

UNIVERSITY OF DAR ES SALAAM



**COLLEGE OF INFORMATION AND COMMUNICATION
TECHNOLOGY**

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

PROGRESS REPORT CS499

PROJECT TITLE: DESIGN AND IMPLEMENTATION OF JOB PORTAL WITH
AUTOMATED INTERVIEW.

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SIGNATURE:

DATE: 13th April 2017

STATEMENT OF OWNERSHIP

I declare that this report and the work described in it is my own work, with any contributions from others expressly acknowledged and cited.

I declare the work in this report was carried out in accordance with regulations of University of Dar-es-salaam and has not been presented to any other University for examination in either Tanzania or Overseas. Any views expressed in this report are those of the author and in no way represent those of the University of Dar-es-salaam.

SIGNED:

DATE:

ACKNOWLEDGEMENT

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LIST OF ACRONYMS AND ABBREVIATIONS

API	Application program interface
COICT	College of Information and Communications Technology
MVC	Hypertext Markup Language
HTML	Model–view–controller
PHP	Hypertext Preprocessor
SQL	Structured Query Language

ABSTRACT

Technology is dynamic; it evolves to adapt to the needs of the world. With the advent of the Internet, it is possible to perform online job search with automated interview. The World Wide Web has made it possible to integrate services that were done by different organizations on different platforms to single solution platforms.

This project aims to develop a system that will integrate the job portal system with interview so as to overcome difficulties that pertain the overall process of job recruitment. The methodology that has been used include the use of waterfall as a software development model. Primary data was collected from PSRS system through open ended interview. Secondary data was obtained from the internet, newspaper and so on.

Scheduling job applicants for their interviews is a crucial component of the hiring process. Whether done by a company's in house human resources department, through an outsourced service or recruiting company, or assigned to hiring coordinators, the task of scheduling and managing interview dates and times—as well as candidate information—can be tedious and time- consuming, especially if these interviews are scheduled over the phone, in- person. And based on recent survey results from the National Association for Business Economics that projects payrolls will rise an average of 170,000 employees per month in 2012, the need for efficient interview- scheduling methods will become increasingly vital as the economy continues to improve.

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CHAPTER ONE: INTRODUCTION

1.1 Background

Job seeking is an important step towards employment process. With developing country such as Tanzania the importance of employment is of great magnitude especially considering its economy. Job seekers tend to use various ways so as to obtain the information about a particular job post. Such ways include media such as Television, newspaper, radio and so on. But with growing use of information communication technology more methods of recruiting individual have appeared. Such method includes the use of web technology to advertise jobs.

They are known as job portal.

Job portal is a web based site that brings together diverse source of employment information so as individual seeking job can apply for one. Job portal are important as they centralize all job posts on a single system for easy use. Also through technology we can push much further and integrate automated interview system so as interviews can be performed seamlessly.

Automated interview is an online recruitment method conducted using computer-mediated communication (CMC) such as instant messaging, email, or video. Online interviews are separated into synchronous online interviews, for example via online chat which happen in real time online and asynchronous online interviews.

Recently in Tanzania there have been application of job portal technology but most systems have not integrated the interviewing process in this system. It is because our interviewers still use the face to face method of interviewing individuals. Face to face interview is common in Tanzania as most people have not yet been exposed to the internet or do not have technology required to access effectively this growing community of the internet.

With this system developed the process cost of the interview process will have decreased exponentially and individual shall be exposed to the online community so as to ease their entire life.

1.2 Problem Statement

With manual methods of searching for a job and interviewing an individual our community is faced with inefficient ways of recruiting individuals with variety of needed skills and yet maintain equality through the whole process. The inefficiency include employers are faced with additional cost of advertising job post in different media, payment for venues so as interview can be performed. By the other side of the coin job seekers also need additional cost for transport so as they can reach venue where they can perform the interview, they need to have access to communication media such as television or newspaper so they can be aware of the job post. Media such as television do not provide detail information about job post.

But with Information and communication technology we can be able to automate the process and save all cost as described above.

1.3 Project Objectives

1.3.1 General Objective

The Objective of this project is to design and develop job search portal integrated with automated interview system that will allow individual who search for a job with required specification to perform a preset interview by an employer.

1.3.2 Specific Objective

The following are specific objective of the project.

