PROJECT AUTHENTICATION AND APPROVAL SYSTEM

PROJECT WORK

DONE BY

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PG & RESEARCH

DEPARTMENT OF COMPUTER SCIENCE

SRI RAMAKRISHNA COLLEGE OF ARTS & SCIENCE (AUTONOMOUS)

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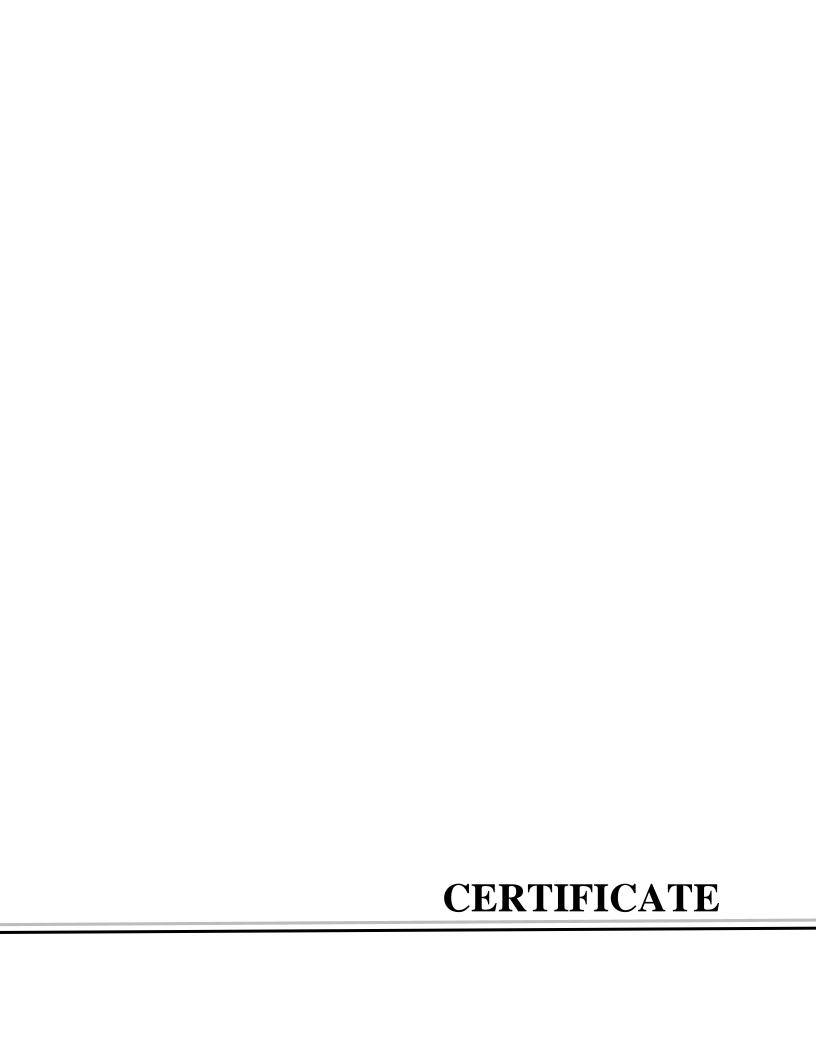
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DECEMBER 2022



