A MINI PROJECTREPORT

ON

"Virtual Programming Lab"

Submitted in the partial fulfillment of the requirements for

The degree of

BACHELOR OF ENGINEERING IN COMPUTER ENGINEERING

By

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UNDER THE GUIDANCE OF

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Department of Computer Engineering
Saraswati College of Engineering, Kharghar, Navi Mumbai
University of Mumbai
2020-21

Saraswati College of Engineering, Kharghar

Vision:

To be universally accepted as autonomous center of learning in Engineering Education and Research.

Mission:

- To educate students to become responsible and quality technocrats to fulfil society and industry needs.
- To nurture student's creativity and skills for taking up challenges in all facets of life.

Department of Computer Engineering

Vision:

To be among renowned institution in Computer Engineering Education and Research by developing globally competent graduates.

Mission:

- To produce quality Engineering graduates by imparting quality training, hands on experience and value education.
- To pursue research and new technologies in Computer Engineering and across interdisciplinary areas that extends the scope of Computer Engineering and benefit humanity.

- To provide stimulating learning ambience to enhance innovative ideas, problem solving ability, leadership qualities, team-spirit and ethical responsibilities.

DEPARTMENT OF COMPUTER ENGINEERING

PROGRAM EDUCATIONAL OBJECTIVE'S

1. To embed a strong foundation of Computer Engineering fundamentals to identify, solve, analyze and design real time engineering problems as a professional or entrepreneur for the benefit of society.
2. To motivate and prepare students for lifelong learning & research to manifest global competitiveness.
3. To equip students with communication, teamwork and leadership skills to accept challenges in all the facets of life ethically.

DEPARTMENT OF COMPUTER ENGINEERING

PROGRAM OUTCOMES

1. Apply the knowledge of Mathematics, Science and Engineering Fundamentals to solve complex Computer Engineering Problems.
2. Identify, formulate and analyze Computer Engineering Problems and derive conclusion using First Principle of Mathematics, Engineering Science and Computer Science.
3. Investigate Complex Computer Engineering problems to find appropriate solution leading to valid conclusion.
4. Design a software System, components, Process to meet specified needs with appropriate attention to health and Safety Standards, Environmental and Societal Considerations.
5. Create, select and apply appropriate techniques, resources and advance Engineering software to analyze tools and design for Computer Engineering Problems.
6. Understand the Impact of Computer Engineering solution on society and environment for Sustainable development.
7. Understand Societal, health, Safety, cultural, Legal issues and Responsibilities relevant to Engineering Profession.
8. Apply Professional ethics, accountability and equity in Engineering Profession.
9. Work Effectively as a member and leader in multidisciplinary team for a common goal.
10. Communicate effectively within a Profession and Society at large.
11. Appropriately incorporate principles of Management and Finance in one's own Work.

12. Identify educational needs and engage in lifelong learning in a Changing World of Technology.

DEPARTMENT OF COMPUTER ENGINEERING

PROGRAMME SPECIFIC OUTCOME

1. Formulate and analyze complex engineering problems in computer engineering (Networking/Big data/ Intelligent Systems/Cloud Computing/Real time systems).
2. Plan and develop efficient, reliable, secure and customized application software using cost effective emerging software tools ethically.

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CERTIFICATE

*This is to certify that the requirements for the mini project report entitled "**Virtual Programming Lab**" have been successfully completed by the following students:*

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Mini Project Co-ordinator **Head of Department**

Prof. Arpita Saxena Prof. Sujata Bhairnallykar

DECLARATION

I declare that this written submission represents my ideas in my own words and where others ideas or words have been included. I have adequately cited and referenced the original sources. I also declare that I have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in my submission. I understand that any violation of the above will be cause for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.

1. Vinayak Kapale
2. Anil Sahu
3. Sanika Vidhate
4. Rhishikesh Chaughule

Date:

ACKNOWLEDGEMENT

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1. Vinayak Kapale
2. Anil Sahu
3. Sanika Vidhate
4. Rhishikesh Chaughule

ABSTRACT

VPL-Virtual Programming Lab is the easy way to manage programming assignments. Its features of editing, running and evaluation of programs makes learning process for students, and the evaluation task for teachers, easier than ever. Virtual labs is a web development technology. It does not require any additional infrastructural setup for conducting experiments at user premises. The simulations-based experiments can be accessed remotely via internet. This would help students in learning basic and advanced concepts through remote experimentation. VPL is an activity module that manage programming assignments and whose salient features are:

- Enable to edit the programs source code in the browser.
- Students can run interactively programs in the browser.
- Students can test their knowledge through online quiz and assignments.
- Even faculty members can do continuous assessment as per defined timeline and get feedback of conducted lab session

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CHAPTER 1

INTRODUCTON

The teaching of programming is essential for the development of computer applications and for evolution of technology. The assignments of the early programming courses usually present difficulties for students and need teacher's strong monitoring, for correction and overall orientation towards correct assessment. In this context, virtual learning environment is an important tool on how to teach (and learn) programming, One of these tools is VPL (Virtual Programming Lab) a plug-in developed specifically for Moodle (Modular Object-Oriented Dynamic Learning Environment). This tool allows to edit and execute programs, in a large range of languages, and enables automatic assessment and prompt feedback VPL stores historic results about compilation and implementation of the proposed problems, tracking the student's submissions.

