QUESTION PAPER GENERATOR

Project submitted in partial fulfillment of the requirements for the award of the degree of

BACHELOR OF TECHNOLOGY

IN

COMPUTER SCIENCE AND ENGINEERING

BY

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

HOLY MARY INSTITUTE OF TECHNOLOGY AND SCIENCE

(COLLEGE OF ENGINEERING)

(Approved by AICTE New Delhi, Permanently Affiliated to JNTU Hyderabad, Accredited by NAAC with ‘A’ Grade)

Bogaram (V), Keesara (M), Medchal District -501 301.

2020 – 2021

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CERTIFICATE

This is to certify that the major project entitled " QUESTION PAPER GENERATOR" is being submitted M.RAMYA (17C91A0576), T.SAI TEJA (17C91A05A4), M.BHAVANI (17C91A0581), in Partial fulfillment of the academic requirements for the award of the degree of Bachelor of Technology in "COMPUTER SCIENCE AND ENGINEERING" HOLY MARY INSTITUTE OF TECHNOLOGY AND SCIENCE, JNTU Hyderabad during the year 2020- 2021.

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ACKNOWLEDGEMENT

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My special thanks to **Dr. B. Narsimha, Head of the Department**, Dept. of Computer Science and Engineering, Holy Mary Institute of Technology and Science who has given an immense support throughout the course of the project.

I also thank to **Dr. P. Bhaskara Reddy,** the **honorable Director** of my college Holy Mary Institute of Technology and Science for providing me the opportunity to carry out this work.

At the outset, I express my deep sense of gratitude to the beloved **Chairman A. Siddharth Reddy** of **Holy Mary Institute of Technology and Science**, for giving me the opportunity to complete my course of work

I am obliged to **staff members** of Holy Mary Institute of Technology and Science for the valuable information provided by them in their respective fields. I am grateful for their cooperation during the period of my assignment.

Last but not the least I thank **ALMIGHTY** and My **Parents**, and **Friends** for their constant encouragement without which this assignment would not be possible.

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DECLARATION

This is to certify that the work reported in the present project titled **"QUESTION PAPER GENERATOR"** is a record of work done by me in the Department of Computer Science & Engineering, Holy Mary Institute of Technology and Science.

No part of the thesis is copied from books/journals/internet and wherever the portion is taken, the same has been duly referred in the text the reported are based on the project work done entirely by me not copied from any other source.

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ABSTRACT

In this system we present a smart question paper generating system for universities. It is made to allow universities to generate question papers with random but even questions to cover most chapters of subject with difficulty level within seconds and mail them to colleges instantly.

In our system we allow administrator to input a set of questions and respective answers for option ticking. We also allow admin to provide weight age and complexity for each of these questions. After this the questions are stored in database along with their weight age.

Now on question paper generating time the admin just has to select the percentage of difficulty. On this selection the system selects questions randomly in a way that their weightage makes up for 100 marks and according to difficulty that admin chooses the questions are chosen based on their complexity level.

The questions are also added for various difficulty levels so that as soon admin chooses the type of paper difficulty (Easy, medium, difficult) the system automatically generates paper, prepares doc file as per selected paper format. Also emails it to other colleges. After this q paper is converted to pdf file and emailed to colleges on button click. Question Paper Generator project is developed using PYTHON, CSS, HTML, and JavaScript. Talking aboutthe project, it has all the essential features required for the question generation for the exams.This project is mostly from the users perspective.

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LIST OF SCREEN SHOTS

CHAPTER 1

INTRODUCTION

In this system we present a smart question paper generating system for universities. It is made to allow universities to generate question papers with random but even questions to cover most chapters of subject with difficulty level within seconds and mail them to colleges instantly.

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1.2 AIM OF THE PROJECT

Question Paper Generator is special and unique software, which used in school, institutions, colleges, test paper setters who want to have a huge database of questions for frequent generation of question. This software can be implemented in various medical, engineering and coaching institutes for theory paper.

1.3 OBJECTIVES

The main objective of the project on automatic question paper generator is to manage the details of branch, subject, semester. The project is totally build at administrative end and thus only the administer is guaranteed the access. The purpose of the building is to build an application program to reduce the manual work for managing the branch, course, subject, difficulty level. It tracks all the details about the difficult level, questions, semester.

1.4 Existing System and its disadvantages

The existing portal which is not optimized and secured the portal which is not optimized for teachers or Host. The evaluation process is not up to the mark the students UI and the teacher UI is not efficient for the evaluation approach. The lack of band width causes huge damage to the online examination Can't keep a Check on Students Keep in mind that students give their exams while being alone. Also, no one should be there to help them.....Open Text Question: The teacher can ask open text questions but they will not auto-grade. Also, teachers have to give time to check them.

After they have finished the examination, the student taking the exam must click on a certain button that would require finishing the examination process. Even though this seems easy, online examination has its advantages and disadvantages as well. The students who agree that online examination is good has many advantages.

An online exam system is a little bit more susceptible for fraud and open text questions don't auto-grade. Why use an online examination system? The advantages are overwhelming compared to a traditional exam. Is online learning as good as face-to-face learning?

Since the advantages outweigh them by far. But there might be some, for example, you needto be computer literate (or able to use a computer well) in order to create and take an assessment. Technology is not always reliable, there might be connection or internet problems, energy breaks and other things like that. Also, there's a cost involved in online assessment software.

It is true, exams do test knowledge to some extent but the process is very time consuming and lacks creativity. New ideas can be thought of which are lesser time consuming and bring out the creativity in students. Practically testing knowledge is a better way I would say!

Some of the system get manipulated by the hackers and attack server and lot of traffic cancause damage to the server and end up with failure.

1.5 PROPOSED SYSTEM

We had originally proposed to create a Question paper generator for online examination purpose. We choose this project as there is a lack of communication between teacher and students while on going exams. My team though we could solve this problem by our project. The project is a two-way communication for Teacher they can monitor students and their results and Attendance. The project is built in web development for the purpose for easy compatibility for every student requirement which match their online examination.

In this pandemic as we know all the exams are been conducted online. We team made the possible solution towards success. The project which helps 100of colleges and university can conduct online exam.

These tests are online tools for assessing the current position of students academically. The main purpose of arranging online tests is to teach students an effective way of learning. Tests are essential form of learning; your efforts and learning will only be counted if assess it through tests and assessments.

1.6 LITERATURE REVIEW

A literature survey is a guide that helps a researcher to find, identify and define a problem. This is the survey of the various reports, books, journals, articles that are related to your project work, which helps in the justification of your work. Here are a few survey templatesthat are available which you can use as a framework for your report.

The online world then took on a more recognizable form in 1990, when computer scientist Tim Berners-Lee invented the World Wide Web. While it’s often confused with the internet itself, the web is actually just the most common means of accessing data online in the form ofwebsites and hyperlinks.

(Image: CERN) Tim Berners-Lee, a British scientist, invented the World Wide Web (WWW) in 1989, while working at CERN. The Web was originally conceived and developed to meet the demand for automated information-sharing between scientists in universities and institutes around the world.

With web development taking off rapidly in the industry, the demand for Web Developers is skyrocketing. In fact, web development has emerged as a promising field right now, attracting aspirants from all educational and professionals backgrounds.

Tim Berners-Lee wrote the first proposal for the World Wide Web in March 1989 and his second proposal in May 1990. Together with Belgian systems engineer Robert Cailliau, thiswas formalised as a management proposal in November 1990. This outlined the principal concepts and it defined important terms behind the Web.

CHAPTER 2

METHODOLOGY

Data Collection:

A great challenge in working with text classification is collecting of good quality data, whichis difficult in the case of sarcastic text.

Technology

Python:

The work needs to be implemented with a programming language that is convenient to use for particular machine learning methods. Python is a versatile programming language that supports both object-oriented programming and functional programming. It provides wide spectra of libraries that supports a lot of different programming tasks and is also open source. The libraries are easy to install and well structured.

2.1 ORGANISATION OF THE REPORT:

Chapter-1 Introduction discusses the introduction of the project, the scope of the work, the main aim of the project and problem statement. It also includes the significance of the work and the methodology proposed for the implementation.

Chapter-2 Literature Survey includes the survey of existing systems related to the proposed system and comparison in the means of technology, or various features like performance, accuracy and fault tolerance. This helps in identifying the drawbacks inthe existing system and to impose them in the proposed system.

Chapter-3 System Requirements discusses the hardware and software requirements necessary for the prediction of tweets. The tools needed in implementation and their usage are explained clearly in this chapter.

Chapter-4 System Design mainly describes the design of the proposed methodology. The Architecture and Data Flow diagrams play a keen role in the new methodology. It helps in understanding the process of implementation and what kind of tools need to be used in the implementation.

Chapter-5 Implementation describes the detailed explanation of various modules for implementation and step by step procedure for the building of each module such that to satisfy the features of individual modules.

Chapter-6 Testing discusses mainly software testing importance and types of testing need to be followed to check the working of the developed application. It also includes the test cases and the results obtained during testing of the implemented modules.

Chapter-7 Experimental Results includes the outcome of the source code, the main results obtained after the implementation of new code and comparison of the proposed approach with the existing approach.

Chapter-8 Conclusion & Future Enhancement discusses the conclusion part of the work and the future scope of the work. This chapter describes the features of the worklike performance, reliability and availability of the prediction results.

