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VISHWAKARMA GOVERNMENT ENGINEERING COLLEGE

CHANDKHEDA, AHMEDABAD

Project Report On

VGEC EXAMINATION SYSTEM

By

BHARADVA JAY MUKESHKUMAR	**160170116006**
BHUNSADIYA MEHULKUMAR MANJIBHAI	**160170116009**
MEWADA VATSAL JITENDRAKUMAR	**160170116026**
PANCHAL VIKALP NATVARLAL	**160170116028**

GUIDED BY

Prof. J.H.Vaniya

DEPARTMENT OF INFORMATION TECHNOLOGY

A PROJECT REPORT SUBMITTED TO GUJARAT TECHNOLOGICAL UNIVERSITY IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF BACHELOR OF ENGINEERING IN INFORMATION & TECHNOLOGY

CERTIFICATE

This is to certify that project work embodied in this report entitled **"VGEC EXAMINATION SYSTEM"** was carried out by **Bharadva Jay Mukeshkumar (160170116006), Bhunsadiya Mehulkumar Manjibhai (160170116009), MewadaVatsal Jitendrakumar (160170116026), Panchal Vikalp Natvarlal (160170116028)** at **Vishwakarma Government Engineering College** for partial fulfillment of B.E. degree to be awarded by Gujarat Technological University. This project work has been carried out under my supervision and to the satisfaction of the department.

Date:

Place:

Internal Guide:

Name: Prof. J.H.Vaniya

Signature:

Head of Department:

Name: Dr. Vibha Patel

Signature:

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Abstract

This system is based on web application. The key concept is to minimize the amount of paper and convert the all form of documents in to digital form. The system is carrying all true information about students. Student with minimum knowledge about computer can operate the system easily. The system generates the report at the end.

- **Faculty Panel:** Through this system, faculty can add the exam of a particular subject. And these exams can be assigned to the student(s).
- **Admin Panel:** Admin can generate the report on the basis of exam, branch, semester and the duration. Admin can add the faculty members, can add the subject(s). Admin can manage the students (Can promote or demote in semesters).
- **Student Panel:** Students can attempt the exam(s) which has been assigned to them, can see their results, can update their profile.

1. Introduction

1.1. Problem Summary

The present offline examination system is very time consuming and its requires more papers to be used. This system may also required more invigilators during student's exam and the chances of paper leakage is more.

1.2. Aim and Objectives of the Project

The key concept of '**VGEC EXAMINATION SYSTEM**' is to minimize the amount of paper and convert the all form of documents in to digital form. The system will carry all true information about students. Student with minimum knowledge about computer can operate the system easily.

1.3. Problem Specification

Current examination is used in following scenario,

- Semester Class Test-1 Exam
- Semester Class Test-2 Exam
- Extra Test (if any)

1.4. Brief Literature Review & Prior Art Search

In present system, there are semester class test-1 and semester class test-2 exams which is conducting offline. So the current exam system is very time consuming, also its requires lots of paper, There may requires more invigilators for more students examination, The chances of paper leakage is more in this system and result processing takes more time as it is done manually.

So, this "**VGEC EXAMINATION SYSTEM**" will conduct online student exam. Faculty will generate examination of their particular subject and assign to their students. Student will easily attempt their assigned exam and at the end

they will see their result and their mistakes. Faculty can generate their examination report. So, there will not be any paper waste and its security will be high.

- In one embodiment, an apparatus may receive metadata that is associated with content. The metadata includes event descriptors that describe events included in the content. The apparatus may generate a question based on at least one of the event descriptors.

- The present invention(Question and Answer Generator) provides an automated solution for generating a question document and an answer document from a database of questions and answers. The solution utilizes an extensible markup language to define the database. The database is then converted into a first Document Object Model (DOM) tree. The first DOM tree may then be used in prompting a user to enter the number of questions from each section to be generated. Once this input is received, nodes from the first DOM tree are randomly selected using the data received from the input. These randomly selected nodes are then used to create a second DOM tree representing the quiz or test. This second DOM tree may then be converted to a readable or printable format using a transformation, such as an style-sheet language transformation.

- It is generally recognized that an optimized testing device would be simple and inexpensive and achieve at least the following objectives: It would provide the examinee with the correct answer to the questions such that he could learn the correct answer from the quiz. it would permit the quiz to be scored quickly, preferably by the examinee, thereby relieving the examiner of this burden; and. it would provide the examiner with an immediate item analysis of the questions and answers in order to immediately, i.e., during the same class period, ascertain what subject matter the students had not learned from the prior instruction and which questions, if any, were ill conceived.

1.5. Plan of Work

We are adopting the SDLC cycle for our solution development. We already have passed through the Communication phase, Requirement gathering phase, Planning phase and Analysis phase.

- In first phase of SDLC cycle, We collect the information about present examination system and its problems, then we study on it.
- In second phase of SDLC cycle, We have prepared basic design model and some design canvas for it.
- In third phase of SDLC cycle, We started implementation of our examination system and we have divided our team in different technical work and testing the software.

1.6. Tools and Technology Required

- FRONT END:
  - HTML,CSS
  - JavaScript
  - BootStrap

- BACK END:
  - C#,ASP.NET

- DATABASE:
  - SQL Server Management Studio

2.Design:Analysis,DesignMethodolog&Implementation Strategy

2.1 AEIOU Canvas

The sheet depicts all the activities performed, environment, users and interaction among staff. Here, it enlists all the activities related to public domain, the environments where crowd usually gathers, the various groups which interact in the given situation, the objects involved and the Users who may use our product.

2.2 Empathy Mapping Canvas

This canvas describes about the activity and users along with happy story and sad story. It tries to create empathy with the users surveyed and connects the developers to the people who are to be benefited by the product once ready. It allows the developers to step into the user's shoes and understand their requirements.