- i. To capture and analyze system requirement.
- ii. To design and implement a module that will allow to post and view jobs.
- iii. To design and implement interviewing module.
- iv. To integrate module and perform system testing of all system modules.

1.4 Significance of the project

- i. Job seekers can access system at any time for reference.

- ii. Employers will be able to target a specific people in the community. iii.
 - Carry out interviews with a very geographically dispersed population. iv.
 - Provide savings in costs to the job seekers and employers. v.
 - Record data quickly and accurately.

1.5 Project Scope

The system to be developed will focus on developing a web based system with modules that will allow posting and viewing jobs, interviewing an individual and alerting an individual via email. The system will use video interview using a computer web come and provide an alternative method of interview if needed by an interviewer.

CHAPTER TWO: METHODOLOGY

2.1 Literature Review

For Successful completion of this project literature review on several subjects is required as pointed out below for this project.

- a) Object Oriented (OO) System Design with UML
- b) Database Design and Implementation with MYSQL, to store all useful data
- c) Backend system development with PHP using Code Igniter Framework
- d) Front end system development with Java script using JQuery Framework

2.2 Design Approach

This project will use Waterfall software development model. The Waterfall model provides a framework for planning top – down systems development. The development flows down a number of successive activity stages the stages in the waterfall model overlap and feed information to each other. During design, problems with requirements are identified; during coding, design problems are found and so on. The development process is not a simple linear model but involves a sequence of iterations of the development activities.

With waterfall model the following are the task that are going to be done for successful completion of the project: -

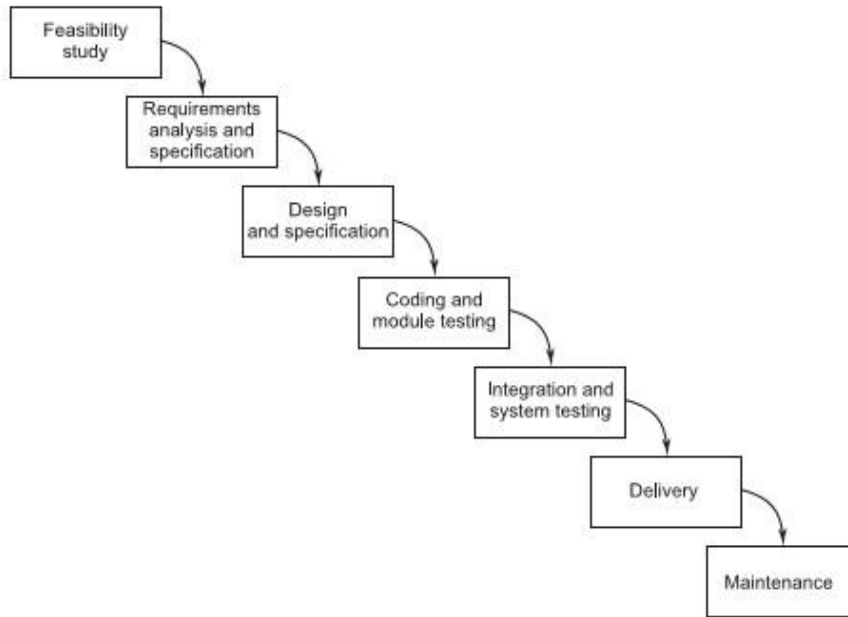


Figure 3.1: Waterfall model

2.3 Data collection

Data collection was done through two ways which include primary data collection and secondary data collection. Primary data was obtained by visiting and interviewing stake holders of the PSRD system. Also primary data was obtained through observation of the whole job recruitment and interview process. Secondary data was obtained through books, internet and newspapers.

CHAPTER THREE: IMPLEMENTATION AND UNIT TESTING

3.1 Overview

Implementation Phase involves writing actual code to implement system requirements according to the Design.

It has two distinct parts: -

- a) Writing programs that implement the design.
- b) conducting unit tests.

Generally, these activities include.

- a) Coding computer instructions and data definitions,
- b) Building databases, populating databases,
- c) And other activities needed to implement the design.

3.2 Implementation stages

- a) Installation of Xampp

XAMPP is a completely free, easy to install Apache distribution containing MariaDB, PHP, and Perl. Xampp provided the necessary tools for hosting the database and act as php server necessary to run the system.