CHAPTER-3

SYSTEM REQUIREMENT

The previous chapter discussed the literature survey of existing systems and analyzing the accuracy and methods of the previously existing works. In this chapter discusses system requirements that includes the software and hardware requirements for the work. Also the tools used for the coding environment. The usage of tools will make work environment emphasized.

3.1 Functional Requirements

A functional requirement demonstrates the function of software application or its component and is also explained as group of input, behaviour and outputs. The proposed system is achieved by dividing the data into chunks and the APs applying chunk scheduling algorithm. Applying carrier selection algorithm by APs leads to carry and forward transmission of the data chunks to the destination.

HARDWARE REQUIREMENTS:

System	:	Intel i 3Core.5th gen
Hard Disk	:	80 GB.
Monitor	:	15’’ LED
Input Devices	:	Keyboard, Mouse
Ram	:	4 GB

SOFTWARE REQUIREMENTS:

Operating system	:	Windows 10.
Coding Language	:	Python3
Editor	:	VS CODE
Module	:	Tkinter, Opencv

3.2 COMMUNICATION INTERFACES:

Software Interface

Python is a general-purpose interpreted, interactive, object-oriented, and high-level programming language. It was created by Guido van Rossum during 1985- 1990. Like Perl, Python source code is also available under the GNU General Public License (GPL).

Python is a high-level, interpreted, interactive and object-oriented scripting language. Python is designed to be highly readable. It uses English keywords frequently where as other languages use punctuation, and it has fewer syntactical constructions than other languages.

Advantage of python: -

Let's see how Python dominates over other languages.

1. Extensive Libraries 2. Extensible 3. Embeddable 4. Improved Productivity 5. IOT Opportunities 6. Simple and Easy 7. Readable 8. Object-Oriented 9. Free and Open-Source 10. Portable 11. Interpreted

Python is Interpreted − Python is processed at runtime by the interpreter. Do not need to compile your program before executing it. This is similar to PERL and PHP. Python is Interactive − You can actually sit at a Python prompt and interact with the interpreter directlyto write your programs

Python is Object-Oriented − Python supports Object-Oriented style or technique of programming that encapsulates code within objects.

Python is a Beginner's Language − Python is a great language for the beginner level programmers and supports the development of a wide range of applications from simple text processing to WWW browsers to games.

Characteristics of Python

It supports functional and structured programming methods as well as OOP.

It can be used as a scripting language or can be compiled to byte-code for building large applications.

It provides very high-level dynamic data types and supports dynamic type checking.

It supports automatic garbage collection.

It can be easily integrated with C, C++, COM, ActiveX, CORBA, and Java.

Basic syntax: The Python language has many similarities to Perl, C, and Java. However, there are some definite differences between the languages.

First Python Program

Let us execute programs in different modes of programming.

Interactive Mode Programming

Invoking the interpreter without passing a script file as a parameter brings up the following prompt

– $python.

If running new version of Python, then would need to use print statement with parenthesis as in print ("Hello, Python!");. However, in Python version 2.4.3, this produces the following result –

Hello, Python! Script Mode Programming

Invoking the interpreter with a script parameter begins execution of the script and continues untilthe script is finished. When the script is finished, the interpreter is no longer active.

Hello, Python! Script Mode Programming

Invoking the interpreter with a script parameter begins execution of the script and continues Until the script is finished. When the script is finished, the interpreter is no longer active.

Let write a simple Python program in a script. Python files have extension .py. Type the following source code in a test.py file –We assume that you have Python interpreter set in PATH variable. Now, try to run this program as follows –

- $ python test.py
- This produces the following result –
- Hello, Python!

Hardware Interface

Computer: Intel or compatible Pentium class 4 processor or higher.

Memory (RAM): At least 2GB

CHAPTER 4

SYSTEM DESIGN

INTRODUCTION

The previous chapter briefly describes the hardware and software requirements for the processing of methodology. It includes the tools needed to implement and proper working of the source code execution environment. This chapter discusses the design of the work that is the Architecture of the approach, the data flow diagram and the use case diagram for the proposed approach.

4.1 SYSTEM ARCHITECTURE DIAGRAM:

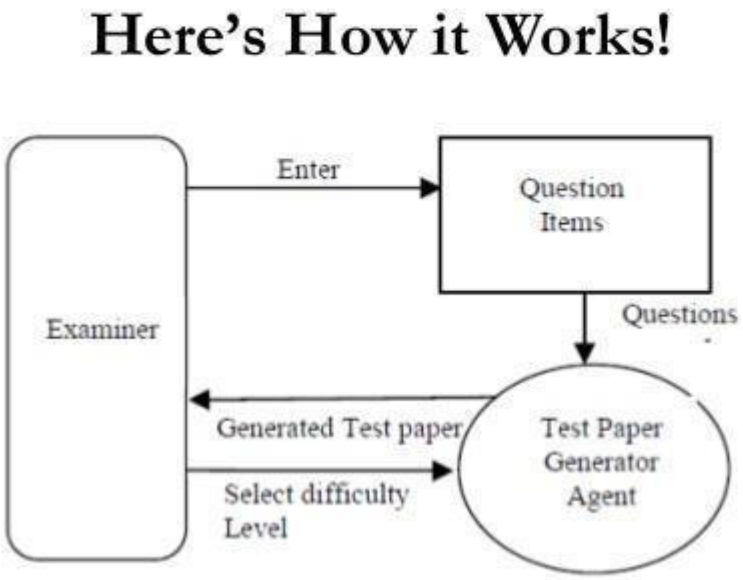


Fig 4.1: System architecture Diagram

4.2 DATA FLOW DIAGRAM

A data-flow diagram (DFD) is a way of representing a flow of a data of a process or a system (usually an information system). The DFD also provides information about the outputs and inputs of each entity and the process itself. A data-flow diagram hasno control flow, there are no decision rules and no loops. A data flow diagram (DFD) maps out the flow of information for any process or system.

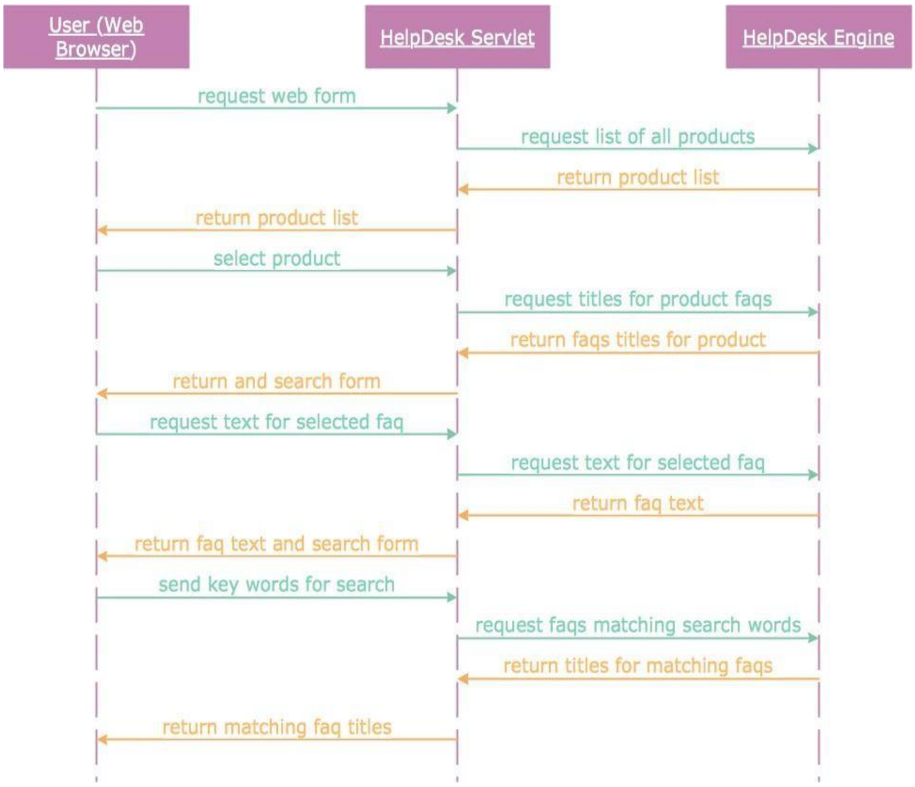

User (Web Browser)
HelpDesk Servlet
HelpDesk Engine
request web form
request list of all products
return product list
return product list
select product
request titles for product faqs
return faqs titles for product
return and search form
request text for selected faq
request text for selected faq
return faq text
return faq text and search form
send key words for search
request faqs matching search words
return titles for matching faqs
return matching faq titles

Fig 4.2:Data Flow Diagram

4.3 USECASE DIAGRAM

A use case diagram at its simplest is a representation of a user's interaction with the system that shows the relationship between the user and the different use cases in which the user is involved.