2.3 Ideation Canvas

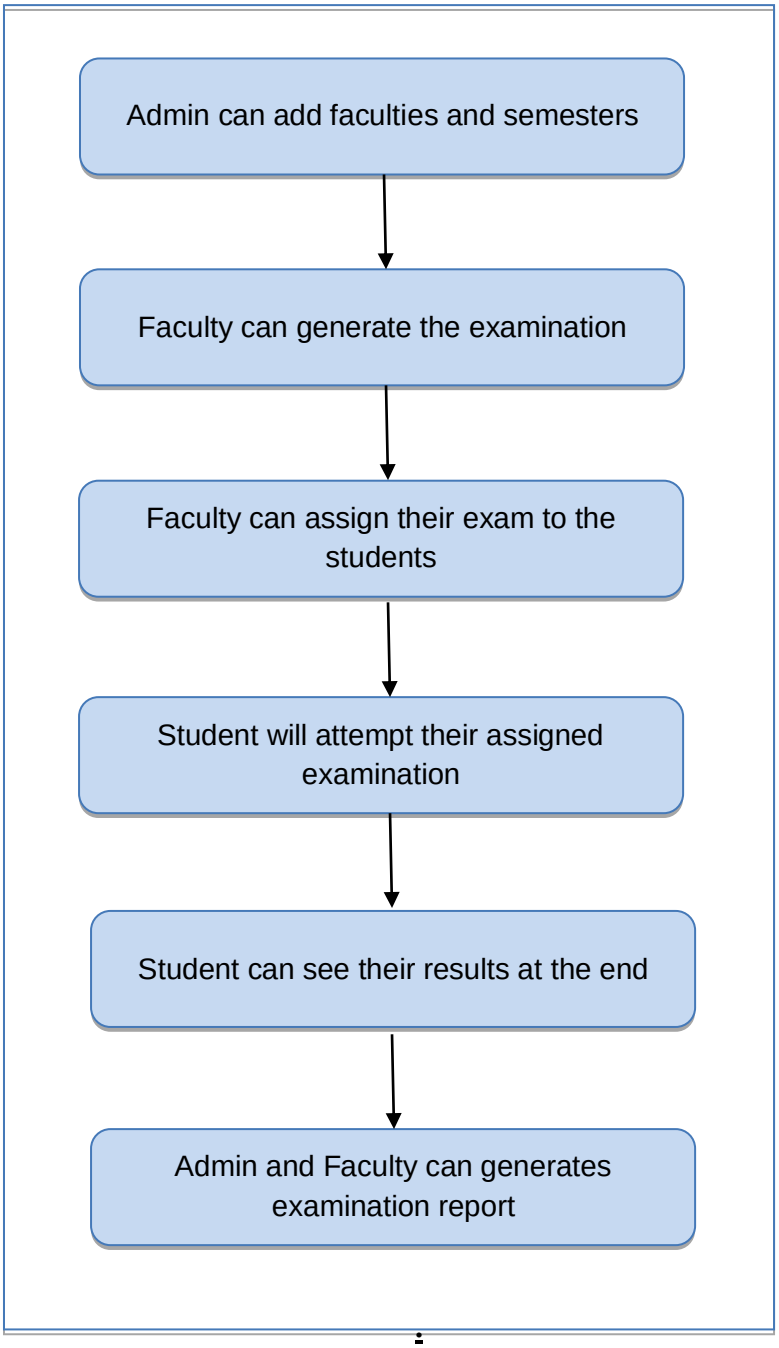
The sheet is about the location environment and all the props used during the research phase. Here, we have connected the various aspects - People, Activities, Situation/Context/Locations and Props/Possible solutions for the identified domain.

2.4 Product Development Canvas

The sheet involves feedback ideas and list of ideas, we have selected and rejected. This sheet describes the purpose of the project and also the stakeholders. It enlists the specific functions and features planned for the product, along with the components involved. This is an iterative phase consisting of user revalidation where feedback of the users is taken and the decided features are decided to be rejected, redesign and/or retained.

3. Implementation

3.1 Process Chart



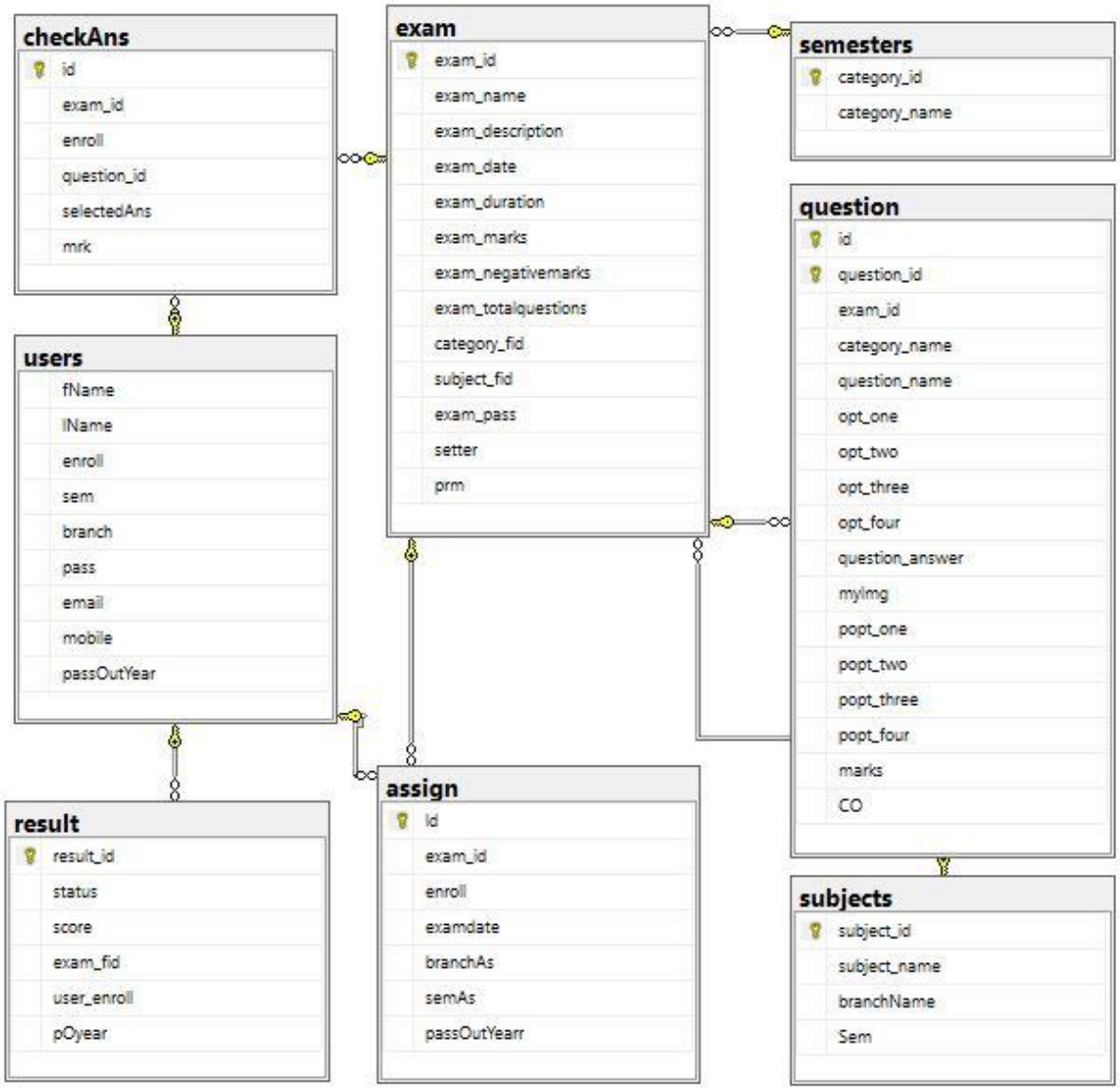
3.2 Designing Tools

The website will be built in ASP.NET Technology on Visual Studio IDE. We are building a dynamic website in which an integrated SQL Server Management Studio Database will be used to store and maintain application data in the backend. Advance Web Technology is being used in frontend to build interactive User Interface. Relation Schema is already been prepared which justifies each and every possible relationship that exists between all the components and will help attain the projected goal.