CERTIFICATE

This is to certify that the project work entitled

PROJECT AUTHENTICATION AND APPROVAL SYSTEM

is a bonafide record of work done by

VYSHAK K

21202020

in partial fulfillment for the award of the degree of

MASTER OF COMPUTER SCIENCE

of Bharathiar University during

July 2022 to December 2022

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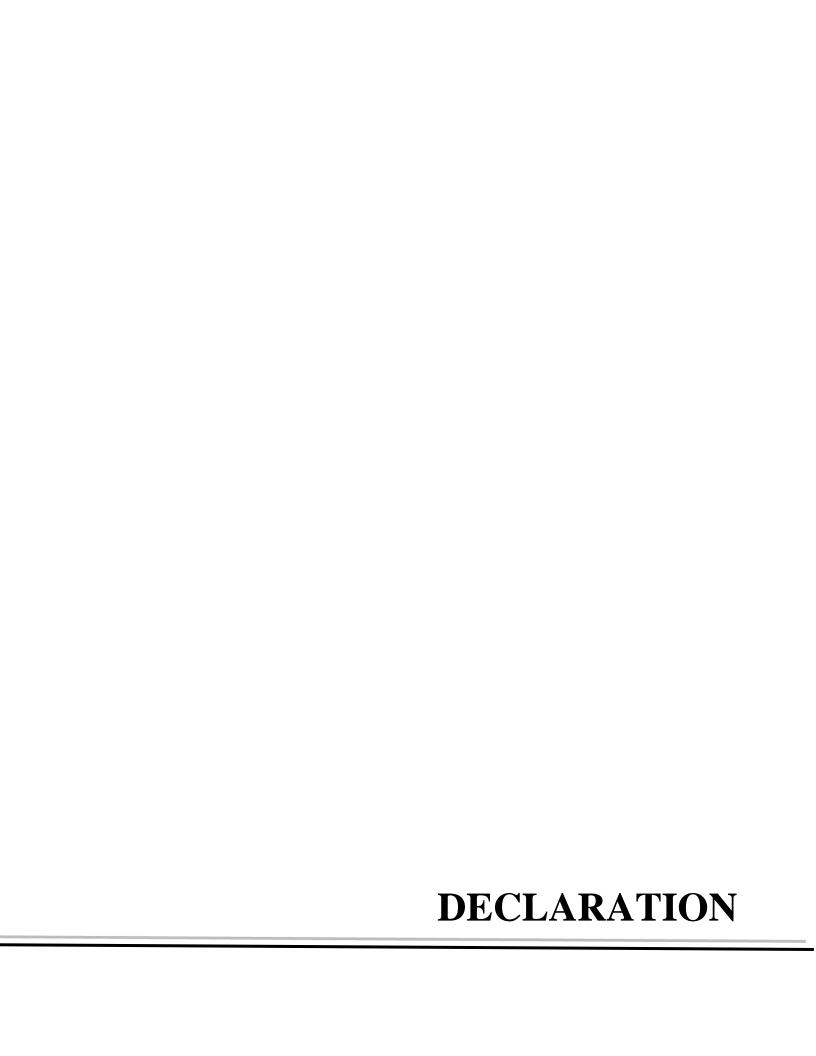
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Submitted for the viva – voce examination held on 18-11-2022

EXTERNAL EXAMINER

INTERNAL EXAMINER



DECLARATION

I hereby declare that this project work entitled "Project Authentication and

Approval System" for submitted to Sri Ramakrishna College of Arts and Science,

An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore, is a

record of original work done by me under the guidance of Dr. G. Maria Priscilla M.Sc.,

M.Phil., Ph.D., and that this project work has not formed the basis for the award of

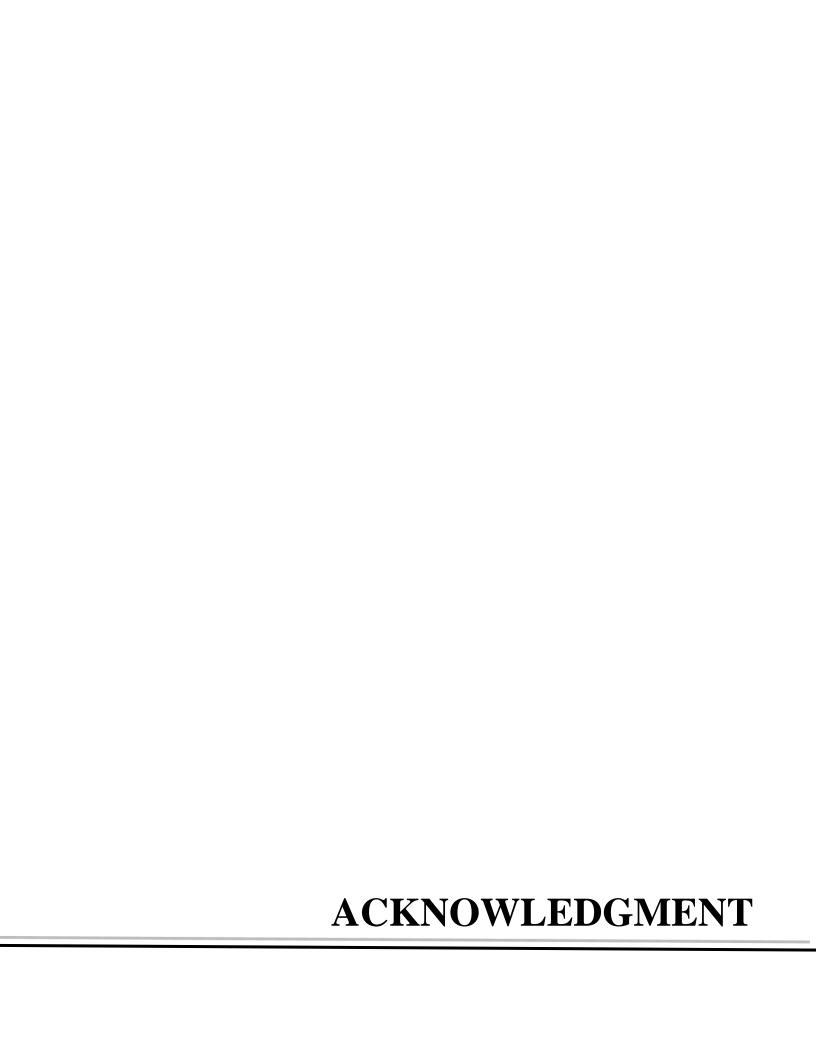
any degree / diploma / associateship / fellowship or similar to any candidate in

