the world of SMS. Therefore, it is almost mandatory to support interconnections to the World Wide Web for the submission of messages and notifications. The increasing number of Internet users has a positive impact on the SMS traffic increment experienced in the last few years.

E-Mail – Probably the most demanded application of SMS is the ability to deliver e-mail notifications and to support two-way e-mail, using an SMS-compliant terminal. The SMSC must support interconnection to e-mail servers acting as message input/output mechanisms.

Others – There are several other mechanisms to submit short messages to the SMSC that include, but are not limited to, paging networks, specialized software for PC-based messaging and operator bureaus.

SMSC

SMSC is a combination of hardware and software responsible for the relaying and storing and forwarding of a short message between an SME and mobile device. The SMSC must have high reliability, subscriber capacity, and message throughput. In addition, the system should be easily scalable to accommodate growing demand for SMS in the network. Normally, an IN-based solution will allow for a lower entry cost compared pointing solutions because it can support other applications on a single hardware platform and share resources, thereby spreading the deployment cost over several services and applications. Another factor to be considered is the ease of operation and maintenance of the application, as well as the flexibility to activate new services and upgrade to new software releases.

Signal Transfer Point

The STP is a network element normally available on IN deployments that allows IS-41 interconnections over signaling system 7 (SS7) links with multiple network elements.

HLR

The HLR is a database used for permanent storage and management of subscriptions and service profiles. Upon interrogation by the SMSC, the HLR provides the routing information for the indicated subscriber. Also, if the destination station was not available when the message delivery was attempted, the HLR informs the SMSC that the station is now recognized by the mobile network to be accessible, and thus the message can be delivered.

Visitor Location Register (VLR)

The visitor location register is a database that contains temporary information about subscribers homed in one HLR who are roaming into another HLR. This information is needed by the MSC to service visiting subscribers.

MSC

The MSC performs the switching functions of the system and controls calls to and from other telephone and data systems. The MSC will deliver the short message to the specific mobile subscriber through the proper base station.

Air Interface

The air interface is defined in each one of the different wireless technologies (GSM, TDMA, and CDMA). These standards specify how the voice or data signals are transferred from the MSC to the handset and back, as well as the utilization of transmission frequencies, considering the available bandwidth and the system's capacity constraints.

The Base Station System

All functions related to the transmission of electromagnetic radio signals between the MSC and the mobile devices are performed in the base station (BS). The BS consists of base station controllers (BSCs) and the base transceiver stations (BTSs), also known as cell sites or simply "cells." The BSC may control one or more BTSs and is in charge of the proper resource assignment when a subscriber moves from one sector of one BTS to another, regardless of whether the next sector lies within the same BTS or in a different one.

The Mobile Device

The mobile device is the wireless terminal capable of receiving and originating short messages. Commonly, these devices have been digital cellular phones, but more recently the application of SMS has been extended to other terminals such as POS, handheld computers, and personal digital assistants (PDAs). The wireless network-signaling infrastructure is based on SS7. SMS makes use of the mobile application part (MAP), which defines the methods and mechanisms of communication in wireless networks and employs the services of the SS7 transactional capabilities application part (TCAP). An SMS service layer makes

use of the MAP signaling capabilities and enables the transfer of short messages between the peer entities.

The capabilities of the terminal vary depending on the wireless technology supported by the terminal. Some functionality, although defined in the SMS specification for a given wireless technology, may not be fully supported in the terminal, which may represent a limitation in the services that the carrier can provide. This trend, however, is disappearing as service providers' merger and acquisition activity demands uniform functionality across all the constituents of the parent companies. Also, some manufacturers may include additional functionality, not considered in the specification, attempting to offer a more attractive product for service providers as well as end users. This will be the case more often as service provider continue to incorporate SMS into their revenue-generating and customer-loyalty strategies.

Subscriber Services

SMS comprises two basic point-to-point services:
- Mobile-originated short message (MO-SM)
- Mobile-terminated short message (MT-SM)

Mobile-originated (MO) short messages are transported from the MO-capable handset to the SMSC and can be destined to other mobile subscribers or for subscribers on fixed networks such as paging networks or Internet protocol (IP) networks (including the Internet and private e-mail networks). Mobile-terminated (MT) short messages are transported from the SMSC to the handset and can be submitted to the SMSC by other mobile subscribers via MO-SM or by other sources such as voice-mail systems, paging networks, or operators.

Mobile-originated (MO) short messages are transported from the MO-capable handset to the SMSC and can be destined to other mobile subscribers or for subscribers on fixed networks such as paging networks or Internet protocol (IP) networks (including the Internet and private e-mail networks). Mobile-terminated

(MT) short messages are transported from the SMSC to the handset and can be submitted to the SMSC by other mobile subscribers via MO-SM or by other sources such as voice-mail systems, paging networks, or operators.

For MT-SM, a report is always returned to the SMSC either confirming the short message delivery to the handset or informing the SMSC of the short message delivery failure and identifying the reason for failure (cause code). Similarly, for MO-SM, a report is always returned to the handset either confirming the short message delivery to the SMSC or informing of delivery failure and identifying the reason.

Depending on the access method and the encoding of the bearer data, the point-to-point short messaging service conveys up to 190 characters to an SME in GSM networks and from 120 to 205 in IS-41 networks.

In GSM networks, the type of messaging service is identified by the protocol identifier information element, which identifies the higher-level protocol or inter-working being used. Examples are telex, group 3 telefax, X.400 messaging, European Radio Messaging System (ERMES), and voice telephone.