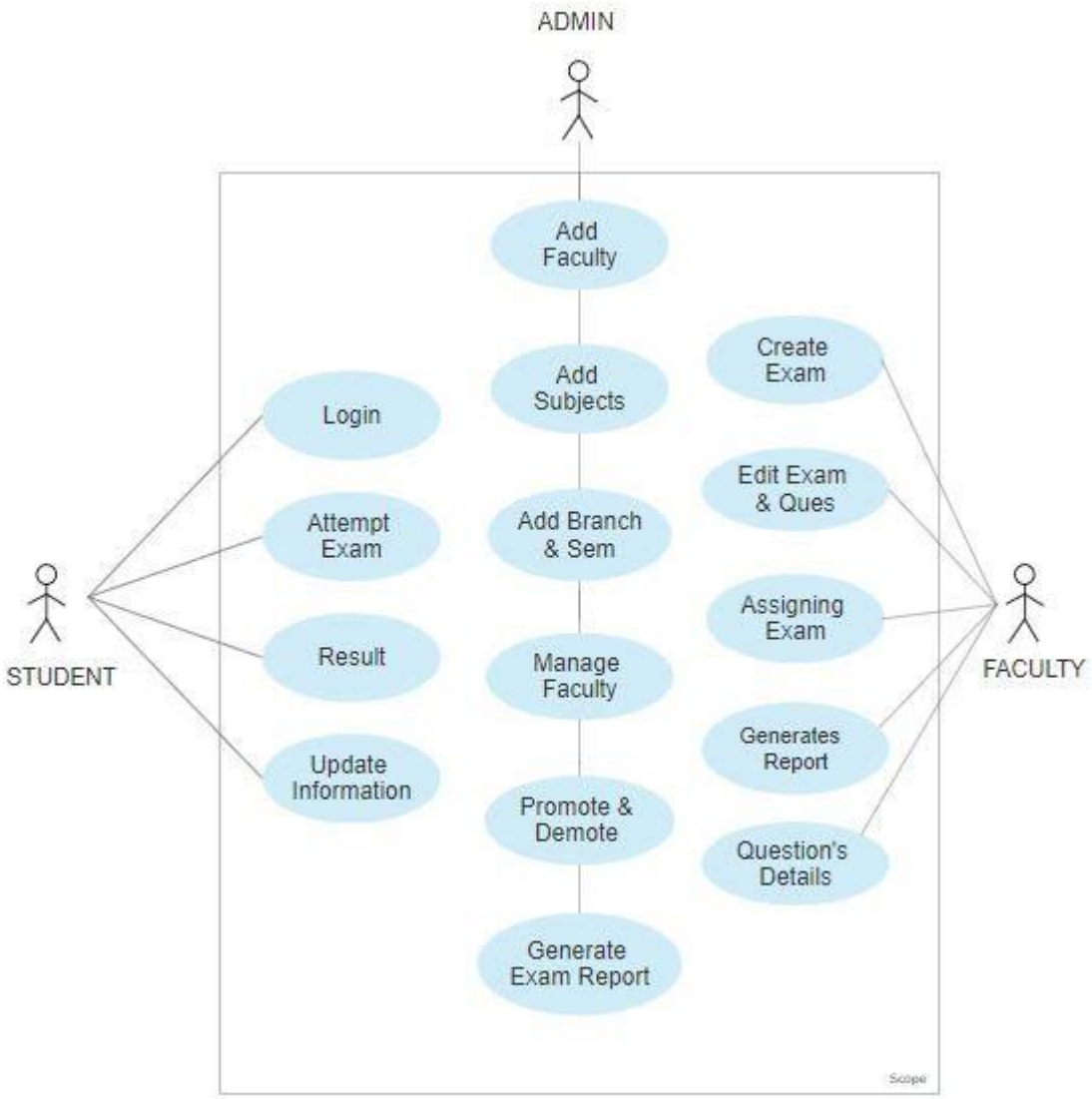
3.3 Implementation Strategy

Based on a proposed schema, tables are being constructed having every entity which is being mapped with other entities in other relation hence relations are highly normalized. So using proper query, required or aggregate data can be exchanged between the relations. Hence the overhead of bringing required data at the required place is being eliminated. As well as repetition work is also going to be reduced as all the data will be centralized in the relational database. We are implementing MVC architecture of .NET technology which will ease the interaction between users and application data. Business logic understands user's inputs and provides user required data in forms of HTML and windows forms. Business Logic consists of a C# programming script that is written to perform attainment level calculation using application data that is being brought from the database by the Controller layer using ADO .NET tools and programming script.