The use of this tool implies a paradigm shift, for the student and mainly for the teacher. This is because the teacher must plan its activities accordingly, in order to prepare assignments, configure testing environments, and validation parametrization. These tasks take a lot of time. However, after assignments, less effort is required as the student does not need so much attention and assignments grading is much easier. It is also necessary to configure Moodle, register students, create groups and, of course, prepare assignments and test cases. APROG is organized in three different types of classes: theoretical(T), theoretical-practical (TP) and practical-laboratorial (PL).

1.2 OBJECTIVE AND PROBLEM STATEMENT

Objective of Proposed System:

- To reduce the work of students as they keep on writing manuals which takes ample of time.
- The efficient way is after assignments, less effort is required as the student does not need so much attention and assignments grading is much easier using this VPL.

Problem Statement:

To develop a centralized system which will help students in their academics, as well as integrate a platform over which students, teachers from all departments can interact with each other for the overall growth of students.

CHAPTER 2

METHODOLOGY

2.1 ALGORITHMIC DETAILS

Usecase Diagram:

2.2 HARDWARE AND SOFTWARE REQUIREMENTS

2.2.1 HARDWARE REQUIREMENTS

1. RAM : 512 MB RAM
2. Hard Drive : 40 GB Hard Drive
3. Processor : Intel Core 2 Processor

2.2.2 SOFTWARE REQUIREMENTS

- Languages Used:- CSS,HTML
- Platform:- Windows 10

The above specified requirements are minimum to run the application.

2.3 DESIGN DETAILS :

Functional Requirements:

In functional requirement, we describe the module we require to develop this project. Functional requirements should include functions performed by specific screens, outlines of workflows performed by the system and other business or compliance requirements the system must meet.

Interface Requirements:

- Field accepts valid data like in password entry it should be more than 8 character-length
- Field accepts numeric data entry
- Field only accepts dates before the current date

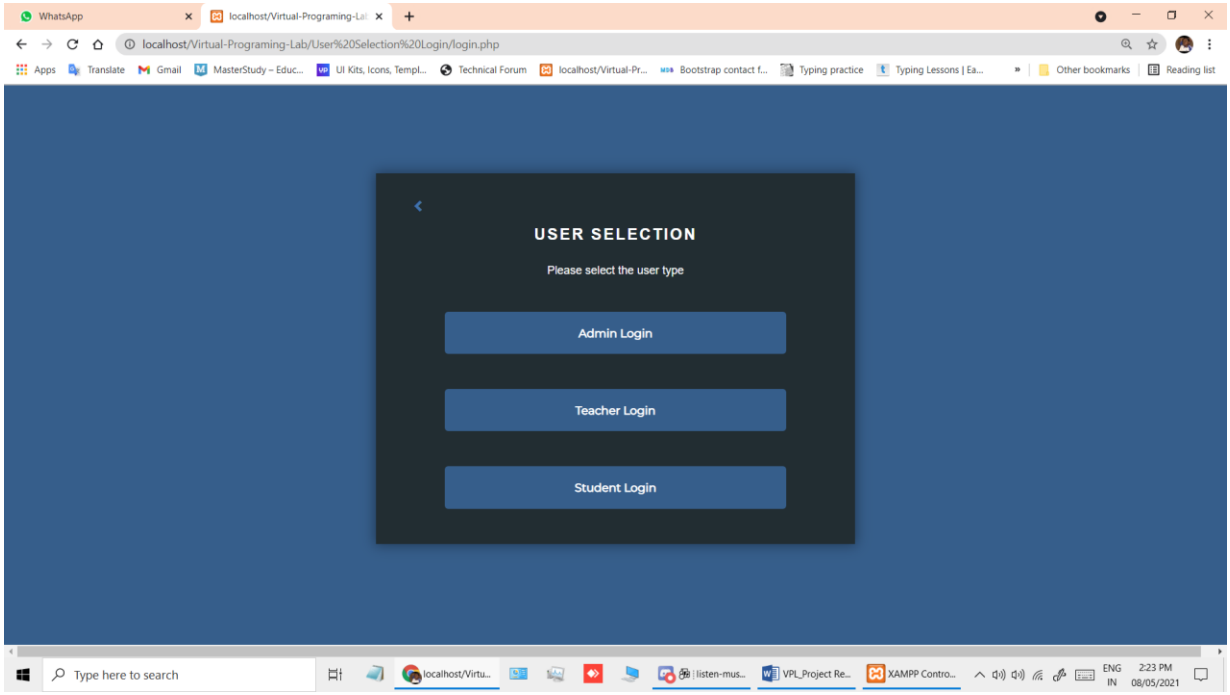
Security Requirements:

- Students, Teachers and Admin can use their own username and password for login.
- Admins and teachers can view the the experiments performed by students and can change the introduction related to experiments accordingly