any university.

Place: Coimbatore

Date: 18/11/2022

Signature of the Student



ACKNOWLEDGMENT

I would like to extend my heartiest thanks to **Thiru. D. Lakshminarayanaswamy, Managing Trustee, SNR Sons Charitable Trust** with a deep sense of gratitude and respect for providing me an opportunity to study in this institution.

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ABSTRACT

Academic Project management is a major issue which is faced by many educational institutes, the main reason for this is there is no automated system followed in any institute. The method followed by the colleges are by collecting and storing project information through hard copy documents. The main problem with this method is that it is very time-consuming and tiresome as it involves a lot of manual effort.

The correct procedure of gathering projects and getting the reports approved cannot be done manually and in a very tedious manner. Therefore, there is a dire need for an automated system which is capable of performing the tasks with ease.

The Project Authentication and Approval System solves this problem. This web application automates the entire process of projects collection, approvals and monitoring. This application is built using web technologies such as PHP, HTML, JavaScript and MySQL. By implementing such a system in colleges, the teachers would be able to approve and disapprove the projects submitted by the students easily. It would also help in increasing the efficiency of the college administration in monitoring the progress of the projects. It would also help in managing the overall resources of the college better.

1. INTRODUCTION

Many educational institutes are struggling to find an automated system which can be followed in order to manage projects efficiently and effectively. The main reason for this is that there is no automated system followed in any institute. Upon receiving the project reports and the sources of the project from students, the college management and staff gather all the project reports and the project sources and store them physically in some locations, probably libraries.

In the proposed system, the need for most of the manual work is decreased and is almost null. Features such as, the Automatic Guide Assignment, where the problem of assigning a teacher as a guide to students is solved in just on click. The guide automatically gets assigned based on the availability of the teacher and the preference given by the student. Once the student submits his/her project to the teacher, the guide can view the details of the project submitted and choose whether to approve or disapprove it. A centralized project database is added so that project duplication is reduced. Tracking Assignment Status, this feature enables both the guide and the student to track the status of the project in real time. And, Inactivity remainder provides constant reminder to students as well as guide about the assignments pending without submitting the project. It also notifies the user about inactivity that remains with the user after a period of time.

The 'Project Authentication and Approval System', can lead to error free, secure, reliable and fast management system. It can assist the user to concentrate on their other activities rather to concentrate on the record keeping. Thus, it will help organization in better utilization of resources.

1.1 OBJECTIVE OF THE PROJECT

The main objective of this project is to streamline the whole process of submitting and approving the project in an easy and efficient way. By using the 'Project Authentication and Approval System', a lot of time can be saved.

The main features of this project are:

- Automatic Guide Assignment
- Similarity Content Checker
- Centralized Project Database
- Tracking Project Submission Status
- Inactivity Remainder
- One Click Approval

1.2 SYSTEM SPECIFICATIONS:

1.2.1 HARDWARE CONFIGURATION

The hardware specification is necessary to support the proposed system, which have been identifier, ordered, delivered, installed and tested at the time installation.