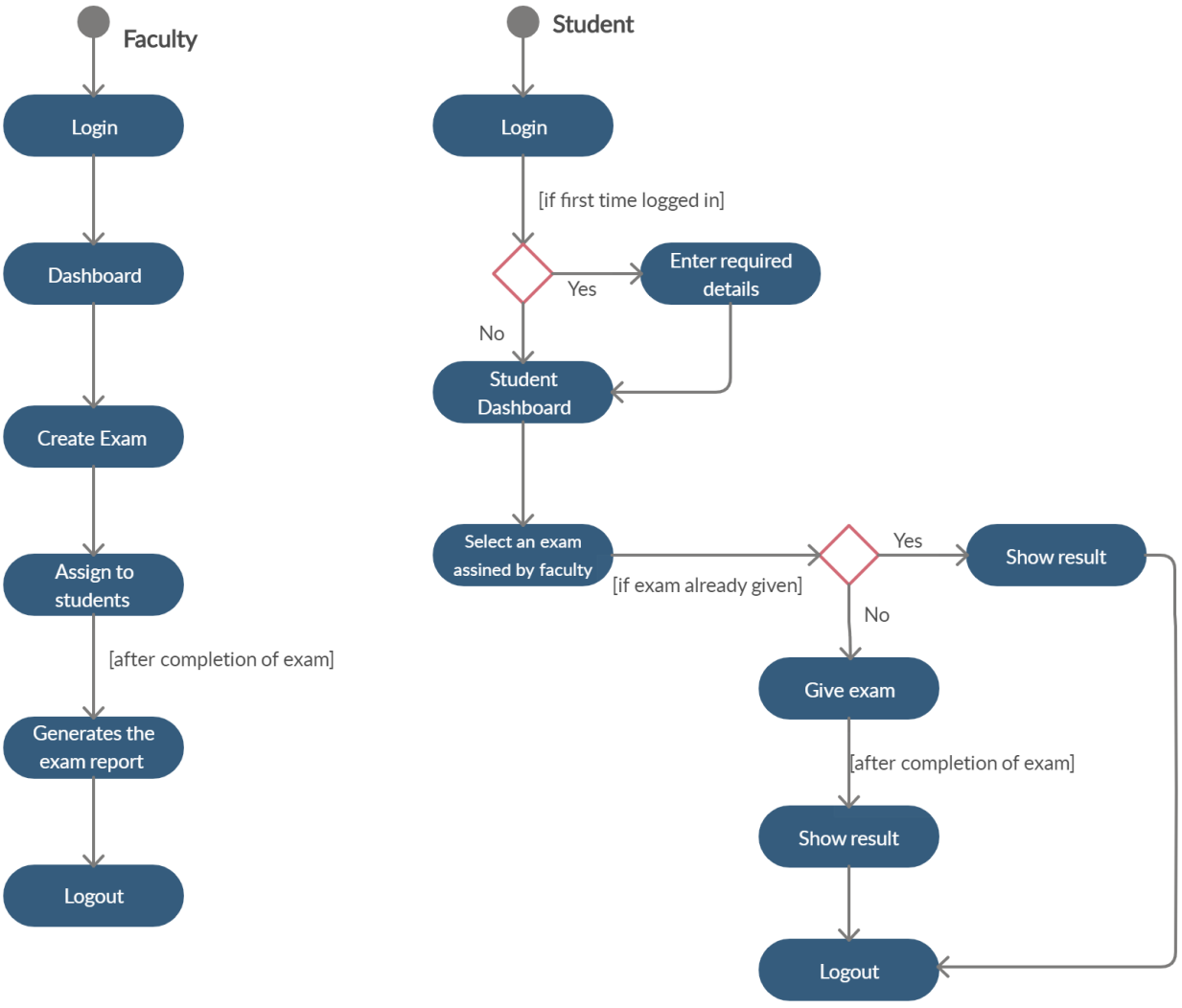
3.3.1 Entity-Relationship Diagram



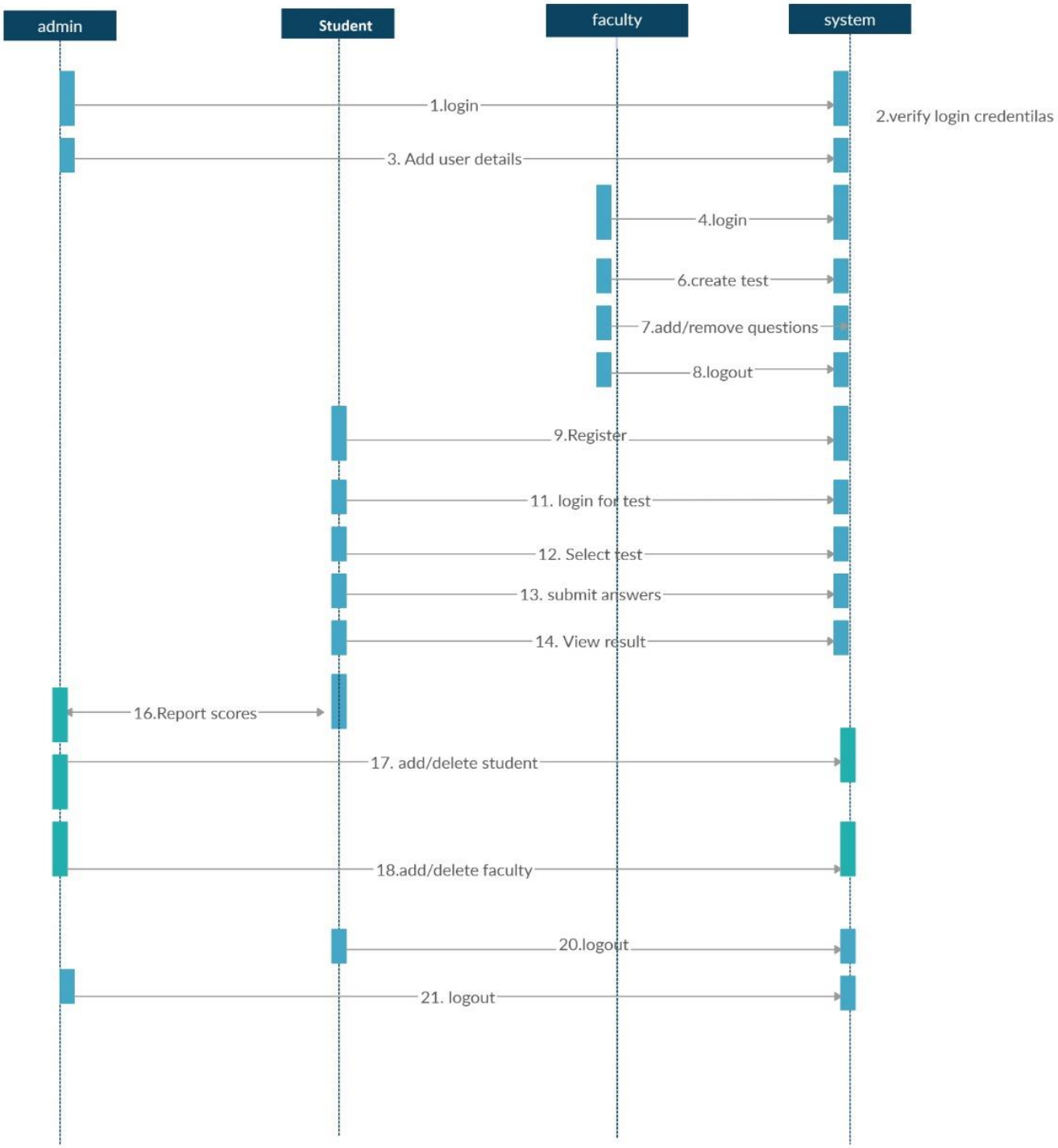
3.3.2 Use-Case Diagram



3.3.3 Activity Diagram



3.3.4 Sequence Diagram



3.3.5 Data Dictionary

User Table:

Column Name	Data Type	Allow Nulls
fName	varchar(15)	☑
lName	varchar(20)	☑
enroll	decimal(12, 0)	☐
sem	int	☑
branch	varchar(30)	☑
pass	varchar(50)	☑
email	varchar(100)	☑
mobile	varchar(10)	☑
passOutYear	int	☑

Question Table:

	Column Name	Data Type	Allow Nulls
🔑	id	int	☐
🔑	question_id	int	☐
	exam_id	varchar(60)	☑
	category_name	varchar(1)	☑
	question_name	varchar(MAX)	☑
	opt_one	varchar(MAX)	☑
	opt_two	varchar(MAX)	☑
	opt_three	varchar(MAX)	☑
	opt_four	varchar(MAX)	☑
	question_answer	int	☑
	mylmg	varbinary(MAX)	☑
	popt_one	varbinary(MAX)	☑
	popt_two	varbinary(MAX)	☑
	popt_three	varbinary(MAX)	☑
	popt_four	varbinary(MAX)	☑
	marks	int	☑
	CO	int	☑

Exam Table:

Column Name	Data Type	Allow Nulls
exam_id	varchar(60)	☐
exam_name	varchar(MAX)	☑
exam_description	varchar(MAX)	☑
exam_date	date	☑
exam_duration	int	☑
exam_marks	int	☑
exam_negativemarks	int	☑
exam_totalquestions	int	☑
category_fid	int	☑
subject_fid	int	☑
exam_pass	int	☑
setter	varchar(50)	☑
prm	varchar(5)	☑