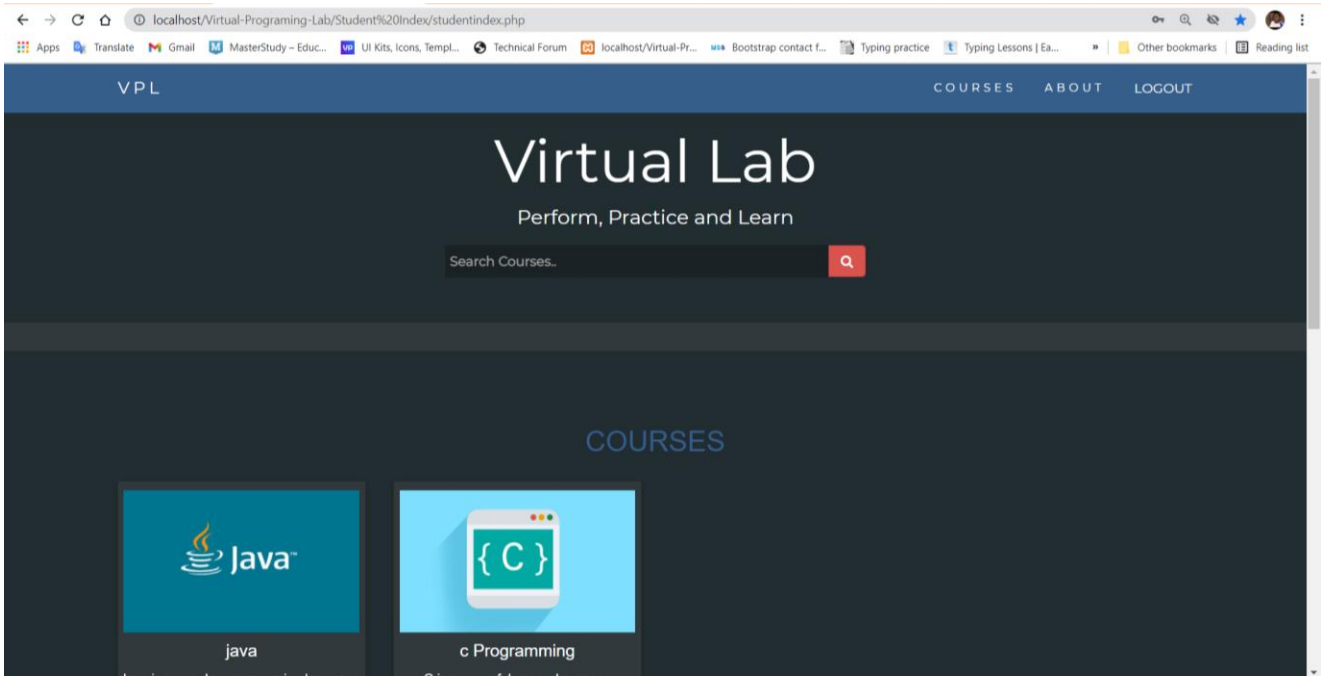
CHAPTER 3

IMPLEMENTATION AND RESULTS

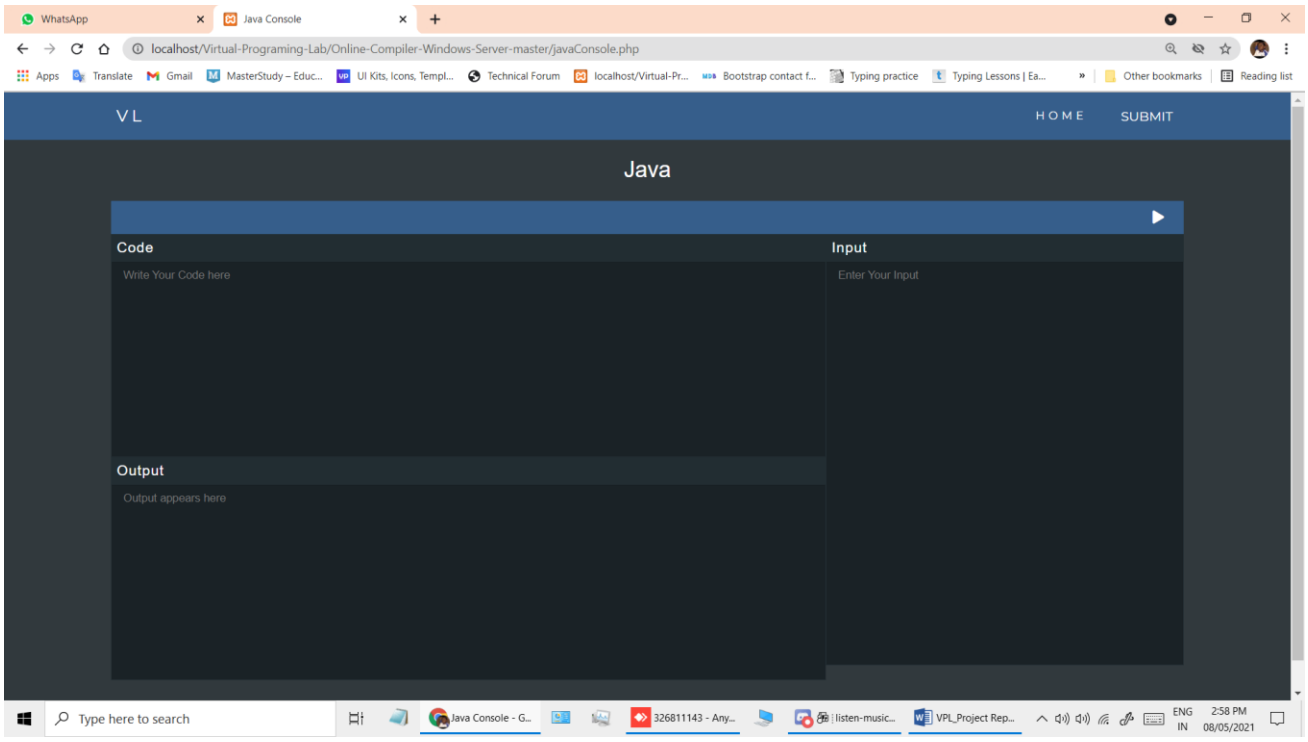
Login Page:



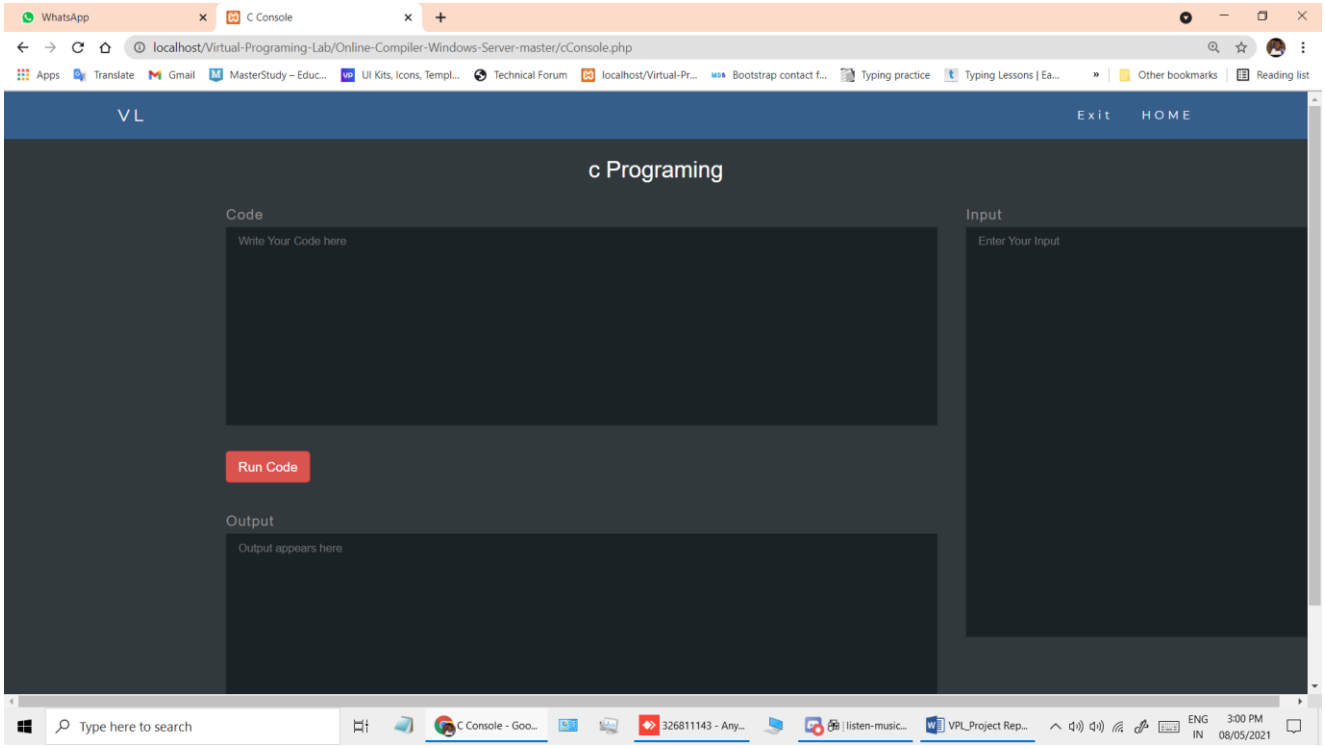
Student Homepage:



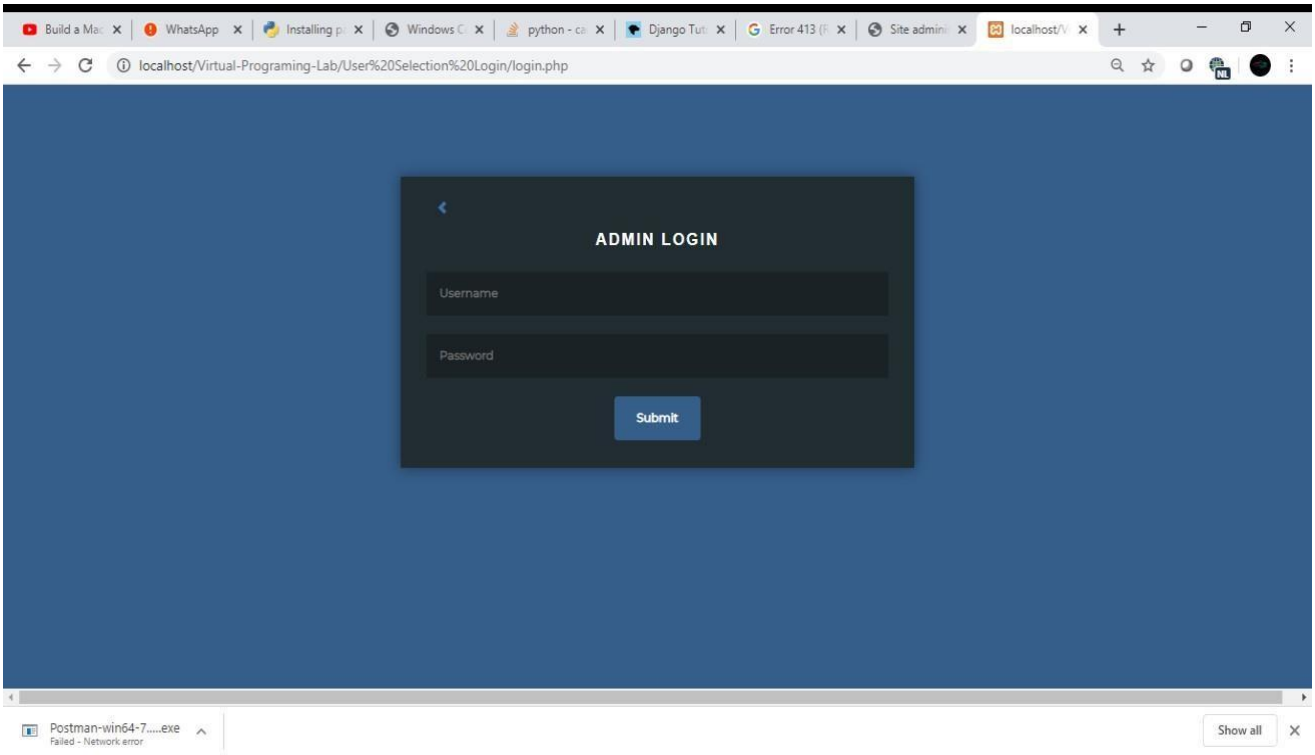
Java Compiler Page:

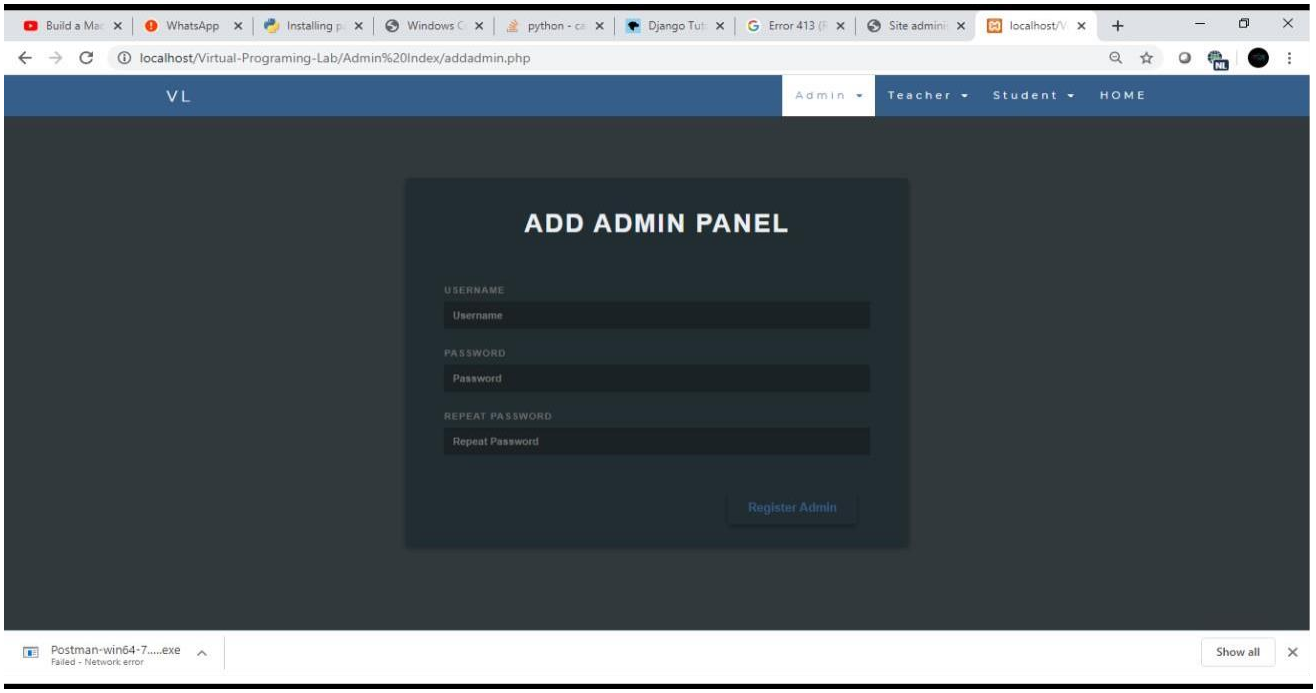


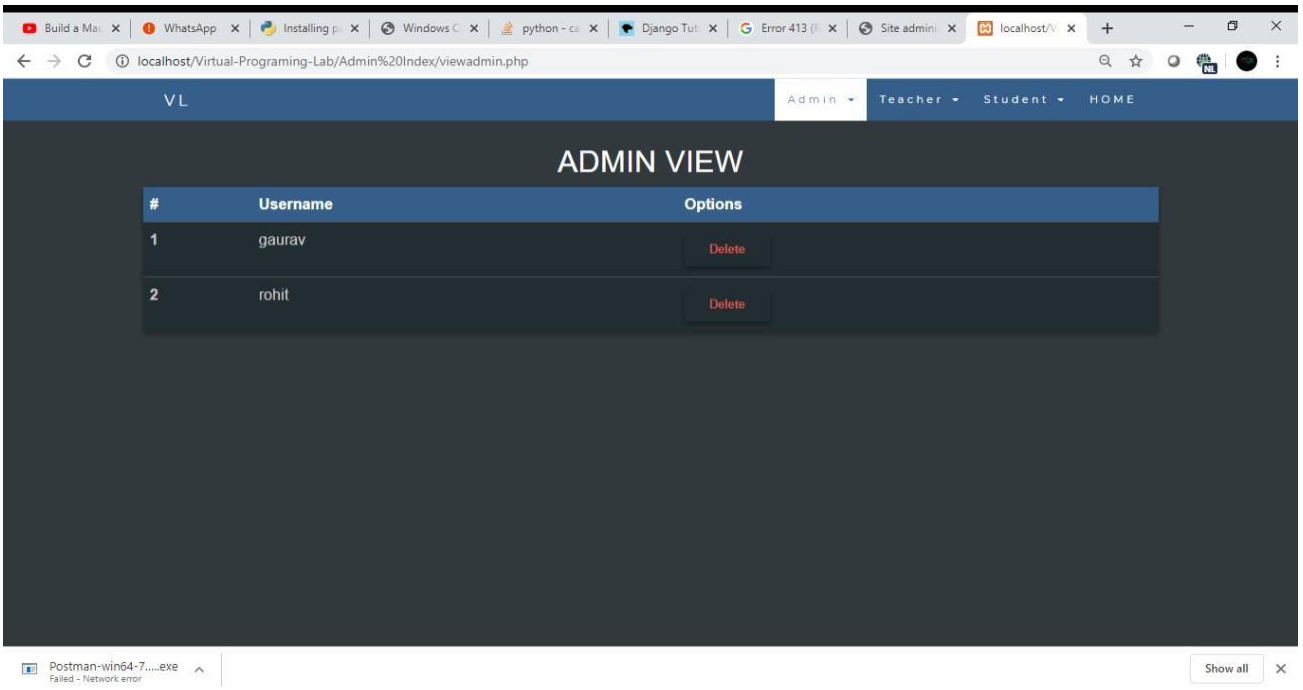
C programming compiler:



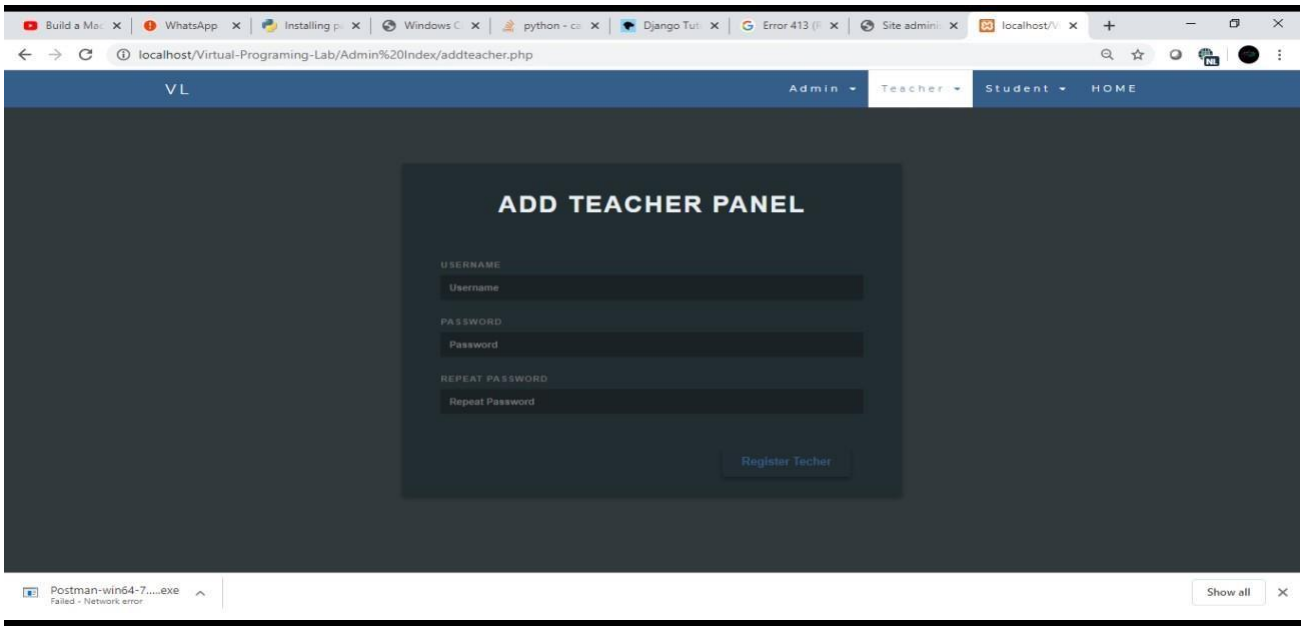
ADMIN LOGIN

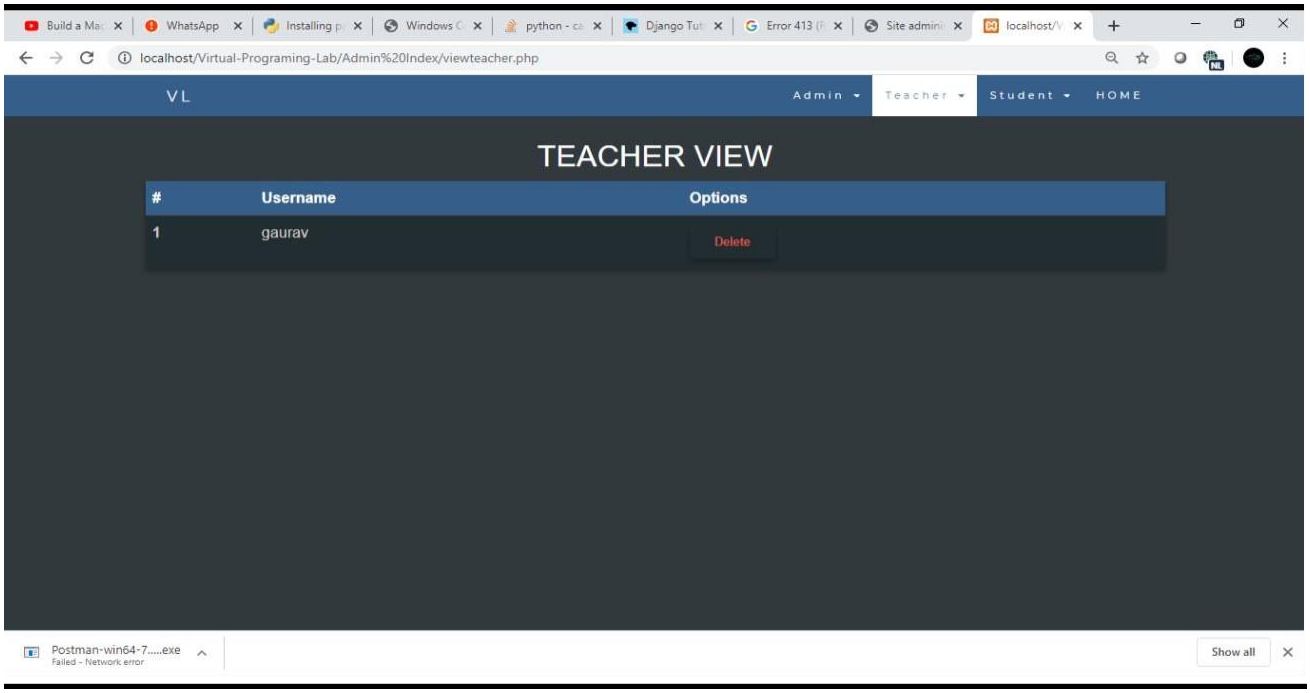

localhost/Virtual-Programing-Lab/User%20Selection%20Login/login.php
ADMIN LOGIN
Username
Password
Submit
Postman-win64-7.....exe
Failed - Network error
Show all