A use case diagram can identify the different types of users of a system and the different usecases and will often be accompanied by other types of diagrams as well.The use cases are represented by either circles or ellipses.

del. Help developers understand the system functions and system process analy

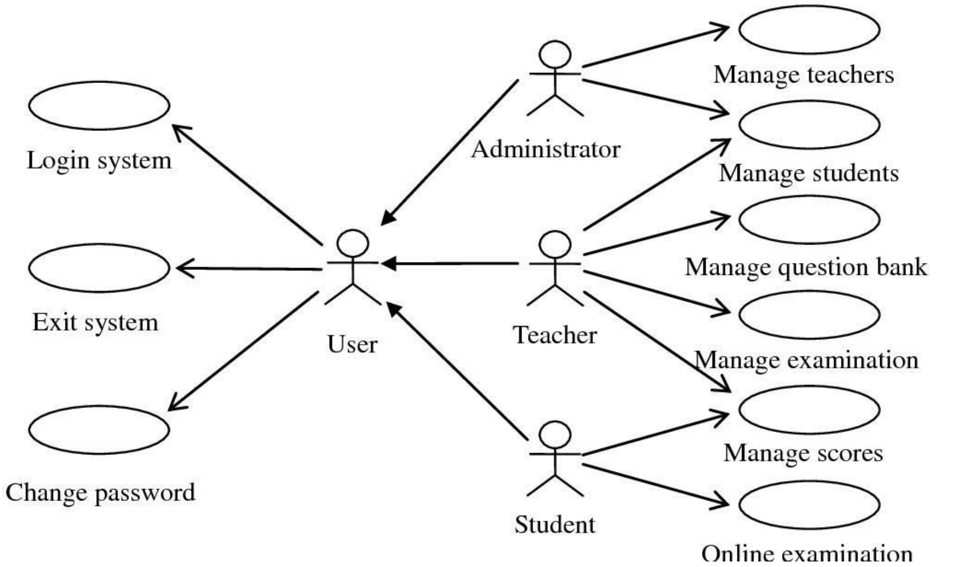
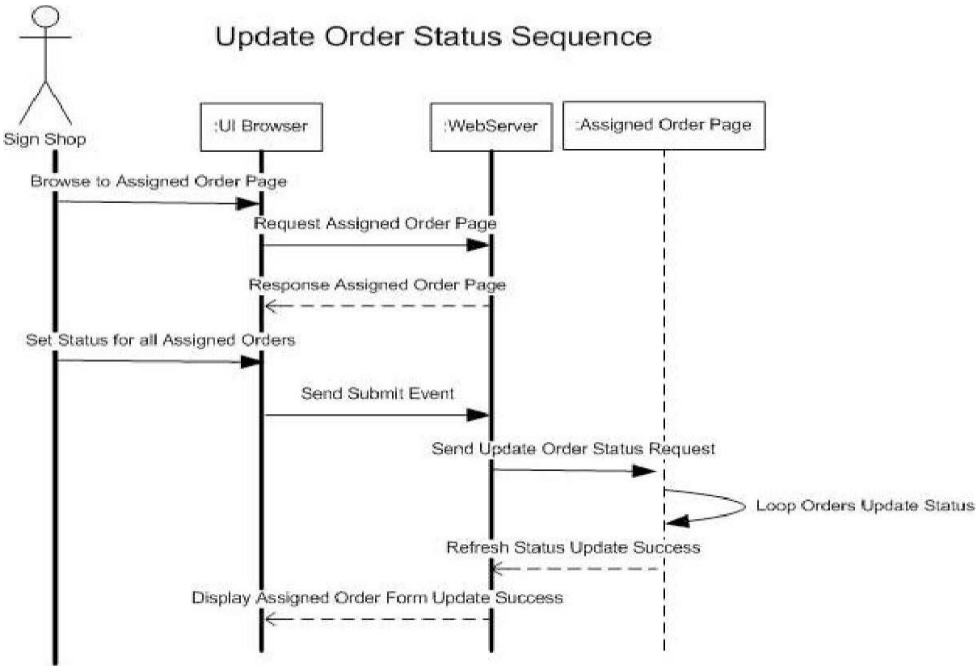


Fig 4.3:Use Case Diagram


Update Order Status Sequence
Sign Shop
:UI Browser
:WebServer
:Assigned Order Page
Browse to Assigned Order Page
Request Assigned Order Page
Response Assigned Order Page
Set Status for all Assigned Orders
Send Submit Event
Send Update Order Status Request
Loop Orders Update Status
Refresh Status Update Success
Display Assigned Order Form Update Success

CHAPTER 5

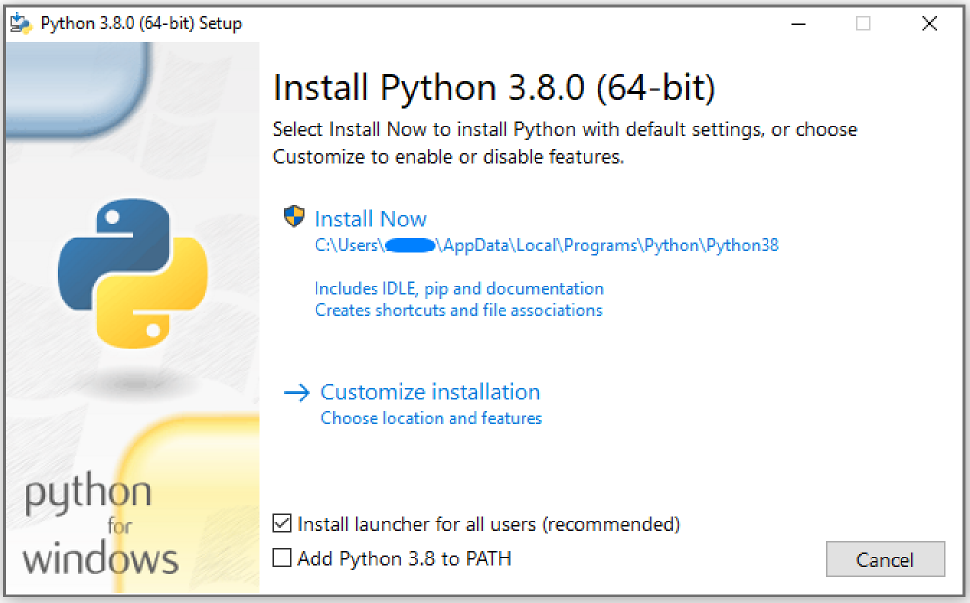
IMPLEMENTATION

5.1 INTRODUCTION

INSTALLATION PROCEDURES

Python is an open-source and Easy to install in GUI application from official websitepython.org Click on install python made it automation installation.

The python 3.8 version is used in the project in 3.8.0 is one of the stable version for the project we used and setting up the environment in windows are configured in the next step.



Python 3.8.0 (64-bit) Setup

Install Python 3.8.0 (64-bit)

Select Install Now to install Python with default settings, or choose Customize to enable or disable features.

Install Now
C:\Users\[redacted]\AppData\Local\Programs\Python\Python38

Includes IDLE, pip and documentation
Creates shortcuts and file associations

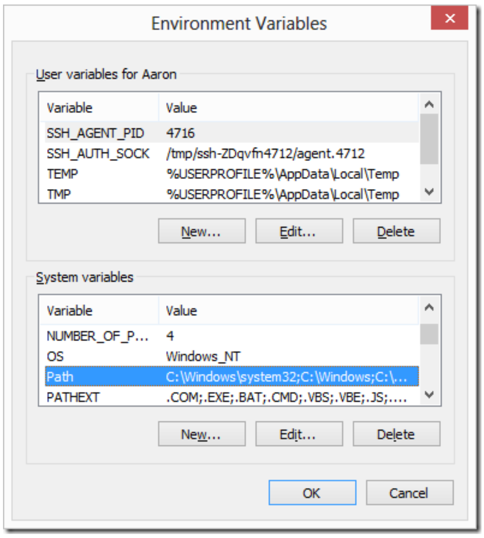
→ Customize installation
Choose location and features

☑ Install launcher for all users (recommended)
☐ Add Python 3.8 to PATH

Fig 5.1: Installation procedure

Setting Up Environment Python3: -

Checking Environment path helps easier to read code and convert the code to machinelanguage code. Setting up path helps system to access python and the libraries from it.



User variables for Aaron

Variable	Value
SSH_AGENT_PID	4716
SSH_AUTH_SOCK	/tmp/ssh-ZDqvfn4712/agent.4712
TEMP	%USERPROFILE%\AppData\Local\Temp
TMP	%USERPROFILE%\AppData\Local\Temp

System variables

Variable	Value
NUMBER_OF_P...	4
OS	Windows_NT
Path	C:\Windows\system32;C:\Windows;C:\...
PATHEXT	.COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;....

Fig 5.2:Setting up Environment Python3:

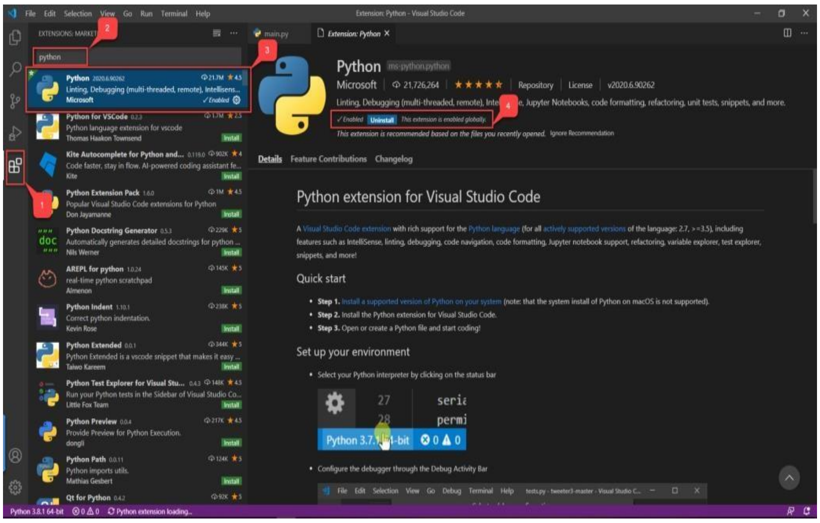
The path needed to set up for the system read and write operation of the code we write the path which is defined is different in various operating system and there version this process followed only on windows.