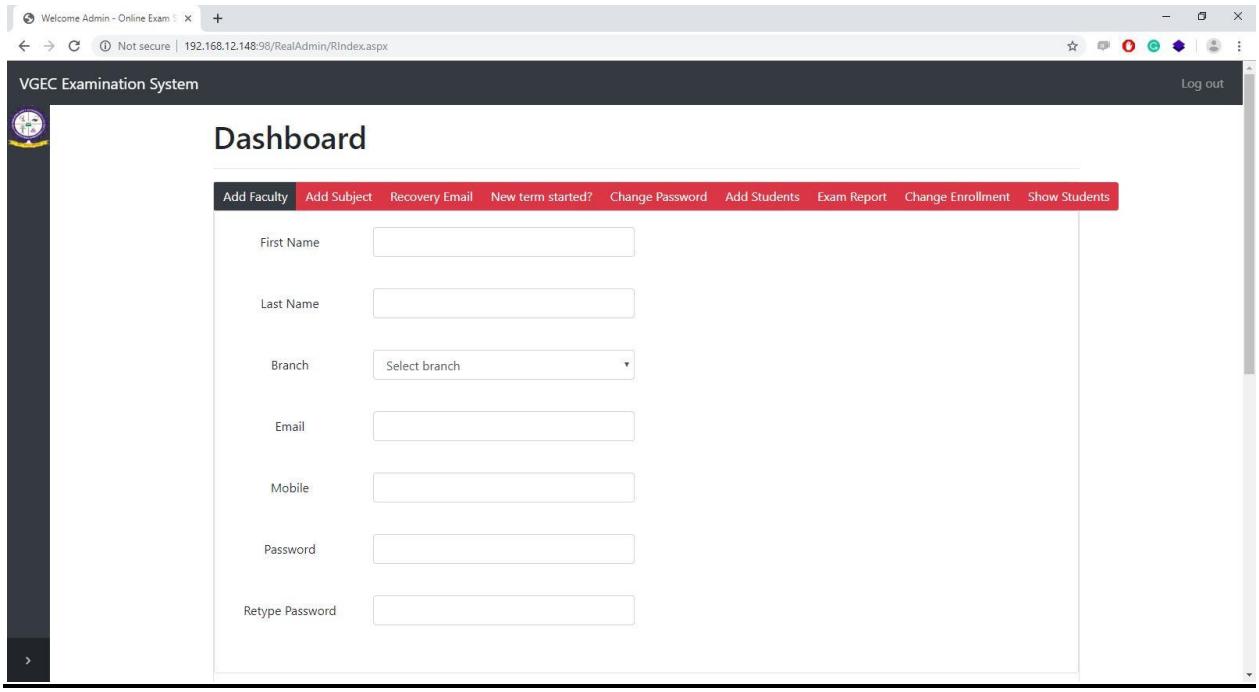
Assign Table:

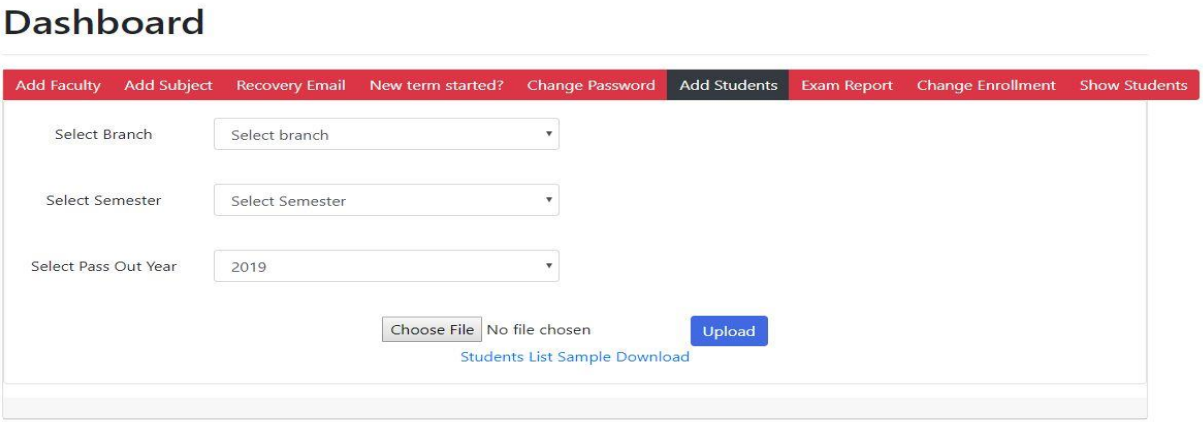
Column Name	Data Type	Allow Nulls
Id	int	☐
exam_id	varchar(60)	☑
enroll	decimal(12, 0)	☑
examdate	date	☑
branchAs	varchar(100)	☑
semAs	int	☑
passOutYearr	int	☑

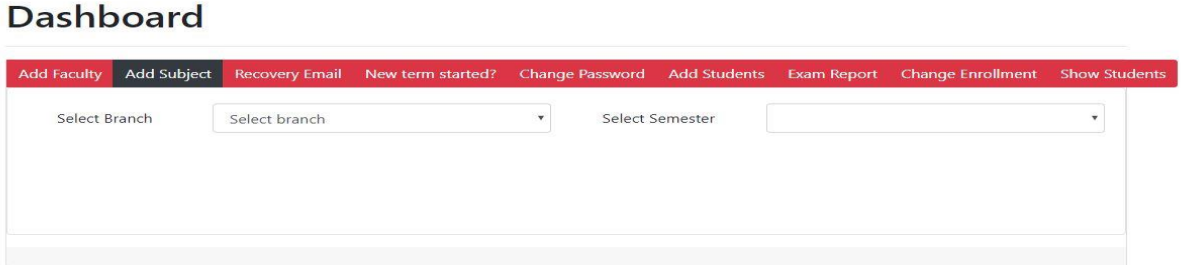
Result Table:

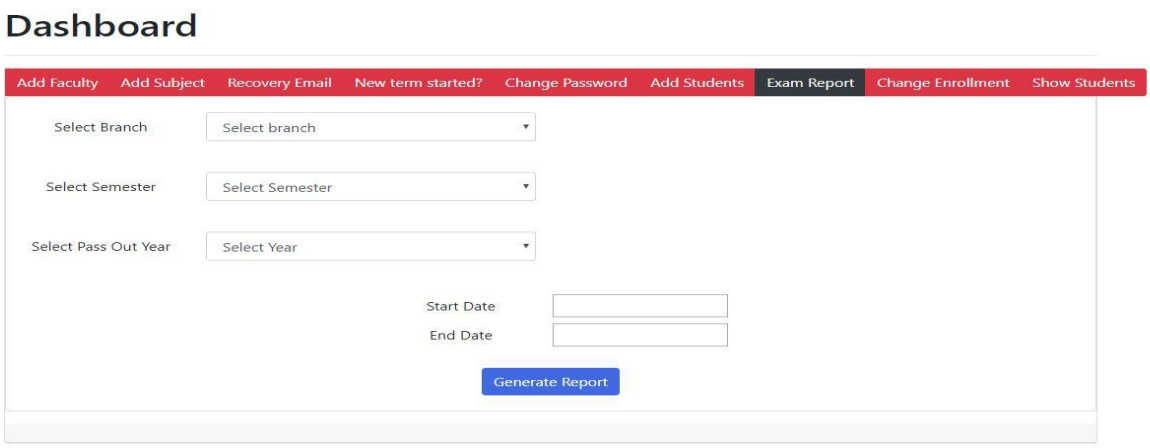
Column Name	Data Type	Allow Nulls
result_id	int	☐
status	varchar(45)	☑
score	int	☑
exam_fid	varchar(60)	☑
user_enroll	decimal(12, 0)	☑
pOyear	int	☑