In IS-41 networks, the service type is distinguished by use of the teleservice identifier. Basic teleservices include the following:
- Cellular messaging teleservice (CMT)
- Cellular paging teleservice (CPT)
- Voice-mail notification teleservice (VMN)

CMT differs from the CPT due to the inclusion of a reply mechanism that enables a user or network acknowledgment to be selected on a per-message basis. The user acknowledgment includes a response code that paves the way for powerful interactive services between SMSCs.

Many service applications can be implemented by combining these service elements. Aside from the obvious notification services, SMS can be used in one-way or interactive services providing wireless access to any type of information anywhere. By leveraging new emerging technologies that combine browsers, servers, and new markup languages designed for mobile terminals, SMS can enable wireless devices to securely access and send information from the Internet or intranets quickly and cost-efficiently. One of these technologies where SMS can provide a cooperative, rather than a competitive, approach is the WAP, which allows transport of data for mobile wireless users.

A generic network infrastructure for realizing the innovative SMS services is depicted in Picture 2.
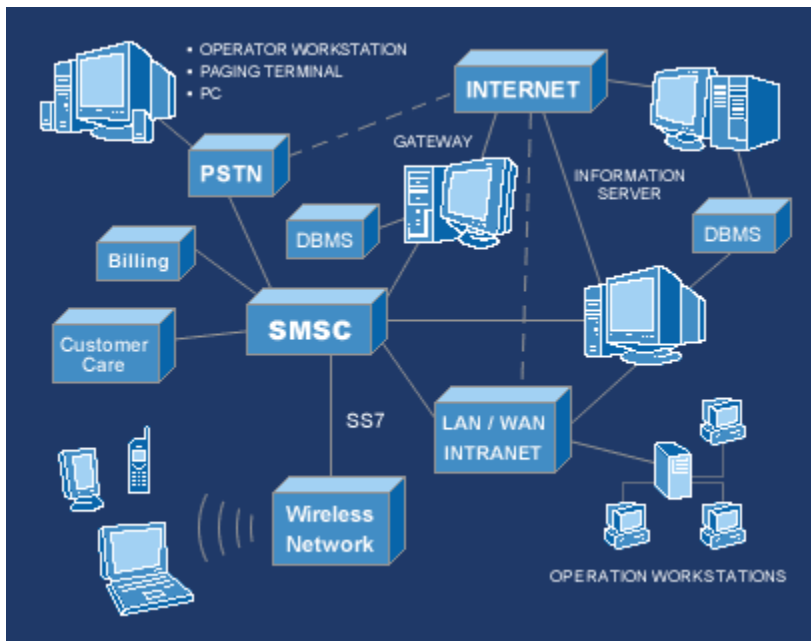
Picture 2. Network Infrastructure

Some of the potential applications of SMS technology, utilizing both MT-SM and MO-SM where appropriate, include the following:

Notification Services – Notification services are currently the most widely deployed SMS services. Examples of notification services using SMS include the following:

- Voice/fax message notification, which indicates that voice or fax mail messages are present in a voice mailbox
- E-mail notification, which indicates that e-mail messages are present in an e-mail mailbox Reminder/calendar services, which enable reminders for meetings and scheduled appointment.

E-mail Inter-working – Existing e-mail services can be easily integrated with SMS to provide e-mail to short messaging and mobile e-mail and message escalation.

Paging Inter-working – Paging services integrated with SMS allow digital wireless subscribers to be accessible via existing paging interfaces, as well as escalation of messages.

Information Services – A wide variety of information services can be provided by the SMS, including weather reports, traffic information, entertainment information (e.g., cinema, theater, concerts), financial information (e.g., stock quotes, exchange rates, banking, brokerage services), and directory assistance. SMS can support both push (MT) and pull (MO) approaches to allow not only delivery under specific conditions but also delivery on demand, as a response to a request.

WAP Integration – SMS can deliver notifications for new WAP messages to wireless subscribers but can also be used as the transport mechanism for WAP messages. These messages can contain diverse information from sources that include databases, the World Wide Web, e-mail servers, etc.

Mobile Data Services

The SMSC can also be used to provide short wireless data. The wireless data may be in interactive services where voice calls are involved. Some examples of this type of service include fleet dispatch, inventory management, itinerary confirmation, sales order processing, asset tracking, automatic vehicle location, and customer contact management. Other examples may be interactive gaming, instant messaging, mobile chat, query services, mobile banking, etc.

Customer Care and Management

The SMSC can also be used to transfer binary data that can be interpreted by the mobile device without presentation to the customer. This capability allows the operators to administer their customers by providing a mechanism for programming the mobile device. Examples of such services include mobile device programming, which allows customer profiles and subscription characteristics to be downloaded to the mobile device (customers can be activated/deactivated based on the data downloaded) and advice of charge, which enables the SMS to be used to report charges incurred for the phone call (e.g., calls made when roaming).

One interesting method to provide customer support is to offer a list of answers to frequently asked questions via short message. SMS also can be used to distribute general information about other products and services being offered by the service provider, thus guaranteeing maximum penetration of the advertising over the existing customer base. In a different scenario, a service provider may want to deliver short messages to subscribers to remind them of, for example, past-due payments, instead of reminding them over traditional mail or courier delivery, therefore reducing cost and ensuring that the message is delivered to its destination in a timely manner.