5.2 Code Editor (Visual Studio Code)

Visual Studio Code is most famous open-source Code Editor. Modern Era started using Vs code. Which made code much easy and system compatible very light weight software which uses very less RAM and most useful thing Vs code as many Extensions which gives suggestions and automation code

Vs code as terminal which provide strong communication with system and user support GIT-HUB can upload code using terminal. Vs code support all programming language

Fig 5.2: Code editor


File Edit Selection View Go Run Terminal Help
Extension: Python - Visual Studio Code
EXTENSIONS: MARKET
python
main.py
Extension: Python
1
2
3
4
Install
Uninstall
Details Feature Contributions Changelog
Repository License
Ignore Recommendation

Python 2020.6.90262 21.7M ★4.5
Linting, Debugging (multi-threaded, remote), Intellisens...
Microsoft ✓Enabled

Python for VSCode 0.2.3 1.7M ★2.5
Python language extension for vscode
Thomas Haakon Townsend

Kite Autocomplete for Python and... 0.119.0 902K ★4
Code faster, stay in flow. AI-powered coding assistant fe...
Kite

Python Extension Pack 1.6.0 1M ★4.5
Popular Visual Studio Code extensions for Python
Don Jayamanne

Python Docstring Generator 0.5.3 229K ★5
Automatically generates detailed docstrings for python ...
Nils Werner

AREPL for python 1.0.24 145K ★5
real-time python scratchpad
Almenon

Python Indent 1.10.1 238K ★5
Correct python indentation.
Kevin Rose

Python Extended 0.0.1 344K ★5
Python Extended is a vscode snippet that makes it easy ...
Taiwo Kareem

Python Test Explorer for Visual Stu... 0.4.3 148K ★4.5
Run your Python tests in the Sidebar of Visual Studio Co...
Little Fox Team

Python Preview 0.0.4 217K ★4.5
Provide Preview for Python Execution.
dongli

Python Path 0.0.11 124K ★5
Python imports utils.
Mathias Gesbert

Qt for Python 0.4.2 92K ★5

Python ms-python.python
Microsoft | 21,726,264 | ★★★★★ | Repository | License | v2020.6.90262
Linting, Debugging (multi-threaded, remote), Inte... e, Jupyter Notebooks, code formatting, refactoring, unit tests, snippets, and more.
✓Enabled Uninstall This extension is enabled globally.
This extension is recommended based on the files you recently opened.

Python extension for Visual Studio Code

A Visual Studio Code extension with rich support for the Python language (for all actively supported versions of the language: 2.7, >=3.5), including features such as IntelliSense, linting, debugging, code navigation, code formatting, Jupyter notebook support, refactoring, variable explorer, test explorer, snippets, and more!

Quick start

- Step 1. Install a supported version of Python on your system (note: that the system install of Python on macOS is not supported).
- Step 2. Install the Python extension for Visual Studio Code.
- Step 3. Open or create a Python file and start coding!

Set up your environment

- Select your Python interpreter by clicking on the status bar

- Configure the debugger through the Debug Activity Bar

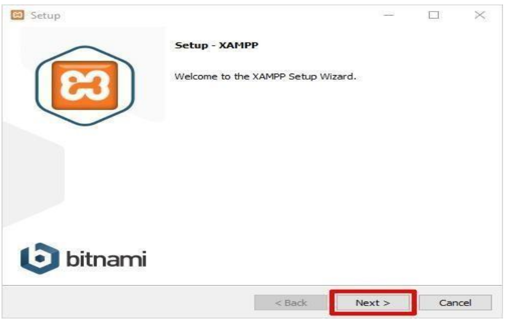
File Edit Selection View Go Debug Terminal Help tests.py - tweeter3-master - Visual Studio C...

Python 3.8.1 64-bit ⊗ 0 ⚠ 0 Python extension loading...

5.3 XAMPP:

During the installation process, you may come across warning pop-ups. But you would probably click ‘Yes’ to start the installation process. Soon after you click on the downloaded file, the XAMPP setup wizard will open. Now click on the ‘Next’ Button to proceed.

Next, you need to check the components which you want to install and can uncheck or leave as it is which you don’t want to install.



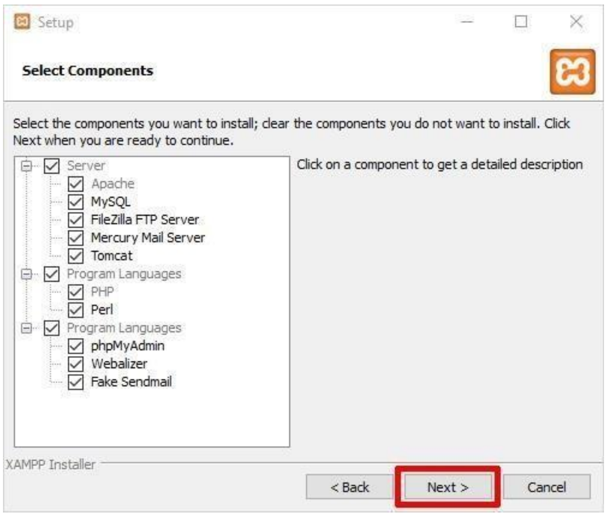
Setup - XAMPP

Welcome to the XAMPP Setup Wizard.

Fig 5.3:XAMPP

You can see there are a few options which are light grey in color. These are the options which are necessary to run the software and will automatically be installed. Now click on the‘Next’ button to continue.

Fig 5.3 XAMPP control Panel



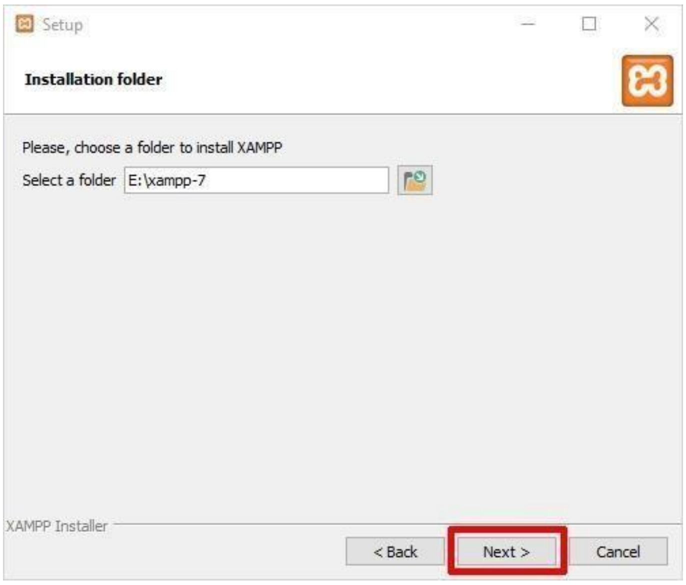
Select Components

Select the components you want to install; clear the components you do not want to install. Click Next when you are ready to continue.

- ☑ Server
  - ☑ Apache
  - ☑ MySQL
  - ☑ FileZilla FTP Server
  - ☑ Mercury Mail Server
  - ☑ Tomcat
- ☑ Program Languages
  - ☑ PHP
  - ☑ Perl
- ☑ Program Languages
  - ☑ phpMyAdmin
  - ☑ Webalizer
  - ☑ Fake Sendmail

Click on a component to get a detailed description

Now you need to choose the folder where you want to install the XAMPP. You can choose the default location or you can choose any location of your choice and choose the 'Next' button to move ahead.



Please, choose a folder to install XAMPP

Select a folder E:\xampp-7

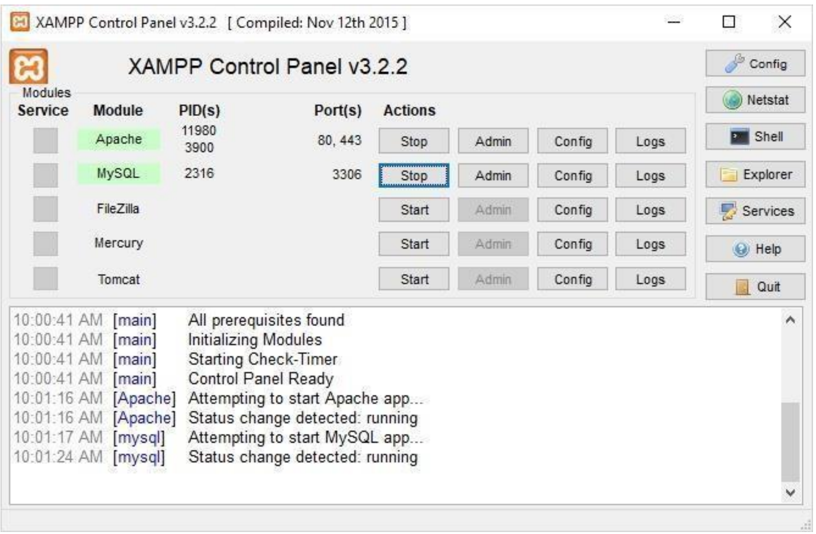
Fig 5.3: Installation floder

Now will see a window showing you information about Bitnami. Simply click on the 'Next' button to move further. However, if you wish to learn more about the Bitnami, then you may check the box saying 'Learn more about Bitnami for XAMPP.' Basically Bitnami is for installing opensource applications i.e. WordPress, Joomla etc on yournewly installed XAMPP.