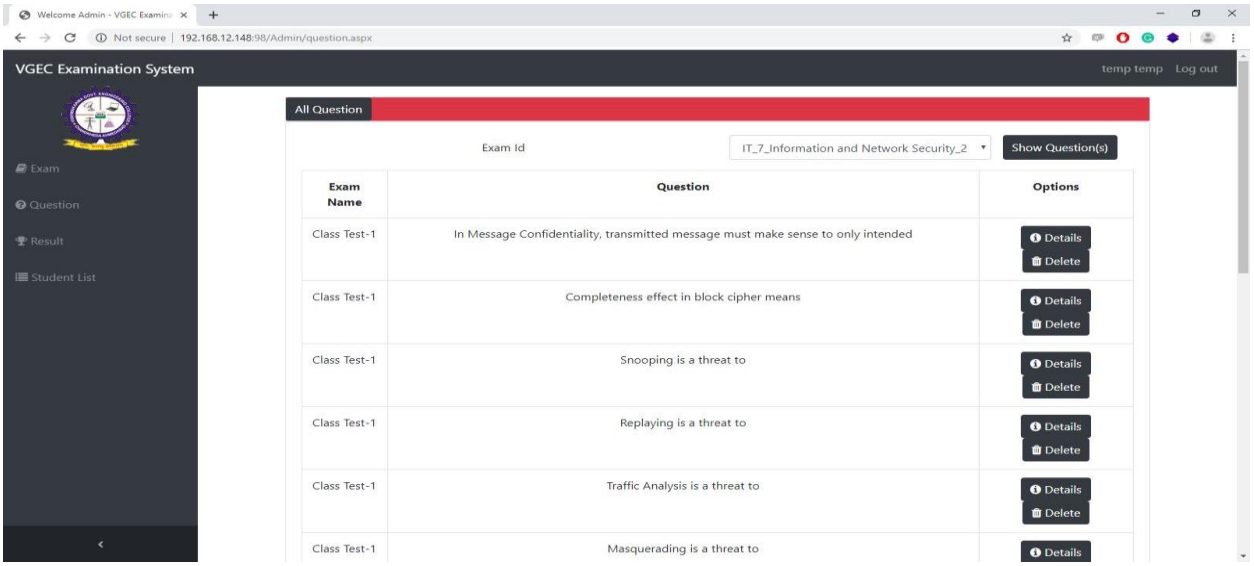
3.3.6 Snap-Shots

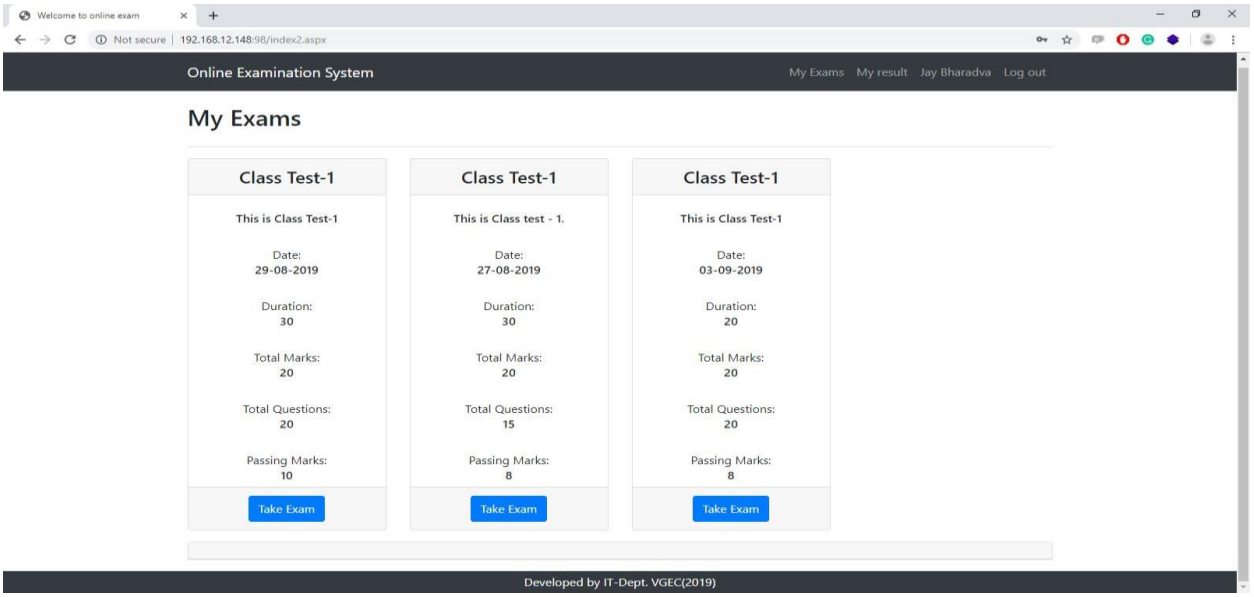







Dashboard
Add Faculty
Add Subject
Recovery Email
New term started?
Change Password
Add Students
Exam Report
Change Enrollment
Show Students
Select Branch
Select branch
Select Semester
Select Semester
Select Pass Out Year
Select Year
Start Date
End Date
Generate Report


VGEC Examination System
temp temp Log out
Exam
Question
Result
Student List
All Question
Exam Id
IT_7_Information and Network Security_2
Show Question(s)
Exam Name
Question
Options
Class Test-1
In Message Confidentiality, transmitted message must make sense to only intended
Completeness effect in block cipher means
Snooping is a threat to
Replaying is a threat to
Traffic Analysis is a threat to
Masquerading is a threat to
Details
Delete


Online Examination System
My Exams
My result
Jay Bharadva
Log out
My Exams
Class Test-1
This is Class Test-1
Date: 29-08-2019
Duration: 30
Total Marks: 20
Total Questions: 20
Passing Marks: 10
Take Exam
Class Test-1
This is Class test - 1.
Date: 27-08-2019
Duration: 30
Total Marks: 20
Total Questions: 15
Passing Marks: 8
Take Exam
Class Test-1
This is Class Test-1
Date: 03-09-2019
Duration: 20
Total Marks: 20
Total Questions: 20
Passing Marks: 8
Take Exam
Developed by IT-Dept. VGEC(2019)

4. Conclusion

4.1 Advantages

- Time Efficient:
  Decreases the time taken for generating exam and result processing.
- Dynamic Website:
  The system will be platform-independent. Every faculty and student will be provided with a username and password.
- One time investment:
  The faculty is required to insert the data once per admission.
- Relational Database:
  Can store a large amount of data with normalized relationship and constraints.
- No Paper Waste:
  Decreases the paper waste as it is done digitally.