SMS Applications

SMS was initially designed to support limited-size messages, mostly notifications and numeric or alphanumeric pages. While these applications are and will continue to be widely used, there are more recent niches that SMS still can exploit.

Short bursts of data are at the heart of many applications that were restricted to the world of data networks with fixed terminals attached to a local-area network (LAN) or wide-area network (WAN). However, many of these applications are better served if the data communication capabilities could be added to the mobility of the station. Thus, a waiter who can charge a customer's credit card right at the table, at any time, instead of going to a fixed POS terminal located by the register will be able to help customers in a faster, more convenient way.

Also, the ability to track the location of a moving asset such as a truck or its load is very valuable for both providers and clients. This application, again, just needs to interchange small amounts of information, such as the longitude and latitude at a current time of the day, and perhaps other parameters like temperature or humidity.

This application does not necessarily require the monitored entity to be in movement. The requirements are basically short, burst data and a location that has digital network coverage. For example, in a neighborhood, it would be faster, easier, and cheaper to drive a truck from the local power company, which interrogates intelligent meters to obtain their current readings and then forwards them via short message to a central data processing center to generate the billing. Similarly, delivery trucks could be alerted of the inventory of a customer running low, when the truck is close to the customer's facilities. The truck driver could place a quick phone call to the customer to offer a short-time replenishment at a low cost for the distributor.

Another family of applications that can use SMS as a data transport mechanism is banking. It is no secret that automated teller machine (ATM) and Internet transactions are less costly than transactions completed at a branch. Internet transactions are even cheaper than ATM transactions. Therefore, enabling wireless subscribers to check their balances, transfer funds between accounts, pay their bills and credit cards is valuable, not only for the subscriber but also for financial institutions.

Entertainment applications are also good drivers of SMS usage. Examples of these are simple short message exchanges between two parties ("texting") or between multiple participants ("chat"). Also, delivery of information that the subscriber can tailor to his or her lifestyle represents an attractive proposition for wireless users.

Wireless Web browsing allows the users to search for information without the physical restrictions of a PC. College students certainly appreciate not having to go to the computer lab or their dorm to check e-mail or find out what the required book is for the semester that is about to start.

E-mail continues to be by far the most used wireless data application. However, handsets are evolving quickly and are including more and more functionality that supports newer applications at the same time that user friendliness increases. Probably the next big success beyond wireless Web will be Internet shopping and other e-commerce applications such as electronic coupons, advertising, etc.

The potential for applications is enormous, and new needs appear to arise constantly, demanding a solution that may travel over SMS.

Chapter 5

System Development

In this project, we divide total works into 4 different parts.

3. Logic Design
4. Database Design
5. Website Design
6. SMS sending & receiving

This phase is described in 2 parts. One is called compulsory (which is done by me), and others are called optional (which are done by other members of my group).

7. Logic Design (Compulsory)

It is always a difficult task to start any project. There always comes a fact in the sense that where to start from. As a fact, it came into the mind. But after all confusion, it was started with the logic design of the system. As everyone knows, the logic design is the primary task for every project to start. In this design, it is been planned how the works will be done. All the works are summarized and revised. It is also discussed with the group. Some models were built in this section. Few of them were deleted and few were selected. Some of the models were rebuilt after discussion. It was a difficult task to find the lacking of the existing websites those provides job-searching facility. After a hard working session of searching of websites, some of the major problems were pointed out those can cause in a very bad manner if SMS is included in the project. So, those cases were kept in mind. Our main concern was to select how to send SMS and what type of alerts should be made to gain the maximum output.