- b) Installation of codeigniter frame work
 - CodeIgniter is installed in four steps:
 - Unzip the package.
 - Upload the CodeIgniter folders and files to server.
 - setting base URL in application/config/config.php as shown in code snippet 4.1

```
24 |  
25 */  
26 $config['base_url'] = 'http://localhost/JPAI';  
27 $config['system_folder'] = 'assets/systemFolder';
```

Code Snippet 3.1: setting base url

c) Creating the database via sql query

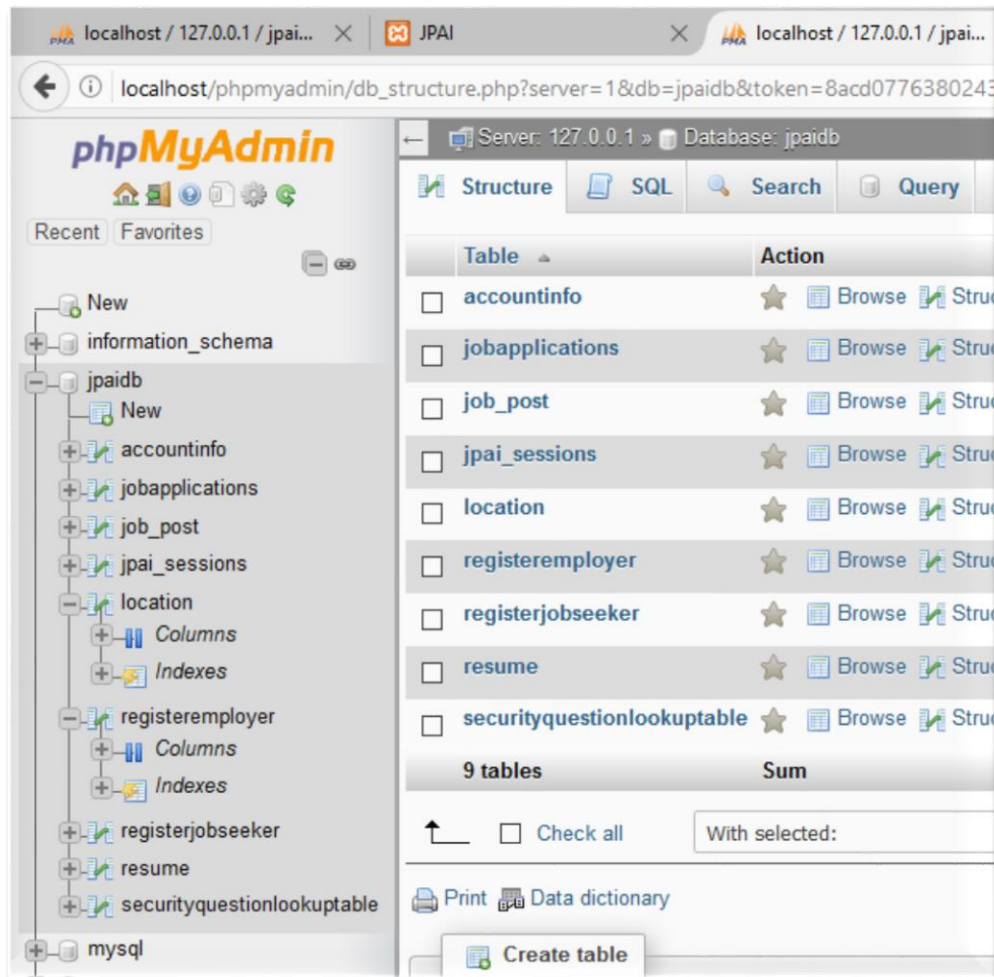


Figure 3.1 Tables of the system

3.3 System home page

Appearance of the homepage on figure 4.1

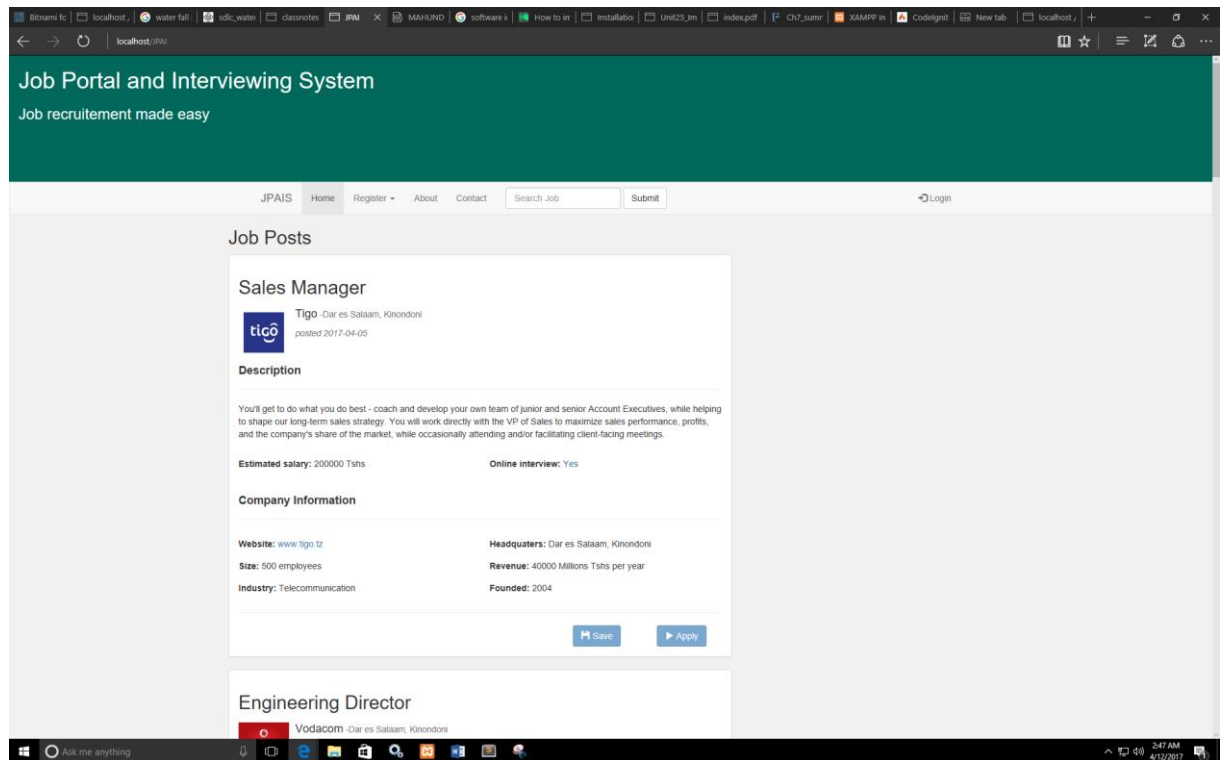


Figure 3.2: Home page

3.3.1 The Job Post section

The homepage is made from the function `index()` which is in the home controller. So in order to load the page we need to pass database request so as to get the posted jobs so far. The `index` function calls a model `main.php` with function. Refer to the code snippet 4.7.

```
//post job to home page
$this->main->getJobPost();
$this->data['jobPosts']=$this->result();
$this->load->view('homepage',$this->data);
}
```

Code snippet 3.2: Post job

3.3.2 The Registration page

The system registers so far two types of users as from the design: -

- a) Job seeker
- b) Employer

The regions and districts from the form are fetched from the database.

The form also validates user input as we can see from figure 4.2

Register Jobseeker

First name	<input type="text" value="John"/>	✓
Last name	<input type="text" value="Kalinga"/>	✓
Username	<input type="text" value="Kalinga"/>	✓ Username available
Email	<input type="text" value="kalinga"/>	✗ Please enter a valid email address
Password	<input type="password" value="••••"/>	✗ Your password must be at least 5 characters long
Confirm password	<input type="password" value="••••"/>	✗ Please enter the same password as above
Region	<input type="text" value="Iringa"/>	✓
District	<input type="text" value="Butiama"/>	✓
Date of Birth	<input type="text" value="02-16-2012"/>	
Security Question	<input type="text" value="What is your favorite team?"/>	✓
Security Answer	<input type="text" value="Yanga"/>	✓

Figure 3.2: User input validation.