4.2 Results

- Digitized dynamic website
- Good look and feel of the UI based application
- Well Structured data hierarch

4.3 Scope of future work

- Providing statistics of student result.
- Data mining from the past data about the average performance of students in a specific CO and on what topics of a subject the department need to work more on.

4.4 Limitations

- Electricity dependent
- Server failure (Server load)

1. Periodic Progress Reports (PPR)

Periodic Progress Report : First PPR

1. What Progress you have made in the Project ?

Our project is completely based on College exams. Our users will be our colleges faculties and students. We have gathered requirements from faculties regarding the project. We are using dot net technology with bootstrap for our project. We have created home page, login pages and some other working pages Up till now.

2. What challenge you have faced ?

Since this is a college examination based project, we are gathering requirements from every faculty. Every Faculty has his/her different points of view. So, we have to decide the optimum way for our Website. We have started to make the project. Technology we are working with is Dot net and some Bootstrap support. Bootstrap is completely new for us.

3. What support you need ?

Strong skills for programming, database... plans, report making, presentation A System with good performance. Good team members. good communication skills for requirements gathering. best practice for implementation.

4. Which literature you have referred ?

Google(StackOverflow, Microsoft .Net Support, W3School).

Periodic Progress Report : Second PPR

1. What Progress you have made in the Project ?

We met with more faculties. We understood their requirements. According to that weve improved design of our pages and functionality of some pages.reated home page, login pages and some other working pages Up till now.

2. What challenge you have faced ?

We got Errors regarding database operations..

3. What support you need ?

A good database and good skill.

4. **Which literature you have referred ?**

   Google (Stakeoverflow, Microsoft website).

Periodic Progress Report : Third PPR

1. **What Progress you have made in the Project ?**

   Student side question page has been created with good UI. and some efficient rewriting of code to make our website fast.

2. **What challenge you have faced ?**

   optimization in coding to make it more reliable and fast.

3. **What support you need ?**

   Good skills in the database to make an efficient query and optimize it.

4. **Which literature you have referred ?**

   Google (StackOverflow, Microsoft .Net Support, W3School).

Periodic Progress Report : Fourth PPR

1. **What Progress you have made in the Project ?**

   Admin and faculty side design has been completed with some important features working.

2. **What challenge you have faced ?**

   Complex page design.

3. **What support you need ?**

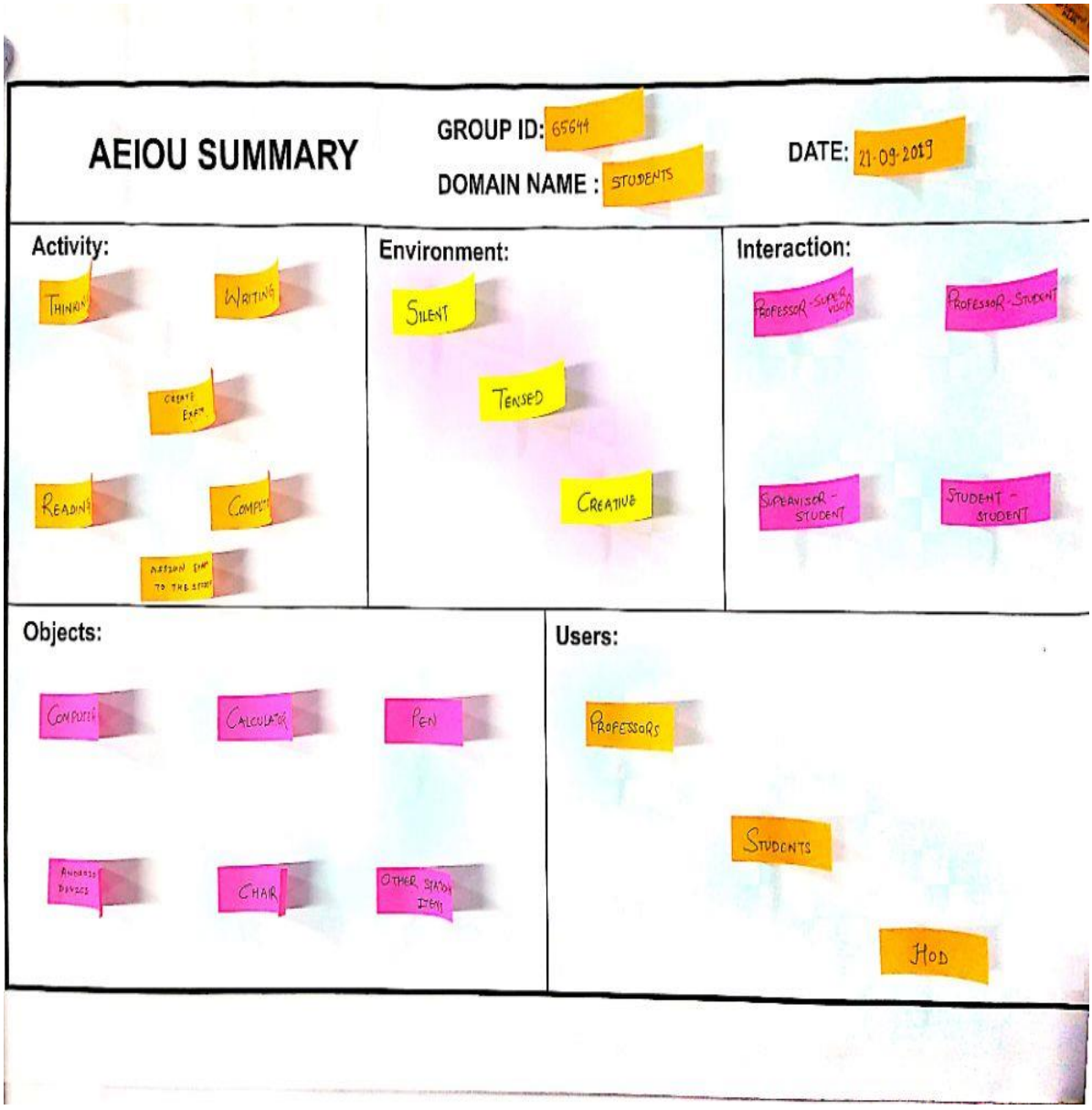
   Bootstrap for a good layout.