Processor	Intel core i5	
RAM	2 GB	
Hard Disk	40 GB	

1.2.2 SOFTWARE SPECIFICATION

The software specification is the one which says about the development environment of the package.

Operating System	Windows 10	
Frontend Languages	HTML, JavaScript and CSS	
Backend Languages	MySQL and PHP	

1.2.3 INTRODUCTION TO PHP

Php is a high-level, interpreted, interactive and object-oriented scripting language. Php 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.

- **1. PHP IS INTERPRETED**: Php is processed at runtime by the interpreter. You do not need to compile your program before executing it.
- **2. PHP IS INTERACTIVE**: You can actually sit at a Php prompt and interact with the interpreter directly to write your programs.
- **3. PHP IS OBJECT-ORIENTED**: Php supports Object-Oriented style or technique of programming that encapsulates code within objects.
- **4. A BROAD STANDARD LIBRARY**: Php's bulk of the library is very portable and cross-platform compatible on UNIX, Windows and Macintosh.
- **5. GUI PROGRAMMING**: Php supports GUI applications that can be created and ported to many system calls, libraries and windows systems, such as Windows MFC, Macintosh, and the X Window system of Unix.

FEATURES OF PHP

- 1. It supports functional and structured programming methods as well as OOP.
- 2. It can be used with scripting language.
- 3. It provides very high-level dynamic data types and supports dynamic type checking.
- 4. It supports automatic garbage collection.
- 5. It can be easily integrated with C, C++, COM, ActiveX, CORBA and Java.

ADVANTAGES OF PHP

1. EASY TO READ, LEARN AND WRITE

Php is a high-level programming language that has English-like syntax. This makes it easier to read and understand the code.

2. INTERPRETED LANGUAGE

Php is an interpreted language which means that Php directly executes the code line by line. In case of any error, it stops further execution and reports back the error which has occurred. Php shows only one error even if the program has multiple errors. This makes debugging easier.

3. DYNAMICALLY TYPED

Php doesn't know the type of variable until we run the code. It automatically assigns the data type during execution.

4. VAST LIBRARIES SUPPORT

The standard library of Php is huge. A Php package manager (pip) makes things easier to import other great packages from the Php package index (PyPi).

5. PORTABILITY

In many languages like C/C++, you need to change your code to run the program on different platforms. That is not the same with Php. You only write once and run it anywhere.

2. SYSTEM STUDY

2.1 EXISTING SYSTEM

Managing a manual-based project approval is a tiring and tedious process. It is not the same as online approval system.

2.1.1 LIMITATIONS

- 1. This approach is time consuming.
- 2. There is a problem of similar project submission and approval.
- 3. There is a lack of transparency and single communication medium

2.2 PROPOSED SYSTEM

The basic for the proposed system is the recognition of the need for improving the existing system or procedure. The proposed system places all aspect of project approval in just one click. Each project uploaded by student will process from HOD to project in-charge to internal guide and student can see project status after approval of one authorities project will go to next phase. In any phase if project don't fulfill requirement project will be rejected, and sent back to the student with proper feedback for improvement.

. **2.2.1 BENEFITS**

- 1. Time saving and less hectic to implement.
- 2. Centralized database for project, to avoid project duplication.
- 3. Single channel of communication between the guide and the student.
- 4. Tracking Assignment Status, this feature enables both the guide and the student to track the status of the project in real time.

3. SYSTEM DESIGN AND DEVELOPMENT

3.1 SYSTEM DESIGN

Design is a multi-step process that focuses on data structure software, architecture, procedural details, algorithms etc. and interface between modules. The design process also translates he requirement into the presentation of software that can be accessed for quality before coding begins. Computer software design changes continuously as new methods; better analysis and broader understanding evolved. Software design is at relative the early stage in its revolution.

Therefore, software design methodology lacks the depth, flexibility and quantitative nature that are normally associated with more classical engineering disciplines. However, techniques for software design do exist, criteria for design qualities are available and design notations can be applied.

3.2 INPUT DESIGN

Input design is one of the most expensive phases of the operation of computerized system and is often the major problem of a system. A large number of problems with a system can usually be tracked backs to fault input design and method. Needless to say, therefore, that the input data is the life blood of a system and have to be analyzed and designed with utmost case and consideration. The decisions made during the input designer. Input design is the process of converting user-originated inputs to a computer-based format. Input design is one of the most expensive phases of the operation of computerized system and is often the major problem of a system.