2. ER Diagram (Compulsary)

```
┌─────────────────────┐                          ┌─────────────────┐
│ tbl_senders_country │                          │   tbl_company   │
└─────────────────────┘                          └─────────────────┘
          │                                               │
          ▼                                               ▼
        ◇ From ◇                                       ◇ Submit ◇
          │                                               │
          ▼                                               ▼
┌─────────────────────┐                          ┌─────────────────┐
│   tbl_job_seekers   │                          │    tbl_jobs     │
└─────────────────────┘                          └─────────────────┘
          │                                               │
          ▼                                               │
        ◇ Have ◇                                          │
          │                                               ▼
          ▼                                        ◇ Match criteria ◇
┌───────────────────────────┐ ────────────────────▶       │
│ tbl_senders_specialization│                              ▼
└───────────────────────────┘                      ┌─────────────────┐
          │                                         │  tbl_send_sms   │──── Send SMS ──▶
          ▼                                         └─────────────────┘
        ◇ Chooses ◇
          │
          ▼
┌─────────────────────┐
│ tbl_specialization  │
└─────────────────────┘
```
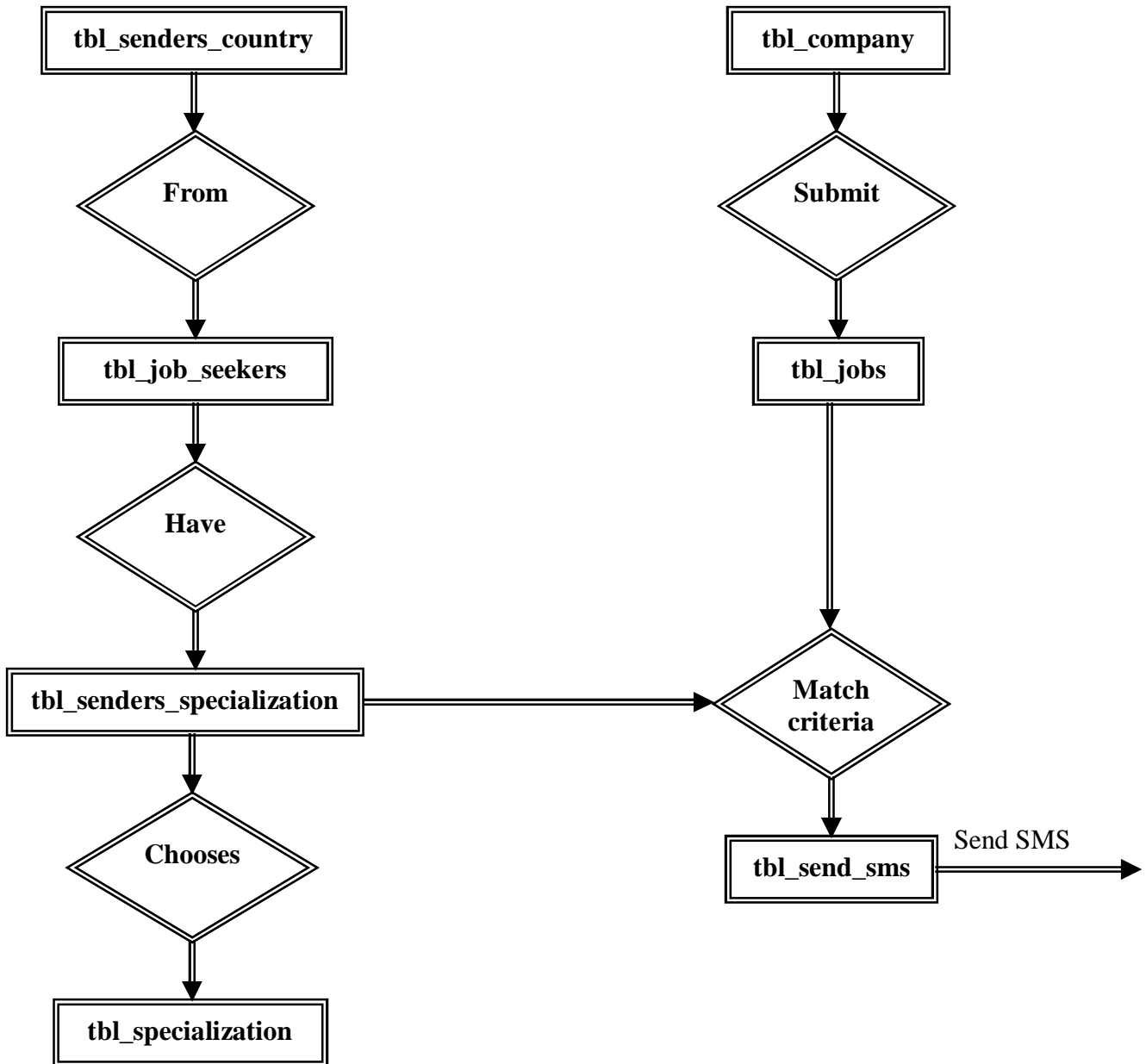
Fig: Website operation and sending SMS

```
┌─────────────────────┐          ◇ Match ◇   Apply   ┌─────────────────────┐
│  tbl_receive_sms    │ ───────▶ ◇ keyword ◇ ──────▶ │   tbl_application   │
└─────────────────────┘          ◇         ◇         └─────────────────────┘
                                     │                          │
                                     │                          ▼
                                     │                    ◇ Check by ◇
                                     │ Details            ◇ company  ◇
                                     │                          │
                                     ▼                          ▼
        Send SMS  ┌─────────────────────┐        ┌─────────────────────┐
       ◀────────  │    tbl_send_sms     │ ◀───── │    tbl_interview    │
                  └─────────────────────┘        └─────────────────────┘
```
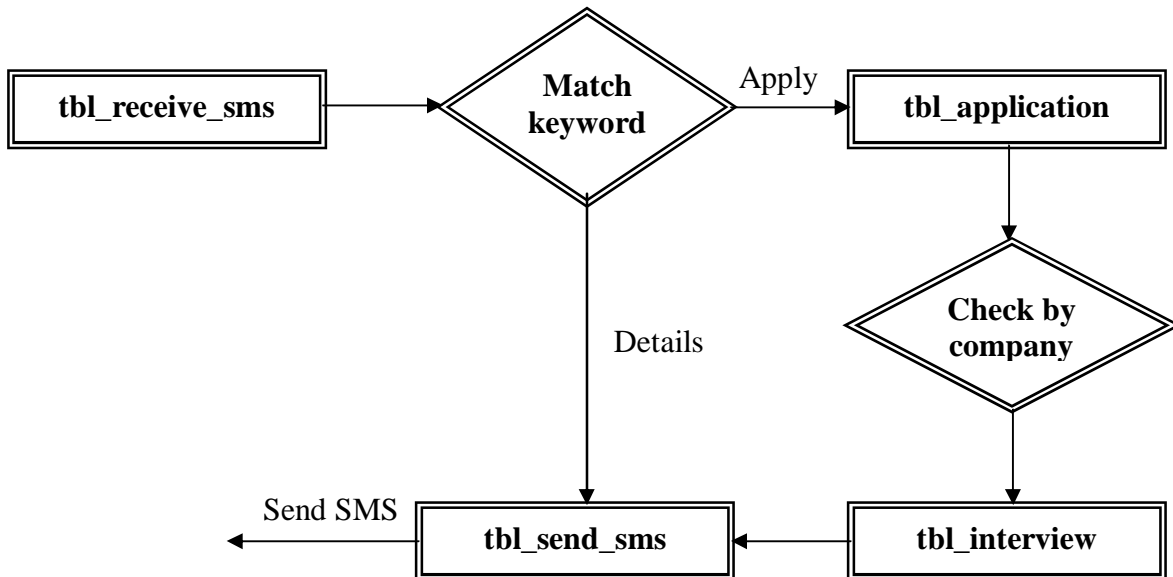
Fig: Sending SMS depending after retrieving SMS from GSM device