4. **Which literature you have referred ?**

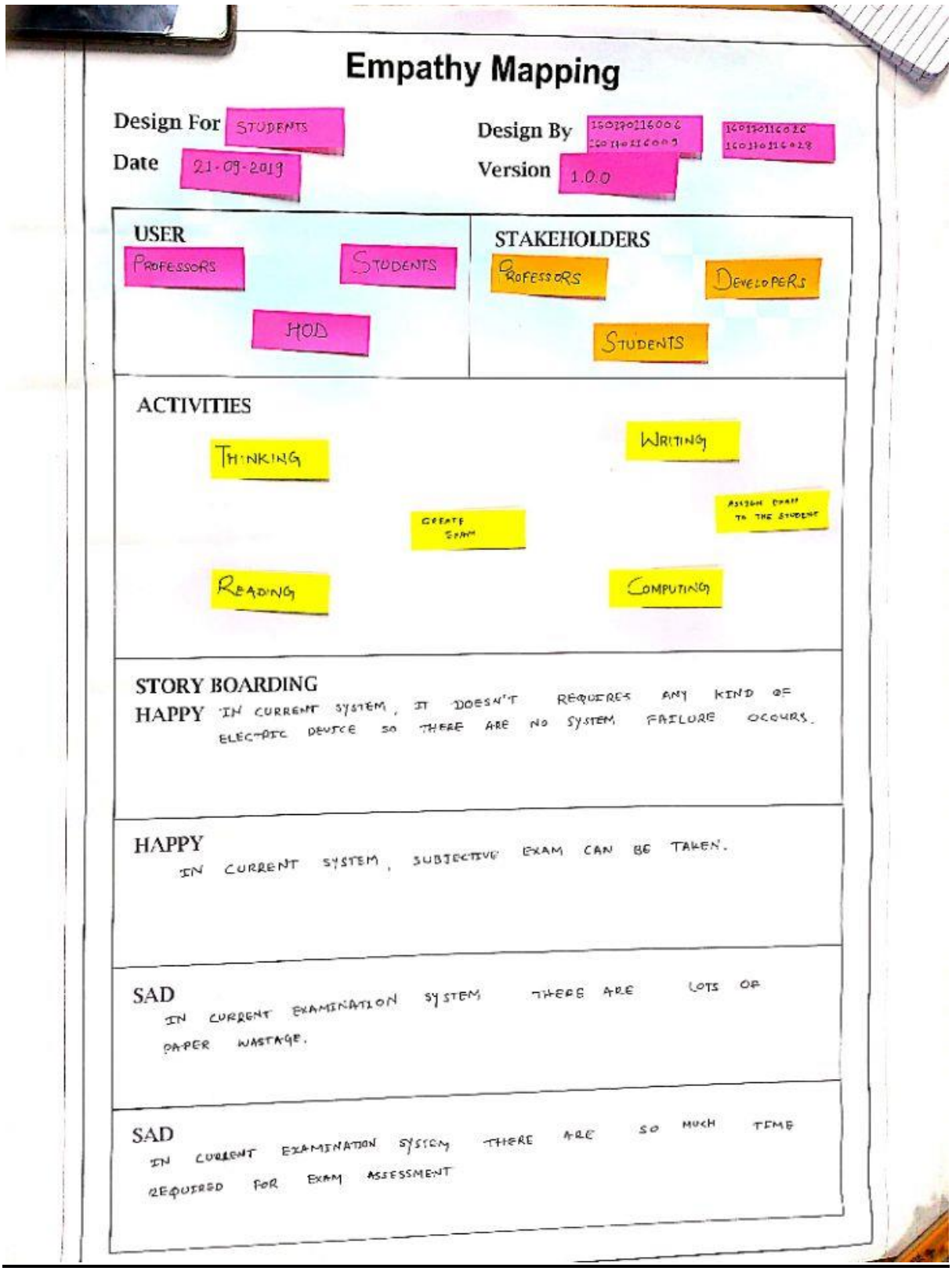
   Google (StackOverflow, Microsoft .Net Support, W3School).

3. Design Engineering Canvas

3.1 AEIOU Canvas

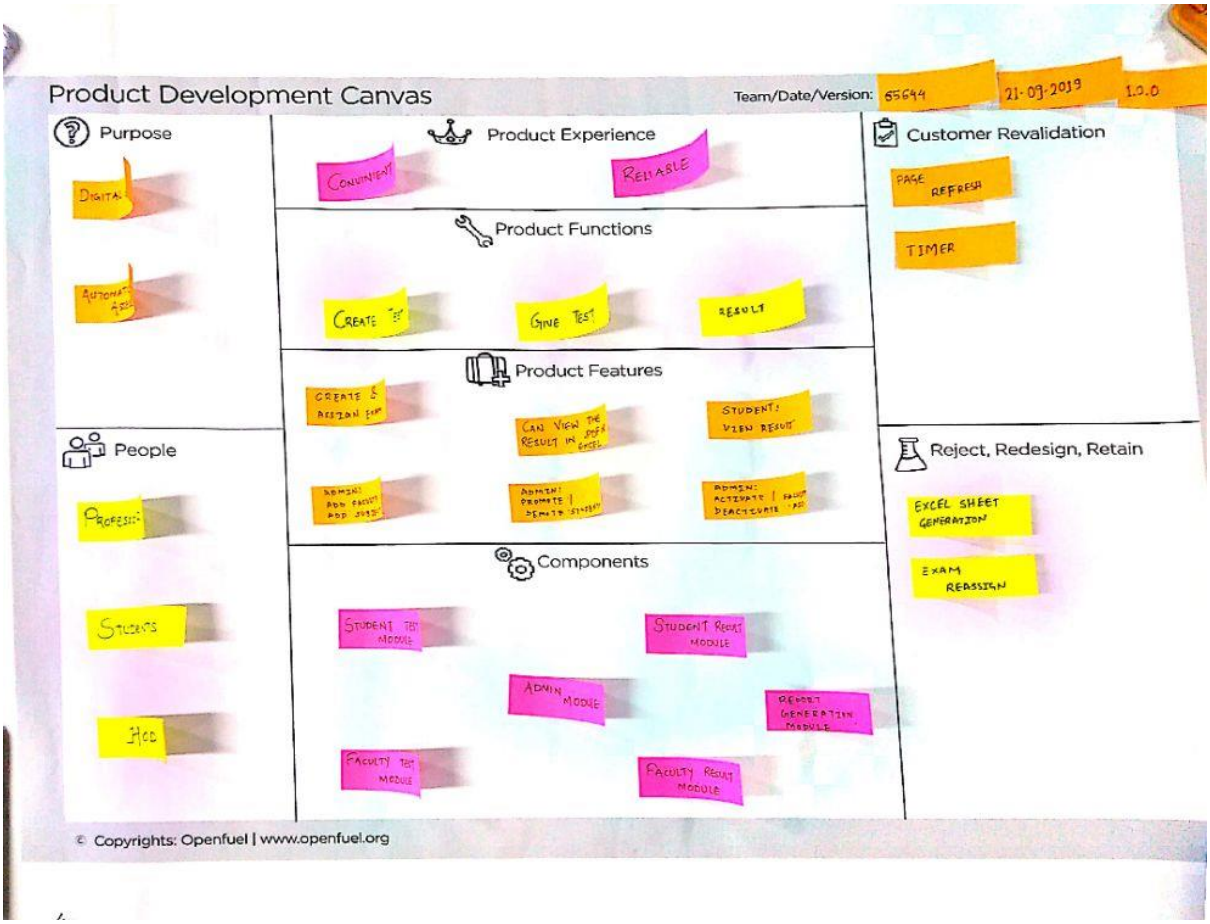


3.2 Empathy Mapping Canvas



3.3 Ideation Canvas

3.4 Product Development Canvas



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