3.3 DATABASE DESIGN

The database design involves creation of tables that are represented in physical database as stored files. They have their own existence. Each table constitute of rows and columns where each row can be viewed as record that consists of related information and column can be viewed as field of data of same type. The table is also designed with some position can have a null value. The database design of project is designed in such a way values are kept without redundancy and with normalized format. Refer the appendix for screen shots of database design.

Table Name: Users

Primary Key: UID

Description: This table is used to store the student and guide details.

Field Name	Data Type	Width	Description
uid	Integer	10	Admin identification
username	Varchar	15	User name
password	Varchar	15	Password
role	Varchar	3	Roles, i.e. Admin, Guide or Student
class	Varchar	15	Class
year	Varchar	15	Year
last_login	Varchar	15	Last Login Details

Table Name: ProjectsAssigment

Primary Key: pid

Description: This table is used to store the student and guide details.

Field Name	Data Type	Width	Description
.,	T .	10	D : 1D
pid	Integer	10	Project ID
sid	Varchar	15	Student ID
Uid	Varchar	15	Guide ID
Progress	Integer	3	Progress

Table Name: Projects

Primary Key: pid

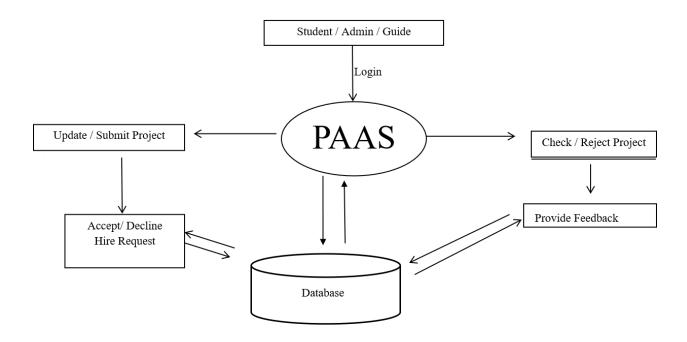
Description: This table is used to store the student and guide details.

Field Name	Data Type	Width	Description
pid	Integer	10	Project ID
sid	Varchar	15	Student ID
project name	Varchar	15	Name of the P
project_desc	Varchar	300	Project Description
Backend	Varchar	15	Backend Language
Frontend	Varchar	15	Frontend Language
Submitted date	Date	-	Submitting date

3.4 OUTPUT DESIGN

The output design must be in such a way the user must able to understand the given details. So, each detail given in the output should have some meaning in displaying the data. The output design is displayed in the form of data view. Output Design generally refers to the results and information's that are generated by the system for many end-users, output is the main reason for developing the system and the basis on which they evaluate the usefulness of the application. The objective of a system finds its shape in terms of the output. The analysis of the objective of a system leads to determination of outputs. External outputs are those whose destination will be outside the organization and which require special attention as they project the image of the organization. Internal outputs are those whose destination is within the organization. It is to be carefully designed as they are the user's main interface with the system

3.5 DATA FLOW DIAGRAM



3.6 CODE DESIGN

Code is an order collection of symbols designed to provide unique identification of an entry or attribute. Sometimes used in the place of name of the item they can be specified all object's physical or performances characteristics or operational instructions. They can also show inter relationship and may sometime be used to achieve secrecy or confidentiality. Code design submit the user id, farmer id, product id and order id generate the unique form design

Project authentication and approval system mainly uses two algorithms to process the data.

Guide Assignment Algorithm.

Pseudo Code

- 1. Store the total number of guides in an array.
- 2. Store the total number of students of a particular class in an array.
- 3. Store the total strength of students as MaxStudent, and total strength of guides as MaxGuide.
- 4. Initialize a variable i = 0, and x = 0.
- 5. Iterate a while loop with the condition x < MaxStudent.
- 6. Check whether the value of i is greater than the value of MaxGuide.
- 7. If False, assign student(x) to guide(i) and store in the database.
- 8. Else, change the value of i back to 0.

Similarity Check Algorithm

Jaccard Algorithm Pseudo Code.

It tokenizes the words and calculates the intersection over union.

```
def calculate Jaccard (word_tokens1, word_tokens2):
```

```
both_tokens = word_tokens1 + word_tokens2
union = set(both_tokens
intersection = set()
for w in word_tokens1:
    if w in word_tokens2:
        intersection.add(w)
jaccard_score = len(intersection)/len(union)
return jaccard_score
```

3.7 SYSTEM DEVELOPMENT

.