3. Website Design

Developing the site

We have developed a personal database driven website which currently runs on local host. To manipulate the database we use PHP & MySQL database is used in the back-end. To build the website we use following development tools.
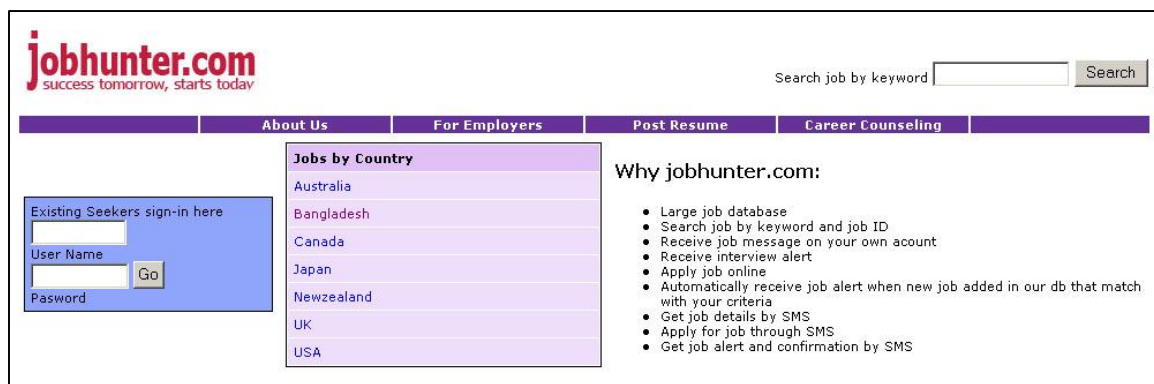
- PHP 5
- MySQL 4.0.12
- Macromedia Homesite 5
- Macromedia Dreamweaver MX
- SQLyog
- Adobe Photoshop CS2

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Website

To start working we have to visit many job sites and show all features that added in their sites. Our site consists of many pages, which work for different purposes. This important technique, serving as an alternative to the traditional job-hunt, which provided a good overview.

Home page

In the home page, there exists different log in options for the job seekers and company employee. Also browser of this site can watch the available jobs in different countries provided by the website. The new users can create account with posting their resume. There is an option for the seekers to search jobs according to the keyword.

Keyword search

Being idle user can easily check about the jobs by typing their desired key word in the white blank box at the right upper corner. This search will return results that are typed in.

Company

Employee: click this option we move to company log in. this s where company will log in before working it further. Without log in a company cannot use the site. The company can update its own information, add a new job, see no of applicants who applied for which posts. The company can easily decide who will be called for the interview. It's the easiest way to choose the interviewers.

Edit Company profile

In this section of the website under the company information, the admin of the respective company will view the information of the company and if admin will change any information of the company if it is needed. These are the purposes of this page.

New job

New job: this page where company put the details for the new job available in the job market. Details contain: designation, qualifications, and responsibilities, no of posts available, deadline to apply.

Check job status

In this title section, the employee can watch the applicant against each and every job posted under that company. After clicking on any applicant, there exist two options.

View details of applicant

In this part, the employee can view the details of the applicant for further information.

Call for interview/join

After viewing all the details of the applicant, the employee can call that applicant for interview/2nd interview/joining. In interview/2nd interview/joining section; employee will select the date and further information.

Edit job information

   If there occurs any mistake in inputting necessary data for a particular job, then with this option the mistake can be corrected. Also if any additional information is needed to include in any posted job, then that can be added in this section.

Seekers

1. Edit resume

It is natural to have mistakes in giving information. Also there occurs some changing in some information (address, phone number), and then seekers can easily update that information in this page.
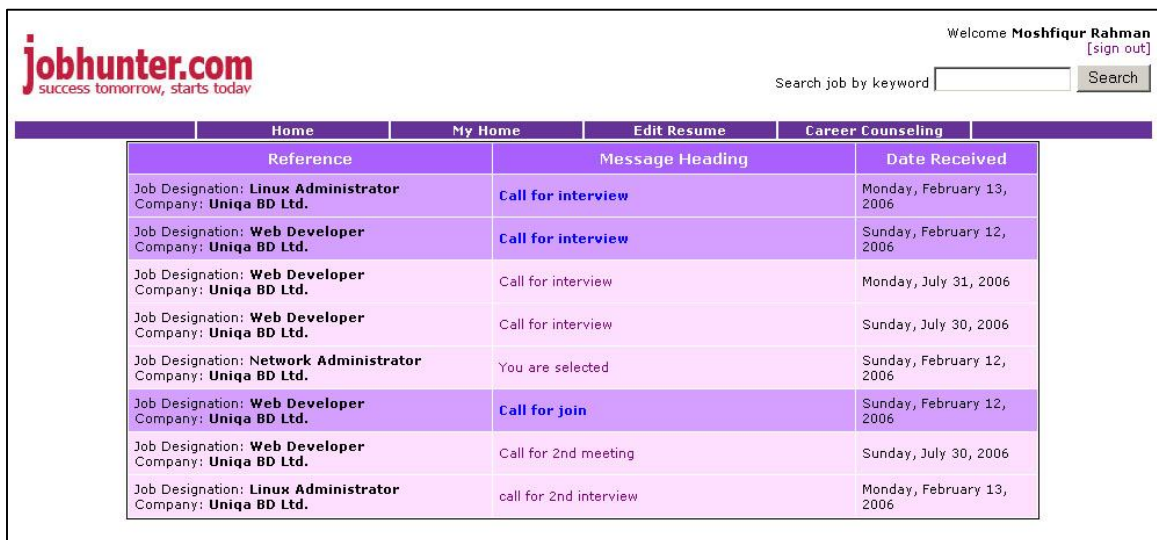
2. Message