Employer registration page

Register Employer ✕

Company name ✓

username

Email ✓

Password ✓

Confirm password ✕
Your password must be at least 5 characters long

Region ▼

District ▼

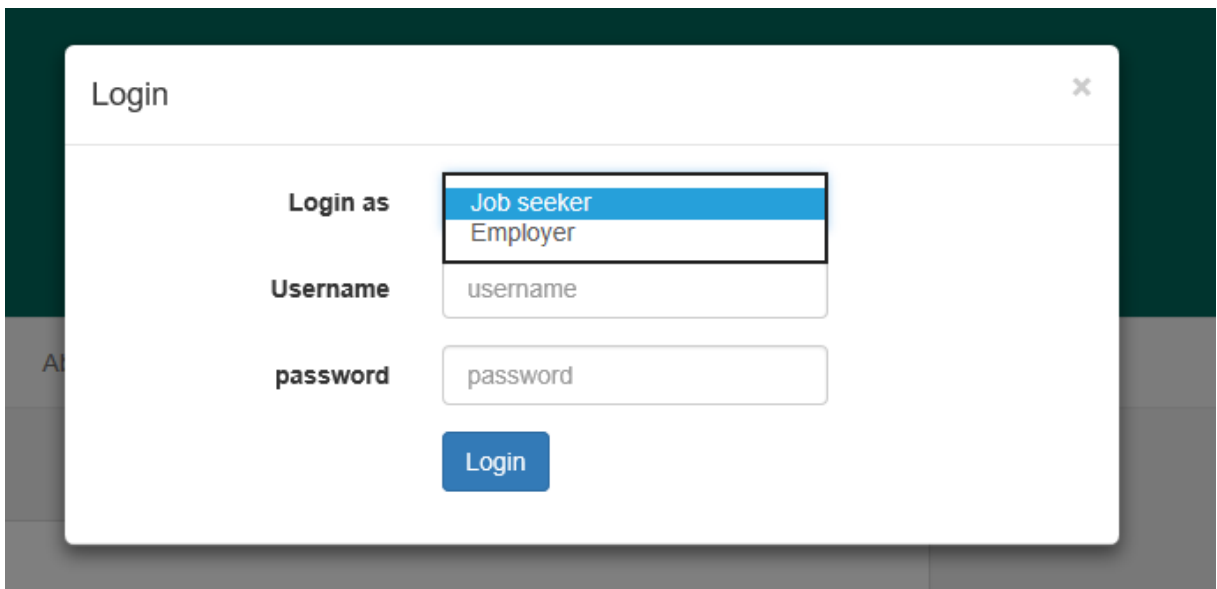
Security Question ▼

Security Answer

Figure 4.3: Employer input validation.

The login page

The login form provides the options to sign in both the employer and the job seeker as seen in figure 4.3



The login form is a white modal window with a dark green header bar. The title 'Login' is in the top left, and a close button (X) is in the top right. The form contains three input fields: 'Login as' with a dropdown menu showing 'Job seeker' (highlighted) and 'Employer'; 'Username' with a text input field containing 'username'; and 'password' with a text input field containing 'password'. Below the input fields is a blue 'Login' button.

Figure 3.3: Login For

3.4 The home page for the job seeker

The job seeker home page can be seen in figure 4.4.