Now you'll see another window with a message "Setup is now ready to begin installing XAMPP on your computer" like shown below. You just have to hit the 'Next' button to proceed.

Now just be patient and wait for the installation to complete. Once the installation is completed, you will be asked whether you would like to start the control panel now or not, displaying the message "Do you want to start the control panel now?" Check the box and click on the 'Finish' button and see if the XAMPP is working fine.

As soon as you will click on the Finish button in the final step of install XAMPP process, you will be asked to select the preferred language between English and German. It is up to you which language you choose. After that click on the 'Save' button to confirm your selected language. As of now, I am choosing the English language.If the entire process of XAMPP installation went correctly, then the control panel would open smoothly. Now click on the 'Start' button corresponding to Apache and MySQL.


XAMPP Control Panel v3.2.2 [Compiled: Nov 12th 2015]
XAMPP Control Panel v3.2.2
Modules
Config
Netstat
Shell
Explorer
Services
Help
Quit

Service	Module	PID(s)	Port(s)	Actions			
□	Apache	11980 3900	80, 443	Stop	Admin	Config	Logs
□	MySQL	2316	3306	Stop	Admin	Config	Logs
□	FileZilla			Start	Admin	Config	Logs
□	Mercury			Start	Admin	Config	Logs
□	Tomcat			Start	Admin	Config	Logs

```
10:00:41 AM  [main]    All prerequisites found
10:00:41 AM  [main]    Initializing Modules
10:00:41 AM  [main]    Starting Check-Timer
10:00:41 AM  [main]    Control Panel Ready
10:01:16 AM  [Apache]  Attempting to start Apache app...
10:01:16 AM  [Apache]  Status change detected: running
10:01:17 AM  [mysql]   Attempting to start MySQL app...
10:01:24 AM  [mysql]   Status change detected: running
```

Fig 5.3 XAMPP Control Panel

That's it. You have successfully installed XAMPP on Windows 10. Or say you have successfully installed XAMPP locally. Once you start the modules, you should see their status turn to green. Whereas, on the right side, you can see the process ID number and port numbers every module is using. You're good to go now.

5.4 FLASK INSTALLATION PROCEDURE

Install virtualenv on Windows

1. Open the command line with administrator privileges.

2. Use **pip** to install virtualenv on Windows:

```
py -2 -m pip install virtualenv
```

Step 2: Create an Environment

1. Make a separate directory for your project:

```
mkdir <project name>
```

2. Move into the directory:

```
cd <project name>
```

3. Within the directory, create the virtual environment for Flask. When you create the environment, a new folder appears in your project directory with the environment's name.

Create an Environment in Windows

- **For Python 3:**

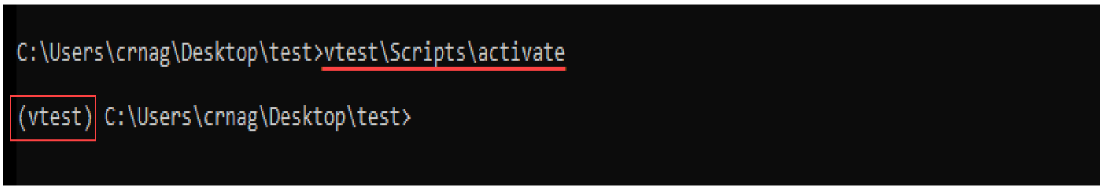
Create and name a virtual environment in Python 3 with:

```
py -3 -m venv <name of environment>
```

Activate the Environment on Windows

For Windows, activate the virtual environment with:

```
<name of environment>Scriptsactivate
```



```
C:\Users\crnag\Desktop\test>vtest\Scripts\activate

(vtest) C:\Users\crnag\Desktop\test>
```

Fig 5.4 Flask Installation Procedure

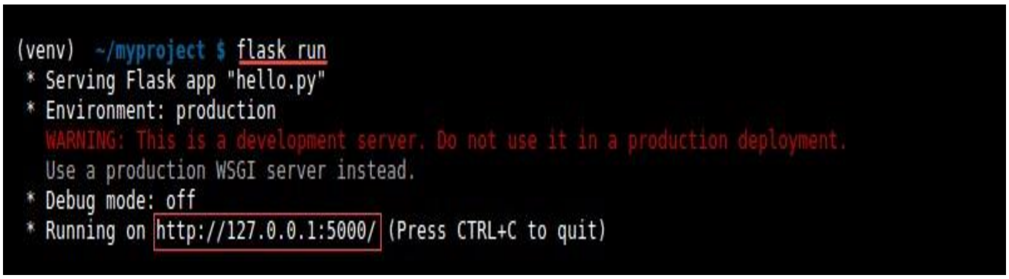
Install Flask

Install Flask within the activated environment using **pip**:

```
pip install Flask
```

Run the Flask application with:

```
flask run
```

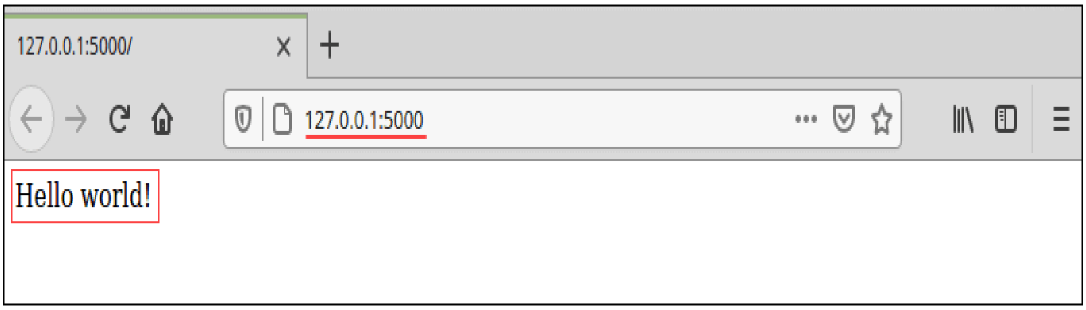


```
(venv)  ~/myproject $ flask run
 * Serving Flask app "hello.py"
 * Environment: production
   WARNING: This is a development server. Do not use it in a production deployment.
   Use a production WSGI server instead.
 * Debug mode: off
 * Running on http://127.0.0.1:5000/ (Press CTRL+C to quit)
```

fig 5.4: Flask Run

The output prints out a confirmation message and the address.

8. Copy and paste the address into the browser to see the project running:



Hello world!

5.5 MODULES

- Domain Address
- Web Hosting
- Front End vs Back End

Modules Description

Domain Address:

An Internet Protocol, or IP, address is different than a domain name. The IP address is an actual set of numerical instructions. It communicates exact information about the address in a way that is useful to the computer but makes no sense to humans. The domain name functions as a link to the IP address. Links do not contain actual information, but they do point to the place where the IP address information resides. It is convenient to think of IP addresses as the actual code and the domain name as a nickname for that code. A typical IP address looks like a string of numbers. It could be 232.17.43.22, for example. However, humans cannot understand or use that code. To summarize, the domain name is a part of the URL, which points to the IP address.

.

WEB Hosting:

Web hosting is a service that allows organizations and individuals to post a website or web page onto the Internet. A web host, or web hosting service provider, is a business that provides the technologies and services needed for the website or webpage to be viewed in the Internet. Websites are hosted, or stored, on special computers called servers. When Internet users want to view your website, all they need to do is type your website address or domain into their browser. Their computer will then connect to your server and your webpages will be delivered to them through the browser.Most hosting companies require that you own your domain in order to host with them. If you do not have a domain, the hosting companies will help you purchase one.

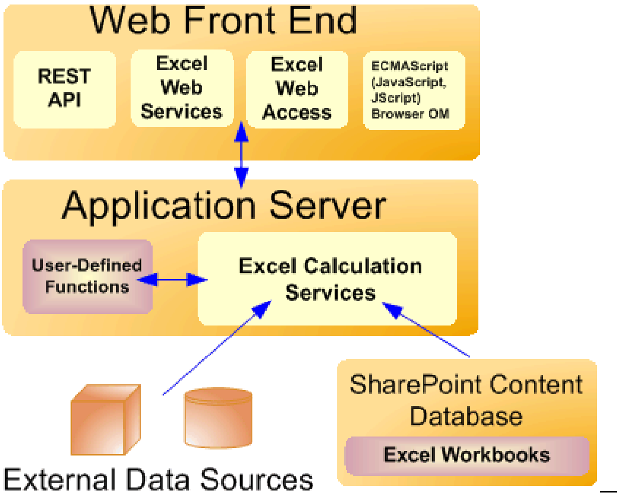


Fig 5.5: Web Hosting

Front End vs Back End

The front end of a website or application refers to the part that users see and interact with. That said, front-end development refers to the creation and management of the front end of a website or application. This includes making sure the various coding is working and being actively presented to those interacting with a webpage. For example, a front-end developer would work to ensure all of a website's fonts, menus and buttons are in proper working order for users to interact with. This means that while web design is focused on the look of a website, front-end development is the means by which these designs and "looks" are shown on the website itself.