When a seeker gets logged in the website, after the log in process, seeker will enter in this page and the first thing seeker will notice will be 2 messages. The first message is the list seeker has already applied. And the 2nd message will alert the seeker whether there is any interview/2nd interview/joining message.

2.1 Message List

Here, the seeker will able to watch all the messages that are been sent to him/her from the company.
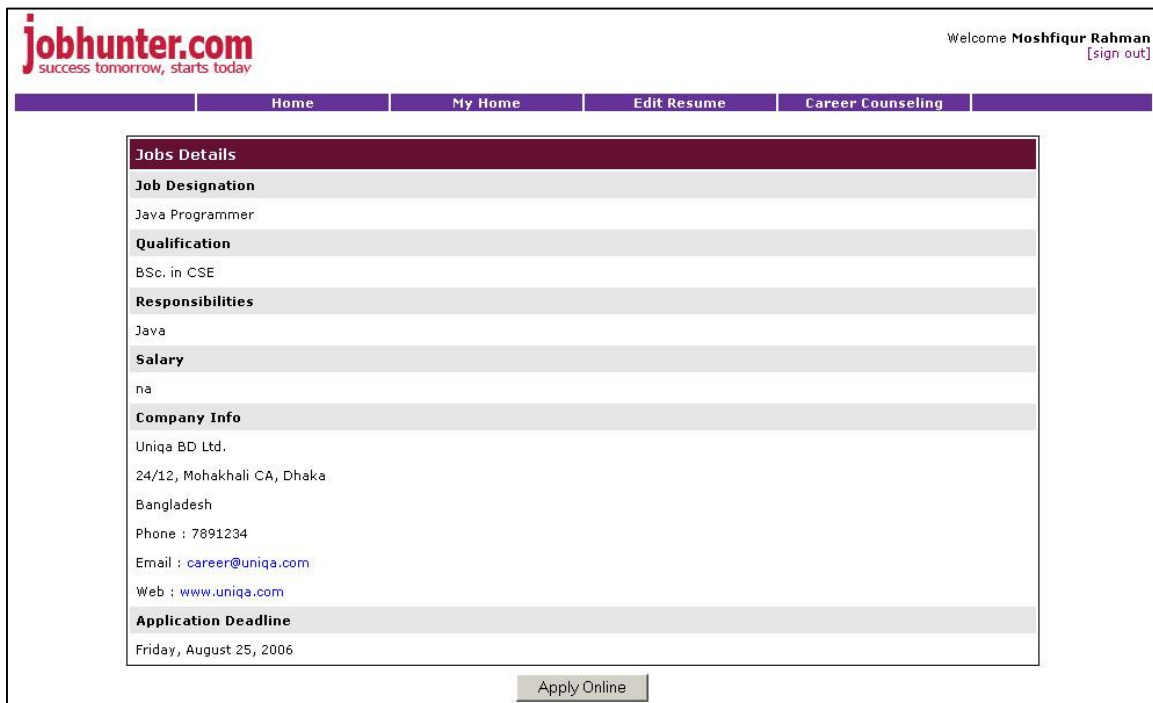
2.2 Applied job details

To get aware of applied job, seeker can look into those jobs in that specific page.

Apply job

In this page the seekers can post their resume online. Seekers need to submit resume to be valid member of the site. Considering some job sites we have added the same technique without posting resume seekers can't be a regular member. Here seeker will post resume according to the form designed in the software. For that we gathered all relevant information for the resume and included in the page. So that seeker can easily post their resume here and click on the **submit** button. The resume will be updated in the database. There are some other options in the same page from where anybody can edit previous and updated and saved it as a new one.

Apply online

After watching into the details of the job posted by any co

jobhunter.com				Welcome **Moshfiqur Rahman** [sign out]
success tomorrow, starts today				
	Home	My Home	Edit Resume	Career Counseling	

Jobs Details

Job Designation
Java Programmer

Qualification
BSc. in CSE

Responsibilities
Java

Salary
na

Company Info
Uniqa BD Ltd.
24/12, Mohakhali CA, Dhaka
Bangladesh
Phone : 7891234
Email : career@uniqa.com
Web : www.uniqa.com

Application Deadline
Friday, August 25, 2006

Apply Online

4. SMS SENDING & RECEIVING

4.0 Introduction

Adding SMS capabilities to an application is not a simple matter. It requires specialized knowledge that might be outside an individual programmer's expertise. To integrate the SMS capabilities, we rely upon the power, flexibility and reliability of the SMS and Pager Toolkit by ActiveXperts Software.