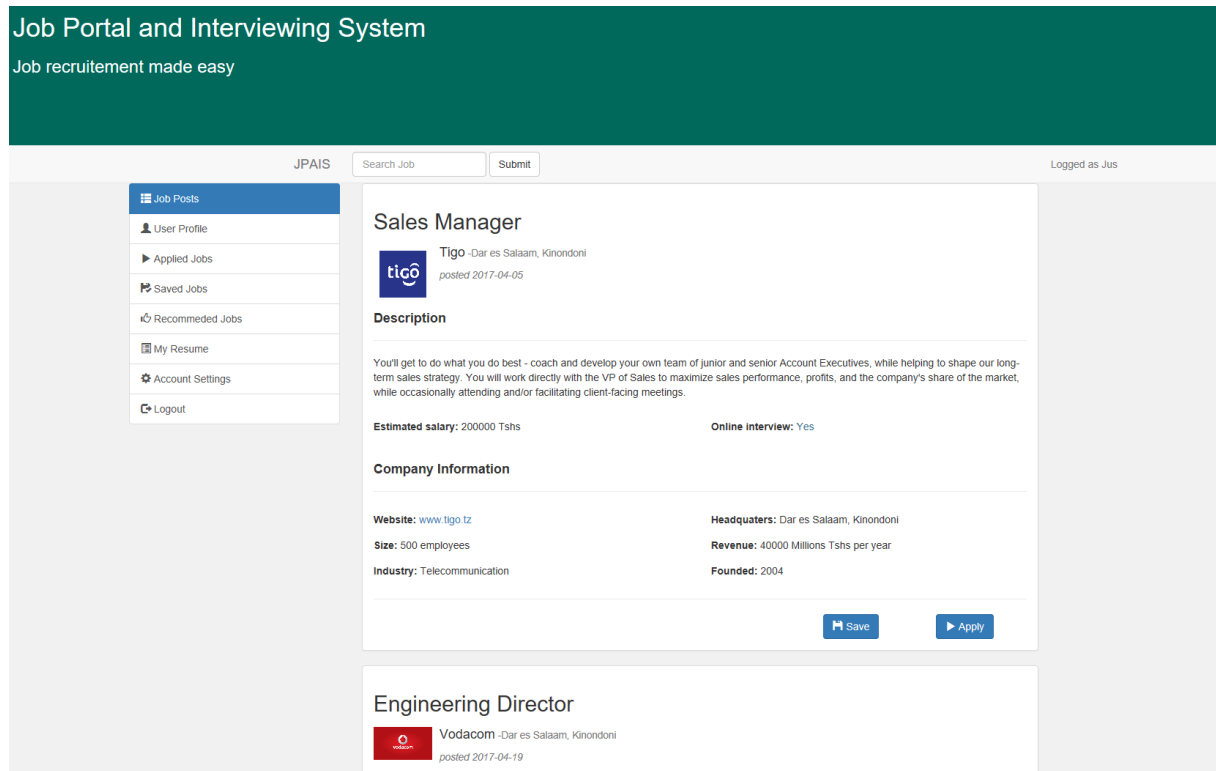


Figure 3.4: Job seeker Home page.

Job seeker home page contains the following options

- Job Posts

This sections provide all the necessary information to the job seeker about the name of the company, date of post, job title, description and option to apply or save the job post for letter reference.

- User profile
Provided user personal information including DOB, name, username etc.
- Applied jobs (in progress)
- Saved jobs (in progress)
- Recommended Jobs (in progress)
- My Resume

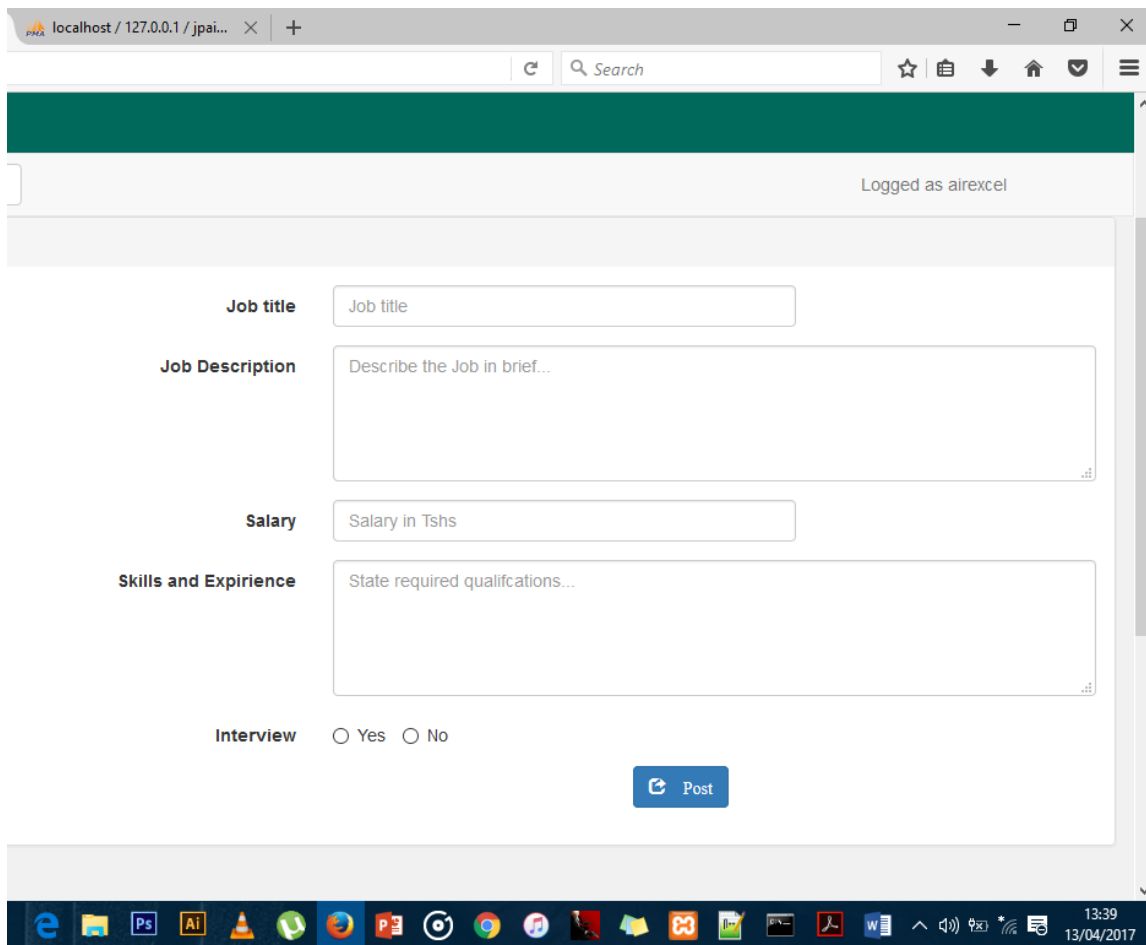
This section contains information about the user CV. Here the user can upload the his/her CV which shall be sent automatically to the employer when they apply.