- Implement a website or application's visual elements
- Use responsive design in the creation of a website or application's user interface
- Test the website or application for usability

- Troubleshoot any code that isn't working
- Improve a website or application's visual architecture
- Modify website and application interfaces
- Collaborate with back-end developers

Back-end development refers to the behind-the-scenes of a website or application that isn't visible to a user. In other words, it's the storage and communication between a website or application's database and browser. The three components of a back end include the server, application and the database.

- Analyze data, processes and codes
- Participate in training to stay on top of current practices
- Collaborate with other team members as well as front-end developers
- Report data to necessary parties.
- Create functional APIs and site core
- Monitor server status
- Design user interface

5.6 SHUFFLING ALGORITHM

Shuffling algorithm is suitable and very effective way to implement for randomization of stored questions. This algorithm checks for duplication and repetation of the randomly generated questions. The nature of this algorithm is as follows, for a set of N (the total number of questions in the database) elements for generation a random alteration of the numbers -N, the algorithm goes as follows:

Step:Create an array of N locations.

Step2: Generate a random number.

Step3: if(loc==)

Store generated number. Else compare the generated number with previous number in the array.

If match found go to step 2; else store the number in next location.

Step4: Repeat step 2 for N numbers.

Step5: Select questions from database matching with values from array location one by one.

CHAPTER 6

SAMPLE SOURCE CODE

1) Flask:

```
import sentry_sdk

from sentry_sdk.integrations.flask import FlaskIntegration
from flaskapp import create_app
from        flaskapp.config        import        DevelopmentConfig
sentry_sdk.init(
   dsn=
   "https://1fdf413ccfcc4a249f79519bfc269965@o374456.ingest.sentry.io/5192531",
   integrations=[FlaskIntegration()],
)
app = create_app(config_class=DevelopmentConfig)
@app.after_request
def add_header(response):
   """
   Add headers to both force latest IE rendering engine or Chrome Frame,and
   also to cache the rendered page for 10 minutes.
   """
   response.headers["X-UA-Compatible"]    =    "IE=Edge,chrome=1"
   response.headers["Cache-Control"] = "must-revalidate, max-age=0"
   return response
if__name__==   "__main__":
   app.run()
from flask import json
   from flaskapp import models
   from   test.main.base_classes   import   BaseUser
   from test.main.utils import test_post_request
class CourseTestCase(BaseUser):
    def    test_delete_course(self):
       BaseUser.setUp(self)
       self.login()
       # adding new course
       new_course = dict(course="maths")
       _,     course     =     test_post_request(self,     "/course/new",     new_course,
                              models.Course, 1)
       #            Checking            repr            method
       self.assertEqual(str(course), "Course(maths)")

       # adding another course
       new_course = dict(course="science")
       _,     course     =     test_post_request(self,     "/course/new",     new_course,
                              models.Course, 2)
       #            cheking            repr            method
       self.assertEqual(str(course), "Course(science)")

       #   Delete   course
       delete_list = [1, 2]
       self.client.post(
          "/course/delete/",
    data=json.dumps(delete_list),
          headers={"Content-Type": "application/json"},
       )
       c1 = self.db.session.query(models.Course).get(1)
       c2 = self.db.session.query(models.Course).get(2)
       self.assertIsNone(c1)
       self.assertIsNone(c2)
import re
from bs4 import BeautifulSoup
from flaskapp import models
from test.main.base_classes import BaseUser
from test.main.utils import test_post_request
class UserAccountTestCase(BaseUser):
    def test_update_account(self):
        self.login()
        update_user = dict(username="nr.nutron",
                           email="nutron@gmail.com",
                           submit="submit")
        test_post_request(self, "/account", update_user, models.User, 1)
    def test_conflicting_username(self):
        # add dummy user
        new_user = dict(
            username="nr.nutron",
            email="nutron@gmail.com",
 password="nutron@101",
            confirm_password="nutron@101",
            submit="Sign Up",
        )
        test_post_request(self, "/register", new_user, models.User, 2)
        self.login()
        # test changing current_user's username with already registered user's username
        current_user = dict(username="nr.nutron",
                            email="proton@gmail.com",
                            submit="submit")
        self.assertRaises(
            AssertionError,
            test_post_request,
            self,
            "/account",
            current_user,
            models.User,
            1,
        )

    def  test_forgot_password(self):
        # test valid user
        with self.mail.record_messages() as outbox:#
            test with valid token
            data = dict(email="proton@gmail.com")
response, _ = test_post_request(self,  "/reset_password", data)
            self.assertIn(
                b"An email has been sent with instructions to reset your password.",response.data,
            )
            self.assertEqual(1, len(outbox))
            self.assertEqual("Password Reset Request", outbox[0].subject)
            self.assertEqual("proton@gmail.com",  outbox[0].recipients[0])
            regex = r"/reset_password/([^/]+) \)"
            link = re.search(regex, outbox[0].body)
            self.assertIsNotNone(link)
            token = link.group(1)
            new_password = dict(password="VeryDumb@123",
                                confirm_password="VeryDumb@123")
            response, _ = test_post_request(self, "/reset_password/" + token,
                                            new_password)
            self.assertIn(
                b"Your password has been updated! You are now able to log in",response.data,
            )
            user                =                dict(
                email="proton@gmail.com",
                password="VeryDumb@123",
                remember=True,
                submit="Login",
            )
            test_post_request(self, "/login", user)
            response = self.client.get("/home")
            soup = BeautifulSoup(response.data, "lxml")
            title = soup.find(("h1", {"class": "header"}))
            self.assertEqual(title.contents[0],    "Recent")
            self.logout()
        # test invalid token
        response,     _     =     test_post_request(self,      "/reset_password/fakeToken",
                                  new_password)
        self.assertIn(b"<title>SetNow : Reset Password</title>", response.data)#
        FIXME: add flash in frontend: enable this test once fixed
        # self.assertIn(b"That is an invalid or expired token", response.data)#
        test unregistered email
        data = dict(email="doesn't@exit.com")
        response, _ = test_post_request(self, "/reset_password", data)
        self.assertIn(
            b"There  is  no  account  with  that  email.  You  must  register  first.",
            response.data,
        )
```

2) Adding question

```
from flaskapp.models import Question
from test.main.base_classes import BaseUnit
from test.main.utils import test_post_request
class AddQuestionTestCase(BaseUnit):
  def test_add_sub_question(self):
    # Test valid datanew_question
    = dict(
      question="Is it okay?",
      mark=8,
      difficulty="Easy",
      cognitive_level="Application",
      imp=True,
      submit="submit",
    )
    _, question = test_post_request(self,
                  "/course/1/unit/1/question/sub/new/",
                  new_question, Question, 1)

    # Testing if repr method is working
    self.assertEqual(
      str(question),
      "Question(Is it okay?, 8, Easy, Application, sub, True)",
    )
 #   Test   invalid   data
    new_question = dict(
      question="Isn't it okay?",
      mark=None,
      imp=False,
      difficulty="Easy",
      cognitive_level="Application",
      submit="submit",
    )

    self.assertRaises(
      AttributeError,
      test_post_request,
      self,
      "/course/1/unit/1/question/sub/new/",
      new_question,
      Question,
      2,
    )

  def   test_add_mcq_question(self):
    # test valid data
    new_mcq     =     dict(
      question="Rate it",
      mark=8,
      difficulty="Easy",
      cognitive_level="Application",
      imp=None,
      option1="10",
      option2="9",
      option3="8",
      option4="7",
    )
    _, mcq = test_post_request(self, "/course/1/unit/1/question/mcq/new/",
                           new_mcq, Question, 1)
    # test repr method
    self.assertEqual(
      str(mcq),
      "Question(Rate it, 8, Easy, Application, mcq, False)",
    )
    # test invalid data
    new_mcq = dict(
      question=None,
      mark=8,
      difficulty="Easy",
      cognitive_level="Application",
      imp=True,
      submit="submit",
      option1="A",
      option2="B",
      option3="C",
      option4="D",
    )

    self.assertRaises(
      AttributeError,
      test_post_request,
      self,
      "/course/1/unit/1/question/mcq/new/",
      new_mcq,
      Question,
      2,
    )
```