SMS and Pager Toolkit is an ActiveX/COM component, and provide SMS and Pager messaging functionality to an application.
With this Toolkit, we can **send** and **receive** SMS messages via a:

- **GSM modem**;
- **GSM phone**;
- **SMPP compliant SMSC provider**;
- **Hayes compatible modem**.

4.1 Hardware Requirements:

- GSM modems

  This is a fast and reliable device to send and receive SMS messages. We can send plain text SMS messages, Unicode messages, ring tones and other advanced SMS messages using a GSM modem.

  To send SMS messages using a GSM modem, we use the **GsmOut object**. To receive, we use the **GsmIn object**.

GSM phones with AT+C modem command support
GSM phones work similar to GSM modems. We connect our GSM phone to the server via the USB port. Connection with serial port or Bluetooth is also possible. People usually prefer to use a dedicated GSM modem rather than a GSM phone, because it is cheaper and faster.

To send SMS messages using a GSM phone and SMS and Pager Toolkit, use the **GsmOut object**; to receive, use the **GsmIn object**.

To send and receive SMS, we used the Nokia 6650 phone set and to connect it with the server we use DKU-2 type USB data cable.

Chapter 6

Software Testing

1. Unity and integration testing

We have tested our software in cell phones by sending SMS frequently. All the cell phones with GSM support will be able to successfully run our software

2. System testing

First we post a new job in the website. As soon as the job is saved in the database, a new job alert SMS is sent to the desired applicant. As the SMS server we use a number with +881711187962.

Now suppose applicant want to see the details. Then he/she has to type details and job id by a space to our server number (+881711187962). After a mobile server gets the SMS, it will reply with details to the applicant.

Details 55

Options   Back

Send to

01711187962

ID: 55
Qual: Graduation
Company: Uniqa BD Ltd.
Last Date: 1/8/2006
Salary: N/A

Options   Back
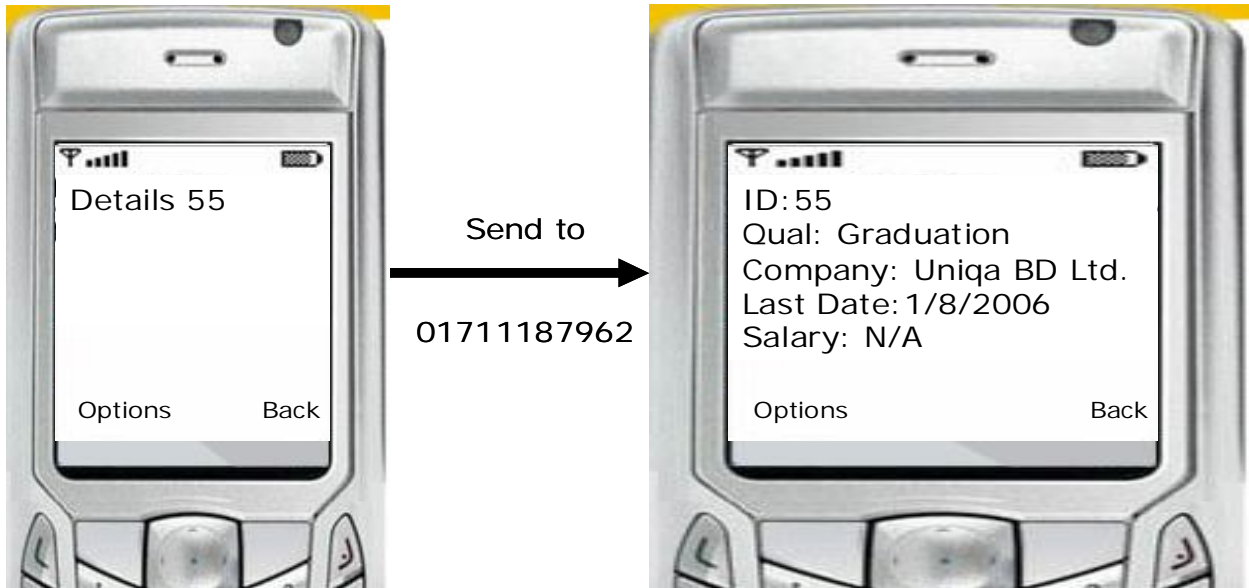
Watching the details of the job, if anyone wants to apply, then that person types apply then job id by a space to our server number (+881711187962).