- Account setting
- Logout option.

The Employer home page

The employer home page contains the following options

- a) User Profile
Provides the necessary information including company name, email, user name, location information and so on.
- b) Post Job
The post form is seen in figure 4.5



The screenshot shows a web browser window with the address bar displaying 'localhost / 127.0.0.1 / jpai...'. The page has a dark green header bar. Below the header, a light gray bar indicates 'Logged as airexcel'. The main content area contains a form with the following fields:

- Job title**: A text input field with the placeholder 'Job title'.
- Job Description**: A large text area with the placeholder 'Describe the Job in brief...'.
- Salary**: A text input field with the placeholder 'Salary in Tshs'.
- Skills and Expirience**: A large text area with the placeholder 'State required qualifications...'.
- Interview**: Two radio buttons labeled 'Yes' and 'No'.

A blue 'Post' button is located at the bottom right of the form. The Windows taskbar is visible at the bottom of the screen, showing various application icons and the system clock displaying '13:39 13/04/2017'.

Figure 3.5: Employer Post form.

Here employer can post job by providing the job title, salary as the form require.

- c) Posted Jobs

The section provides with the employer information about the posted jobs of which they can decide to delete or edit.

- d) Applications
- e) Statistics
- f) Account Settings
- g) Logout

CHAPTER FOUR: CONCLUSION AND RECOMMENDATIONS

4.1 Work Done So Far

The following is what has been done so far;

- i. System Design
- ii. Making of the post module
- iii. Making accounts for the employer and Jobseeker
- iv. Some unit testing

4.2 Work to be Done.

- i. Implementation of the interviewing module.
- ii. Refining the functionalities for both the users
- iii. Making the administrator account.
- iv. Integration and testing of the entire system

4.3 Budget

For completion of the project, Table 4.1 shows the estimated budget that will be incurred.

NO	MATERIALS	UNITS	UNIT COST	COST (T/SH).
1	Internet Surfing	42 days	1,500	63,000/=
2	Report Printing	200 pages	100	20,000/=
3	Report Binding	4 reports	3500	14,000/=
4	Transport expenses	1 person	48,000	48,000/=
5	Communication	1 person	30,000	30,000/=
6	Overheads			43,000/=
	TOTAL			218,000/=

Table 4.1

4.4 Time Schedule

Time schedule can be seen on table 4.2

S/N	ACTIVITY	WEEKS (SEMISTER 2)																
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	Setting out development environment																	
2	Meeting with the supervisor																	
3	Database implementation																	
4	Developing the System front end																	
5	Making the users accounts																	
6	Implementation of Job post module																	
7	Progress report preparation																	
8	Submission of the progress project report																	
9	Presentation of the Progress report																	

10	Implementation of the interviewing module																
11	Making the administrator account																

Table 4.2

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