3.7.1 MODULE DESCRIPTION

1.ADMIN:

The admin of the system will be the lab staff. Admin can able to see all student record Admin can able to update and delete student records Admin upload lab time table for students. The following are the responsibilities of the administrator.

- Guide Assignment to every class
- Setting up date and time for abstract submission, project review and Viva.
- Setting and updating user credentials.
- Tracking the project submission process

2.STUDENT

The students of the system will be the user. Student able to see their project information. Students can be allotted time to meet the guide.

- Login Student login his/her A/C, for known the Lab further intimations and study details.
- View Project Submission Progress %:
- View timetable: student can view the timetable for all the deadlines

3. INTERNAL GUIDE MODULE

The internal guide can view the number of students assignment to them for guidance. They can set dates, and time for meeting and submission of abstract, presentation etc.

- Login Internal guides can login his/her A/C,.
- View Project Submission Progress %:
- View and set deadlines
- Provide feedback
- Grade the project
- Approve the project

4. TESTING AND IMPLEMENTATION

4.1 WHITE BOX TESTING

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

4.2 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.

4.3 RELIABILITY TESTING

Reliability Testing is about exercising an application so that failures are discovered and removed before the system is deployed. The purpose of reliability testing is to determine product reliability, and to determine whether the software meets the user's reliability requirements. Software Reliability is defined as the probability of failure-free software operation for a specified period of time in a specified environment. Reliability refers to the consistency of a measure. A test is considered reliable if we get the same result repeatedly.

4.4 ACCESSIBILITY TESTING

Accessibility testing is widely used to check the application for disabled persons and make sure the developer will create the application which can be accessible by all types of users, like a regular user and physically challenged (color blindness, learning disabilities, and so on). Accessibility testing is another type of software testing used to test the application from the physically challenged person's point of view. Here the physical disability could be old age, hearing, color blindness, and another underprivileged group.

5. CONCLUSION

To conclude, online project authentication and approval system will help the management to handle a student project in a proper and efficient manner. This will help to make the project management more efficient and also reduce the time taken by the management to complete the project assignment. The project will also improve the communication between the management and the students.

The software will allow the institute to handle the student projects in a systematic way. This will make it easy for the management to track the progress of each student project. Moreover, the software will also help the management to keep track of different projects and can easily identify which project is to be completed by which student. This will also enable the management to assign tasks to students easily as they will be able to track the progress of the student and assign tasks accordingly.

6. SCOPE FOR FUTURE ENHANCEMENTS

The scope of the project is the system on which the software is installed, the project is developed as a desktop application, but later on the project can be modified to operate it online. The application has been developed in a such a way that it can interact with any other software components that can be developed and added to the system can be easily integrated into the existing system. In this application, the extra module can be added with it, if introduced a system in future. This project can be modified based on the future needs of the organization. The modules can be altered or extra information can also be added in this project. Although all the objectives have been met, the system still has room for improvements such as:

- 1. Implementation of Artificial Intelligence to help students find new and innovative projects according to the need of the student.
- 2. Automation of student and guide login credential.
- 3. Implementing more sophisticated algorithm for content similarity check, like BERT Algorithm.