3) Generating Question paper:

```
from flask import json
from flaskapp.models import Paper
from test.main.base_classes import BaseMCQQuestion
from  test.main.base_classes  import  BaseSubQuestion
from test.main.utils import test_post_request
class  PaperGenerateRequest(BaseSubQuestion,  BaseMCQQuestion):
    def test_paper_generate_request(self):
        data = dict(questions=[1, 2, 3], total_marks=30)
        response = self.client.post(
            "/course/1/papers/generate/request",
            data=json.dumps(data),
            headers={"Content-Type": "application/json"},
        )
        # Message will be platform specific so just assert target redirection URL.self.assertIn(
            b"/course/1/papers/generate/form/",
            response.data,
        )

    def        test_handle_conflicting_questions(self):
        data = dict(mcq={
            "ask": [1, 3],
            "nask": [2, 4]
        },
                    sub={
                        "ask": [1, 3],
                        "nask": [2, 4]
                    })
        response         =         self.client.post(
            "/papers/handle/conflicts",
            data=json.dumps(data),
            headers={"Content-Type": "application/json"},
        )
        data1 = json.loads(response.get_data(as_text=True))
        self.assertEqual(data1["status"], "OK")

    def  test_mark_distribution_form(self):
        self.test_paper_generate_request()
        data = {
             "Unit:01": "30",
            "Knowledge": "10",
            "Comprehension": "10",
            "Application": "10",
            "Easy": "10",
            "Medium": "10",
            "Hard": "10",
            "Que.1.A": "5",
            "Que.2.A": "5",
            "Que.2.B": "5",
            "Que.3.A": "5",
            "Que.3.B": "5",
            "Que.3.C": "5",
            "sub": 15,
            "mcq": 15,
        }
        response, _ = test_post_request(self,
                                    "/course/1/papers/generate/form/",
                                    data)
        self.assertIn(b"<title>Mark Distribution</title>", response.data)
        response = self.client.post(
            "/course/1/papers/confirm/template/",
            data=json.dumps(dict(status="OK")),
            headers={"Content-Type": "application/json"},
        )
   self.assertIn(
            b"/course/1/papers/generate/",
            response.data,
        )
    def test_generate_and_confirm_paper(self):
        self.test_paper_generate_request()
        self.test_mark_distribution_form()
        data = {
            "name": "paper1",
            "term": "winter",
            "exam_date": "2020-10-15",
            "time_limit": "2",
        }
        test_post_request(self, "/course/1/papers/generate/", data, Paper, 1)

        # testing gerenated paper
        with self.mail.record_messages() as outbox:
            data = {"generate": "YES", "examiner_email": "proton@gmail.com"}
            test_post_request(self, "papers/confirm/1", data=data)
            self.assertEqual(1, len(outbox))
            self.assertEqual("Paper for paper1", outbox[0].subject)

    def test_pdf_paper(self):
        self.test_paper_generate_request()
```

```
  self.test_mark_distribution_form()
        self.test_generate_and_confirm_paper()
        response = self.client.get("/papers/1")
        self.assertIn(b"Answer the following Multiple choice questions",response.data)
```

4) Responses

```
from flaskapp import models
from test.main.base_classes import BaseUser
from test.main.utils import test_post_request
class AboutUsTestCase(BaseUser):
    def test_about_us(self):
        response = self.client.get("/about-us")
        self.assertIn(
            b"Welcome to SetNow, We're dedicated to giving you the very best of our service.",
            response.data, )
        self.assertIn(
            b"This website is created by students of DA-IICT (Gandhinagar, Gujrat).",
            response.data,
        )
        self.assertIn(
            b"This effort was made under the guidence of Prof. Saurabh Tiwari.",response.data,
        )
 self.assertIn(b"Our Team", response.data)
        self.assertIn(b"Niraj Kamdar [201701184]", response.data)
        self.assertIn(b"UI/UX designer", response.data)
        self.assertIn(b"Nikunj Kambariya [201701191]", response.data)
        self.assertIn(b"UI/UX designer", response.data)
        self.assertIn(b"Jaymin Parmar [201701203]", response.data)
        self.assertIn(b"Quality assurance engineer", response.data)
        self.assertIn(b"Team Back-end", response.data)
```

CHAPTER 7

SYSTEM TESTING

The purpose of testing is to discover errors. Testing is the process of trying to discover every conceivable fault or weakness in a work product. It provides a way to check the functionality of components, subassemblies, assemblies and/or a finished product.

7.1 TYPES OF TESTS

Unit testing

Unit testing involves the design of test cases that validate that the internal program logic is functioning properly, and that program inputs produce valid outputs. All decision branches and internal code flow should be validated. It is the testing of individual software units of the application .it is done after the completion of an individual unit before integration. This is a structural testing, that relies on knowledge of its construction and is invasive. Unit tests perform basic tests at component level and test a specific business process, application, and/or system configuration.

Integration testing

Integration tests are designed to test integrated software components to determine if they actually run as one program. Testing is event driven and is more concerned with the basic outcome of screens or fields. Integration tests demonstrate that although the components were individually satisfaction, as shown by successfully unit testing, the combination of components is correct and consistent. Integration testing is specifically aimed at exposing the problems that arise from the combination of components.

Functional test

Functional tests provide systematic demonstrations that functions tested are available as specified by the business and technical requirements, system documentation, and user manuals.

Functional testing is centered on the following items:

Valid Input	: identified classes of valid input must be accepted.
Invalid Input	: identified classes of invalid input must be rejected.

Functions : identified functions must be exercised.

Output : identified classes of application outputs must be exercised.

Systems/Procedures: interfacing systems or procedures must be invoked. Organization and preparation of functional tests is focused on requirements, key functions, or special test cases. In addition, systematic coverage pertaining to identify Business process flows; data fields, predefined processes, and successive processes must be considered for testing. Before functional testing is complete, additional tests are identified and the effective value of current tests is determined.

System Test

System testing ensures that the entire integrated software system meets requirements. It tests a configuration to ensure known and predictable results. An example of system testing is the configuration oriented system integration test. System testing is based on process descriptions and flows, emphasizing pre-driven process links and integration points.

White Box Testing

White Box Testing is a testing in which in which the software tester has knowledge of the inner workings, structure and language of the software, or at least its purpose. It is purpose. It is used to test areas that cannot be reached from a black box level.

Black Box Testing

Black Box Testing is testing the software without any knowledge of the inner workings, structure or language of the module being tested. Black box tests, as most other kinds of tests, must be written from a definitive source document, such as specification or requirements document, such as specification or requirements document. It is a testing in which the software under test is treated, as a black box .you cannot “see” into it. The test provides inputs and responds to outputs without considering how the software works.

Unit Testing: Unit testing is usually conducted as part of a combined code and unit test phase of the software lifecycle, although it is not uncommon for coding and unit testing to be conducted as two distinct phases.

Field testing will be performed manually and functional tests will be written in detail.

Test objectives

- All field entries must work properly.
- Pages must be activated from the identified link.
- The entry screen, messages and responses must not be delayed.

Features to be tested

- Verify that the entries are of the correct format
- No duplicate entries should be allowed
- All links should take the user to the correct page.

Integration Testing

Software integration testing is the incremental integration testing of two or more integrated software components on a single platform to produce failures caused by interface defects. The task of the integration test is to check that components or software applications, e.g. components in a software system or – one step up – software applications at the company level – interact without error.

Test Results: All the test cases mentioned above passed successfully. No defects encountered.

Acceptance Testing

User Acceptance Testing is a critical phase of any project and requires significant participation by the end user. It also ensures that the system meets the functional requirements.
Test Results: All the test cases mentioned above passed successfully. No defects encountered.

TEST STRATEGY clarifies the major tasks and challenges of a test project. It is created to inform project managers, testers, and developers about key issues of the testing process. This includes the testing objective, methods of testing new functions, total time and resources required for the project, and the testing environment. The test approach is typically covered in the test strategy. It is a process to find effective way to proceed with testing of particular application and feature.

TEST STRATEGY SPECIFIES:

- Role of every team member
- Environment setup required
- Testing tools needed
- Risks involved

TEST APPROACH explains the type of testing that will be performed on the project. A test approach considers the following:

1) Criteria for approach selection

2) Approach for organizing tests

3) Approach for executing tests.

Types:

1. Proactive: In this approach, test designing is started ASAP to discover bugs before build's availability.
2. Reactive: In this approach, QA is not started till development team has completed their work on the feature.

Usually, Proactive test approach is followed. Proactive test approach and effective teststrategymakes life easier of the tester.