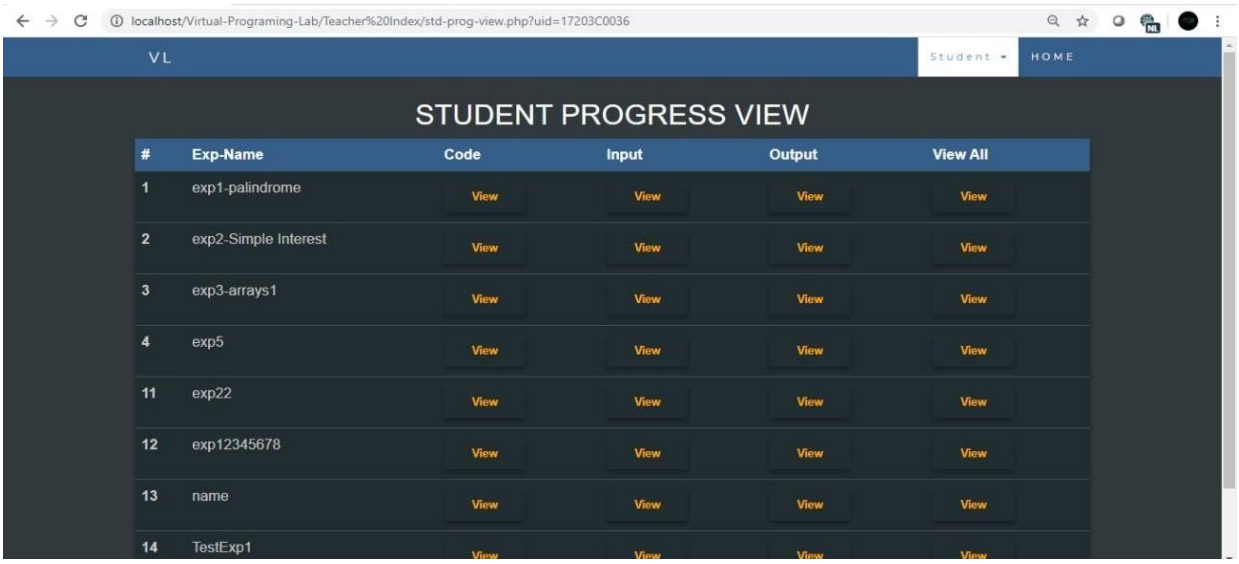

localhost/Virtual-Programing-Lab/Admin%20Index/addadmin.php
VL
Admin
Teacher
Student
HOME
ADD ADMIN PANEL
USERNAME
Username
PASSWORD
Password
REPEAT PASSWORD
Repeat Password
Register Admin
Postman-win64-7.....exe
Failed - Network error
Show all


localhost/Virtual-Programing-Lab/Admin%20Index/viewadmin.php
VL
Admin
Teacher
Student
HOME
ADMIN VIEW
Username Options
1 gaurav Delete
2 rohit Delete
Postman-win64-7.....exe
Failed - Network error
Show all

Teacher Panel:-






localhost/Virtual-Programing-Lab/Teacher%20Index/std-prog-view.php?uid=17203C0036
VL
Student
HOME
STUDENT PROGRESS VIEW
Exp-Name Code Input Output View All
1 exp1-palindrome View View View View
2 exp2-Simple Interest View View View View
3 exp3-arrays1 View View View View
4 exp5 View View View View
11 exp22 View View View View
12 exp12345678 View View View View
13 name View View View View
14 TestExp1 View View View View

CHAPTER 4

CONCLUSION AND FUTURE SCOPE

Conclusion:

- Thus, using these technologies VPL i.e. Virtual Programming Lab was developed for helping students increase their productivity and efficiency.
- With the help of VPL it will reduce the work of writing manuals which takes lot of time and also teachers can view the Student Progress.

Future Scope:

The student and mainly for the teacher. This is because the teacher must plan its activities accordingly, in order to prepare assignments, configure testing environments, and validation parametrization. These tasks take a lot of time. However, after assignments, less effort is required as the student does not need so much attention and assignments grading are much easier With this system Prospects for all these systems would include to increase their efficiency and to improve their security.

CHAPTER 5

REFERENCES

- https://getbootstrap.com/docs/4.0/examples/
- https://codepen.io/?cf_chl_captcha_tk=6dc9d91c30f6b3eee674c1c12c6cdb1796ec2cd7-1588451736-0-ARNBgooOlwCe7CPgEvWqBNLDVEF35m7IztNyui1QGTrqt6ZBDlYJVB2BDv5mCoxjT-TxwiCScFsyoj5Fs_WPvYDZvmJ60hQ3Rkhd0HXzegcSklF6k89gN5H0vXNHZ3E6UdTu Z4j_6rtSZtumwElUL53D20w949lJRHPmVmXuX3ZfD6bHpFJrAUq3QDlDe-1cj2LVacUlTl7_fogEa5G3kZzCZJxL-cqH518QU9aUnTmntuZG6M4Fj5cm8xk1DgqQ5yAUS5uVTENfpmLK6biCRMeBW0i748 KLKKfosdqpdVcvfUia7nYRL2b5yCC8Lc1KHGaX0hXJ753xgODEMuDTT8-AFGAS4ORYbM3CdZruPpXyRTOHETJ_G_V9R7G_jAo-6w1XAwe5LmUKpVtyjMNMwXCQfmyo8j1krIHIz7IR7YVviK8qOlubPPDQ81tFz-5bS-BxXRcXz5bLKPqYBpe2WGjti77TOZDbeYTzYbJ6d7ZxSbUizk5pwBAw05g9XHZ2kXHf 0hqFOy1kcwpfus_jhRc9UcqX8QYDUrC_YP-FkPld