Apply moshfiq 55

Options   Back

Send to

01711187962

Send   Back
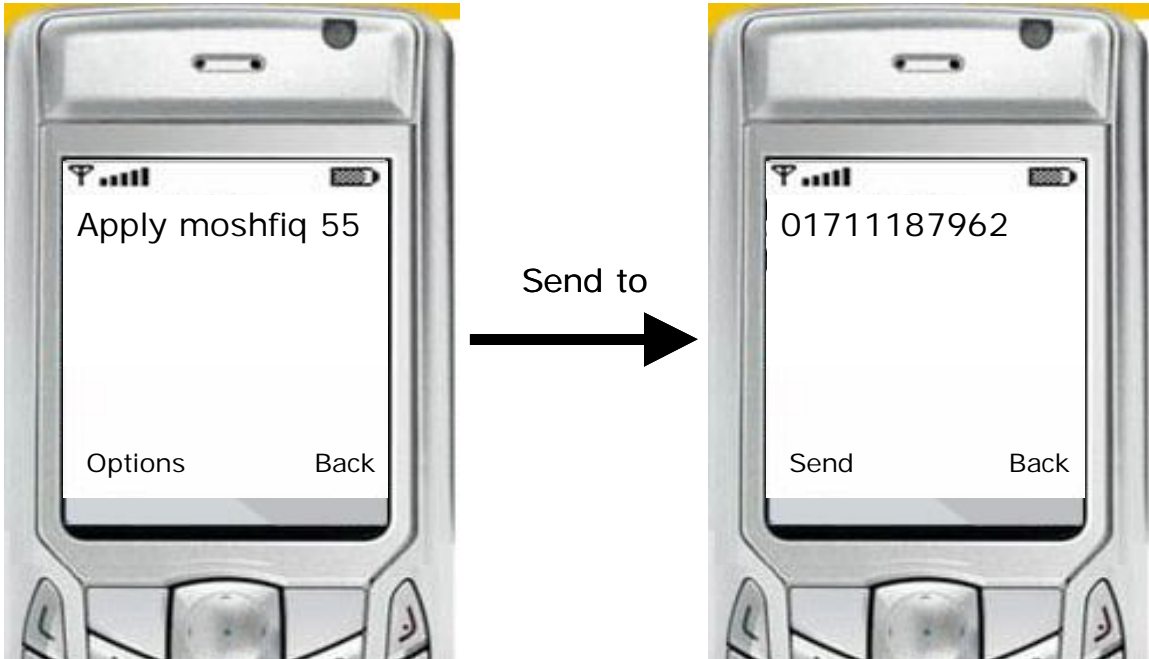
After all the tasks that are mentioned above are done, the company employee will check all the CV's. Then he/she chooses some applicant and sends SMS to those applicants for interview.

After interview, the applicant can be called for 2nd interview or joining.

After all the SMS are sent to the desired applicant, the SMS server will keep a record of all the SMS that are sent.

tbl_send_sms : Table			
send_id	mobile_no	sms_text	isSent
0	01712056388	New job alert from Bangladesh.JobID:47. Post:Application developer. Visit jobhunter.com for details.	1
1	01711187962	New job alert from Bangladesh.JobID:47. Post:Application developer. Visit jobhunter.com for details.	1
2	01712056388	New job alert from Bangladesh.JobID:48. Post:Application Developer. Visit jobhunter.com for details.	1
3	01711187962	New job alert from Bangladesh.JobID:48. Post:Application Developer. Visit jobhunter.com for details.	1
4	01712056388	New job alert from Bangladesh.JobID:49. Post:Application developer. Visit jobhunter.com for details.	1
5	01711187962	New job alert from Bangladesh.JobID:49. Post:Application developer. Visit jobhunter.com for details.	1
6	01712056388	New job alert from Bangladesh.JobID:50. Post:Application Developer. Visit jobhunter.com for details.	1
7	01711187962	New job alert from Bangladesh.JobID:50. Post:Application Developer. Visit jobhunter.com for details.	1
* Number)			0

Results

We have tested the unity and integrity of our software. It sends the SMS properly and properly receives in the server end. We have tested it using several types of input and we have successfully been able to read out all the data. But we have considered only one database for testing. For a complete testing we have to test in a large scale. It took lots of time for studying and testing.

Chapter 7

User Manual

Instruction for company admin

Company admin can post new jobs in the site but for that need unique user name and password. Otherwise any illegal company can post jobs, which will create a big problem for the users. Admin can edit their company details easily. Admin can delete existing jobs from the site and post new one.

Instruction for job seekers

Seekers must post resume before apply for any posts. Seekers must check SMS regularly. Seeker will get the job alert which will meet the criteria. Seekers must be authenticated. Seeker should follow the syntax that is provided in our system.

For details: Type "**<Details> <Job ID>**"

For apply: Type "**<Apply> <user name> <Job ID>**"

Instruction for the server

The SMS server and the website server must be active for 24 hours. Otherwise some new jobs will not be notified to right time.

Chapter 8

Future Developments
& Conclusion

Future developments

To develop any automated system we consider some future improvements. Due to lack of time we consider those features as future developments. In future it will be developed and will be able to test in a large scale for the large environment. Our proposed System does not send SMS for existing jobs. System sends SMS when any job comes online. For existing jobs our database that is involved with SMS must be huge one. Otherwise we cannot track so many SMS records. Now a days people search jobs using cell phones, which is a very effective, and time consuming. Seekers can't search jobs frequently from mobile. They can get the details about the job and can apply only. Searching job through mobile makes the system more efficient and more automated. People will have an account belongs to that job site and using this account user name password can check their desire jobs by typing keyword search. Its now developed in local host. Our web site will not launched in web portal. So for that we need to launch domain and through it to the Internet. People can easily browse the site from anywhere in the world. Our system requires a huge database warehouse where stores many valuable information's. Our future target is to develop under a huge database environment where all data's can be recorded easily. Our system is now examined in a small environment. But it is useful for the large environment. So we need to launch it for large scale for the large environment.

Now our system people can apply jobs by using their user name, which is not secured. So in future we will provide some pin codes for each user and using that code seeker can apply. That will ensure the security.

Conclusion

Being a part of the growing job market, it is expected that there will be a great advancement for the job seekers. This job website will greatly help the seekers. They will always be up-to-date with the new job alert in their cell-phone. Getting interview alert will not let them miss any dream opportunities. Getting job details will help them to check whether they are suitable for the job and applying by SMS will enable them to apply for any job from anywhere anytime.

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