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8. SAMPLE SOURCE CODE

```
Project.php
<?php $this->view('includes/header',$data) ?>
<?php $this->view('includes/nav',$data) ?>
<main id="main">
      <section id="about" class="about">
      <div class="container" >
            <header class="section-header py-3">
        <h3>Central Project Database</h3>
        See what others are doing!
        </header>
          <?php if(message()): ?>
            <div class="alert alert-danger mt-4 text-center" role="alert">
             <i><!><!=message(",true)?></i>
            </div>
          <?php endif; ?>
          <div class="row justify-content-center">
          <div class="col-lg-12">
           <div class="box text-center">
            <thead style="font-size: 10px;">
             #
              Project
              Student
              Guide
             </thead>
             <?php if(!empty($projects_row)):?>
                  <?php for($i=0; $i < count($projects_row); $i++):?>
                        <?=$i+1?>
                              <b><?=$projects_row[$i]-
>projectname?></b><br><span style="font-size: 8px"><?=$projects_row[$i]-
>projectdesc?></span>
```

```
<?=$projects_row[$i]->studentname?><br><span
style="font-size: 8px"><?=$projects row[$i]->class?></span>
                                    <?=$projects_row[$i]->guidename?><br><span
style="font-size: 8px"><?=$projects_row[$i]->guidedes?></span>
                             <?php endfor; ?>
                     <?php else:?>
                       No Projects Submitted, Yet! <?=Auth::getUser('name')?>
                     <?php endif;?>
               <div class="text-center text-lg-center my-4">
               <a href="<?=ROOT?>/addgoals"><button type="submit" class="border-0 btn-read-
more align-items-center justify-content-center align-self-center">
                 <span>View / Submit Your Project</span>
                 <i class="bi bi-arrow-right"></i>
                </button>
              </a>
              </div>
             </div>
            </div>
              </div>
       </section>
</main>
<?php $this->view('includes/footer',$data) ?>
Login.php
<?php $this->view('includes/header',$data) ?>
<?php $this->view('includes/nav',$data) ?>
<main id="main">
  <!-- ===== About Section ====== -->
  <section id="about" class="about">
   <div class="container">
    <div class="row gx-0 py-5 justify-content-center">
     <div class="col-lg-8 d-flex flex-column justify-content-center text-center">
      <div class="content">
```

```
 Log In 
       <?php if(message() || (count($errors)>0)): ?>
               <div class="alert alert-danger mt-4" role="alert">
                <i><!><!=message(",true)?></i>
                <?php foreach ($errors as $errors):?>
                              <i><!><!></i>
                <?php endforeach; ?>
               </div>
       <?php endif; ?>
       <form method="post" action="" class="text-center">
        <div class="mb-3 py-3">
         <label for="exampleInputEmail1" class="form-label">Username or Register Number</label>
         <input type="text" name="name" placeholder="Eg: 21202020"
value="<?=setValue('name')?>" class="form-control form-input" id="exampleInputEmail1" aria-
describedby="emailHelp">
         <div id="emailHelp" class="form-text">We'll never share your personal details with anyone
else.</div>
        </div>
        <div class="mb-3 text-center">
         <label for="exampleInputPassword1" class="form-label">Password</label>
         <input type="password" name="password" placeholder="********"
value="<?=setValue('password')?>" class="form-control form-input" id="exampleInputPassword1">
        </div>
        <input type="hidden" name="check" value="1" >
        <!-- <div class="mb-3 form-check">
         <input type="checkbox" class="form-check-input" id="exampleCheck1">
         <label class="form-check-label" for="exampleCheck1">Check me out</label>
        </div> -->
        <div class="text-center text-lg-center">
         <button type="submit" class="btn-read-more align-items-center justify-content-center align-
self-center">
          <span>Log In</span>
          <i class="bi bi-arrow-right"></i>
         </button>
       </div>
       </form>
      </div>
     </div>
     <div class="col-lg-6 d-flex align-items-center" >
      <!-- <img src="assets/img/about.jpg" class="img-fluid" alt=""> -->
     </div>
    </div>
   </div>
```

```
</section><!-- End About Section -->
</main>
<?php $this->view('includes/footer',$data) ?>
Home.php
<?php $this->view('includes/header',$data) ?>
<?php $this->view('includes/nav',$data) ?
<!-- ===== Hero Section ====== -->
<section id="hero" class="hero d-flex align-items-center">
  <div class="container">
   <div class="row">
    <div class="col-lg-6 hero-img" data-aos="zoom-out" data-aos-delay="200">
     <img src="assets/img/hero-img.png" class="img-fluid" alt="">
    </div>
    <div class="col-lg-6 d-flex flex-column justify-content-center">
     <h1 data-aos="fade-up"><?=APP_TAG?></h1>
     <h2 data-aos="fade-up" data-aos-delay="400"><?=APP_DESC?></h2>
     <div data-aos="fade-up" data-aos-delay="600">
      <div class="text-center text-lg-start">
       <a href="login" class="btn-get-started scrollto d-inline-flex align-items-center justify-content-
center align-self-center">
        <span>Login!</span>
        <i class="bi bi-arrow-right"></i>
       </a>
      </div>
     </div>
    </div>
   </div>
  </div>
 </section><!-- End Hero -->
```

9. SCREENSHOTS