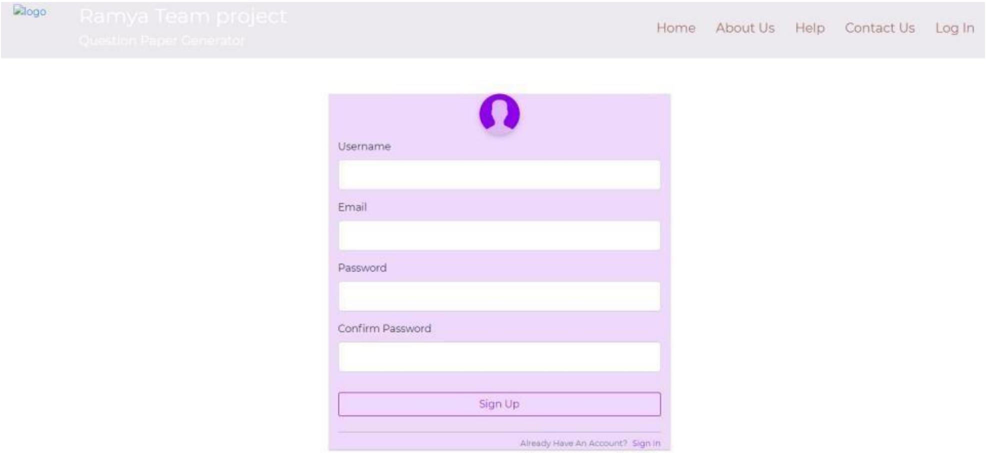
CHAPTER 8

EXPERIMENTAL RESULTS

8.1 RESULTS

REGISTER

Fig 8.1 Results



Sign In

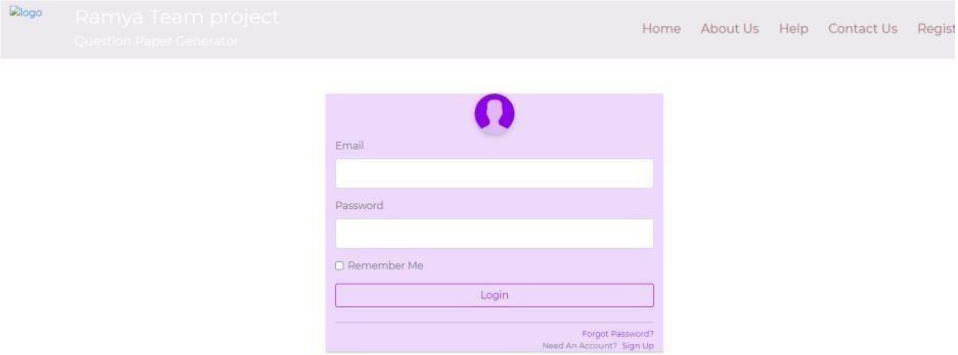


Fig 8.1 Sign in

Add Course

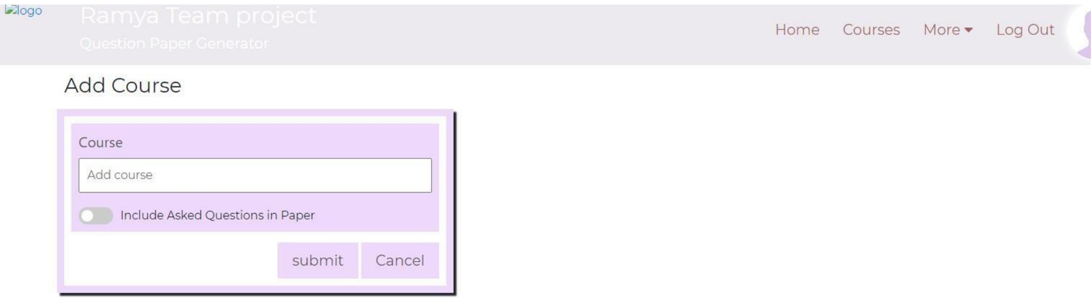
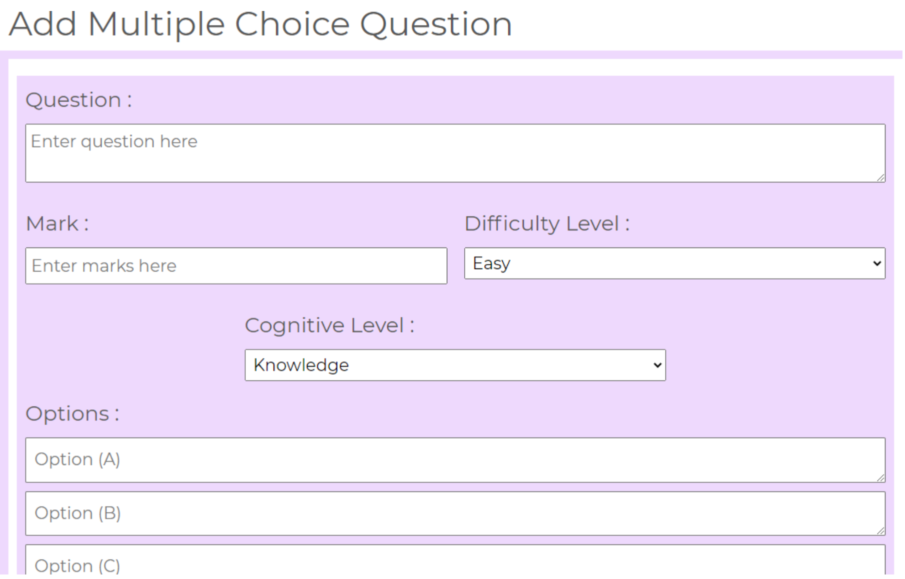


Fig 8.1 Add course

Adding Multiple choice question:



Add Multiple Choice Question

Question :

Enter question here

Mark :

Enter marks here

Difficulty Level :

Easy

Cognitive Level :

Knowledge

Options :

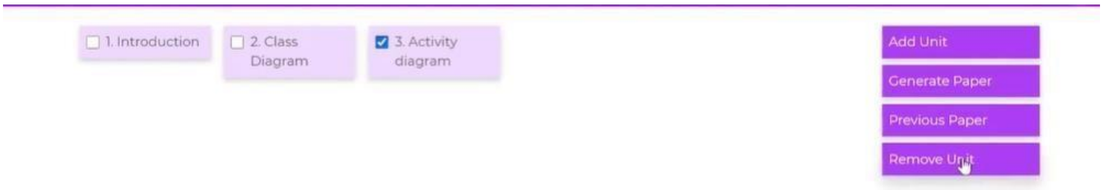
Option (A)

Option (B)

Option (C)

Fig 8.1 Adding multiple choice questions

Adding courses



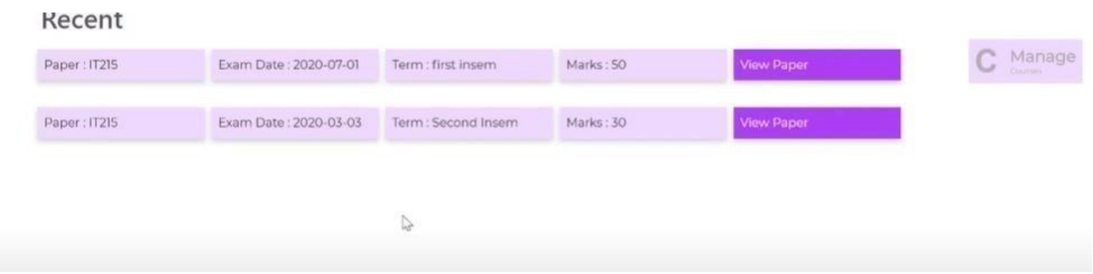
□ 1. Introduction

□ 2. Class Diagram

☑ 3. Activity diagram

Fig 8.1 Adding Courses

Question paper



Recent

Paper : IT215	Exam Date : 2020-07-01	Term : first insem	Marks : 50	View Paper
Paper : IT215	Exam Date : 2020-03-03	Term : Second Insem	Marks : 30	View Paper

Fig 8.1 Question paper

CHAPTER 9
CONCLUSION AND FUTURE WORK

CONCLUSION

Since the advent of the Mosaic browser and the subsequent rise of the web interface, internet technology has thrived through at least two major economic bubble bursts – in 2001 and in 2008. The latter collapse, while concurrent with the larger housing crisis, also marked the age of a new killer app – the mobile operating system. And in the years since then, the web page has gradually changed shape to accommodate its various new contexts. Now, the mobile app could eventually even displace the web.

The project we hosted online so that no user need not to install any application. We created simple and smooth. We made the bandwidth connection very smooth so that even with low 2g internet can work out.

The advantages of implementing an online examination system at your educational institution are plenty. Below we discuss some key, easily accessed advantages of switching to an online examination system at your school

The online exam system will take care of that hassle. Compactly automated. It saves more time. The distribution of the exam doesn't take you any time. Just upload the email addresses of your students and send them an invite. And after the exam they get their result instantly. It saves you money. You don't need to buy any paper.

Advantages of online examination. Online examination systems seek to efficiently evaluate the exam partakers thoroughly through a fully automated system that not only saves time butalso give fast results.

The students who agree that online examination is good has many advantages. Online examination can make the student’s life easier because they don’t need any paper and pen todo the examination.

Furthermore, online examination can be effective and efficient time to check the exams. Online examination can solve this problem. The instructor does not need to check all of the exams.

As the technology increases and with the modern world the way of approach need to be changed and improve day by day which real world .The question paper generator will be nextfuture generation approach for the upcoming students and modern world.

FUTURE WORK

It can be summarized that the future scope of the project circles around maintaining information regarding:

1.We can add printer in future.

2.We can give more advanced software for automatic question paper generator including morefacilities.

3.We will host the platform on online servers to make it accessible worldwide.

4.integrate multiple load balancers to distribute the loads of the system.

5.Implement the backup mechanism for taking backup of code based and database on regular basis on different servers.

The above mentioned points are the enhancements which can be done to increase the applicability and usage of the project.

Here we can maintain the records of branch and course.Also, it can be seen that nowadays the players are versatile I.e so there is a scope for introducing a method to maintain the automatic question paper generator. We have left all the options open so that if there is any other future requirement in the system by the user for the enchancement of the system then it is possible to implement them.

We hope that the project will serve its purpose for which it is developed there by underlining success of project.

CHAPTER 10

BILOGRAPHY

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[2] https://www.youtube.com/watch?v=L1AUgybPBLA&ab_channel=alphaTM

[3] Flask was created by Armin Ronacher of Pocoo, an international group of Python enthusiasts formed in 2004. According to Ronacher, the idea was originally an April Fool's joke that was popular enough to make into a serious application.

[4] Flask reference https://flask.palletsprojects.com/en/2.0.x/

[5] Js Documentation https://devdocs.io/javascript/

[6] Reference js https://www.youtube.com/watch?v=PkZNo7MFNFg&t=9544s

[7] Reference css https://www.youtube.com/watch?v=Edsxf_NBFrw&t=704s