Department of Information Technology

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UNIVERSITY OF MUMBAI

Academic Year 2020-2021

A Project Report on

Question Paper Generation at a Click Supporting Outcome Based Learning

Submitted in partial fulfillment of the degree of

Bachelor of Engineering(Sem-8)

in

INFORMATION TECHNOLOGY

By

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Under the Guidance of

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1.Project Conception and Initiation

1.1 Abstract

- Assessment process is an essential activity in educational institutions to test performance of the learners. The essence of examination papers is directly linked to evaluation of quality of the graduates passing out.
- Nevertheless, designing question papers is laborious/tedious task for the teachers. This system is aimed to replace manual method practiced by academics.
- This system intends to enable academics to produce quality examination papers on the click, that are unbiased, streamlined, randomized and secure while saving the time and resources in the assessment process.
- We have 2 types of user- Admin, Faculty.
- Admin: to Add, Modify, Delete users and store their information in database
- Faculty: to Add Questions and save them in Question bank database; Generate question paper and Export the generated Question Paper. System returns generated paper and exports it into user’s computer.

1.2 Objectives

- Question entered in the database should cover the Syllabus.
- Question Paper formed should address the desired Course Objectives
- Question Paper formed should be confirmed by the NBA co-ordinator.

1.3 Literature Review

Paper Title : Automatic Generation of Question Paper from User Entry Specifications using a Semantically Tagged Question Repository

Authors: Gauri Nalawade, Rekha Ramesh

Publication details : 2016 IEEE Eighth International Conference on Technology for Education (T4E). doi:10.1109/t4e.2016.038

Findings:

- The proposed system automatically generates the question paper from this semantically tagged question repository. Since
- The existing systems are rigid and lack the flexibility of supporting all types of tags and also have Security Issues.
- The system supports all four tags and also flexible enough to provide an interface that allows user to enter specifications for each tag/property in the form of lower and upper bounds.
- Each property is specified with a range indicating that value should not be lower than minimum value and not exceed the maximum value of the range.
- It is rule base system which takes all the combinations of the tags and generates output based on the rule applicable. The output is generated in xml format and in word document.

1.3 Literature Review

Paper Title : Choosing the right LMS: A performance evaluation of three open-source LMS

Authors: A. C. Caminero, R. Hernandez, S. Ros,A. Robles-G´omez, Ll. Tobarra

Publication details :Caminero, A.C. ; Dept. de Sist. de Comun. y Control, Univ. Nac. De Educ. a Distancia, Madrid, Spain ; Hernandez, R. ; Ros, S. ; Robles-Gomez, A. , “Choosing the right LMS: A performance evaluation of three open-source LMS”, Global Engineering Education Conference (EDUCON), 2013 IEEE, March 2013

Findings :

- The existing Learning Management Systems (LMS) support very basic level or limited tags such as question types.
- Even the most preferred LMS, Moodle allows creating only subjective/objective type of questions.
- Thus automatically generating question paper from a teacher’s entered specification using a semantically tagged QR is the need of the hour today.
- The comparative study shows that Moodle is best LMS to support large number of users and also for any educational institution.

1.3 Literature Review

Paper Title :BLOOM’S TAXONOMY-BASED EXAMINATION QUESTION PAPER GENERATION SYSTEM.

Authors: Yulia Timakova FTMS College, Kinn Abass Bakon FTMS College

Publication details: International Journal of Information System and Engineeringwww.ftms.edu.my/journals/index.php/journals/ijiseVol.6 (No.2), November, 2018ISSN: 2289-7615DOI: 10.24924/ijise/2018.11/v6.iss2/76.92

Findings :

- This study involved overview of the assessment process and Bloom’s Taxonomy
- Discussed advantages of information systems in assessment and several assessment generation systems were evaluated.
- Survey was conducted to collect data from teachers to determine the issues and develop more efficient alternative.
- Automated system prototype was developed as a basic desktop application in Visual Studio environment with functions such as secure login, question bank and generation algorithm to serve the main purpose of speedy design of question papers aligned with learning outcomes based on Bloom’s Taxonomy hierarchy.

1.4 Problem Definition

- The existing system for Question Paper Generation requires human staff to chalk out questions that appear in the question paper. Question Paper creation is a tedious and time consuming task
- To create a system which reduces Human Working process and also The Instructor to generate and Save The Question Paper Automatically.

1.5 Scope

- Significantly reduces human involvement by processes automation
- Helps retain resources by performing tireless rigorous work of information processing, hence instructors can focus more on academic part rather than devote much time to question papers design.
- System allows for rapid data retrieval and manipulations to generate output on the click with minimum effort.
- Robust algorithm provides unbiased results due to random selection of questions and eliminates duplications.
- System offers concise storage of question items, question bank can cover wide range of subjects and question types
- Have a good user interface
- Be easy to operate
- Be easy to understand by the user and operator
- Be expandable

1.6 Technology stack

HARDWARE

- Processor type: Minimum:- Intel Pentium 3/ Pentium 4

  Recommended:- Intel Core 2 duo or higher

- Processor Speed:- 2.1Ghz or more
- RAM:- Minimum:- 2GB DDR3 RAM

  Recommended:- 4GB DDR3 RAM

- Hard Disk Space:- 160GB Hard Disk space

1.6 Technology stack

SOFTWARE

- Operating System: Windows XP/2000/Vista/7/8/10 or Linux or MacOS
- Languages used: PHP, JavaScript, HTML, CSS, XML
- Algorithm Used- Shuffling Algorithm
- Database:- MySQL Database
- Browser:- Testing Environment
- WAMP or XAMPP Server

2. Project Design

2.1 Proposed System

- **Working of the Proposed System:**

- User can register itself on the system on the registration page, wherein the user has to enter name, Email id and Password
- Before user is able to access system, it is necessary to pass the authentication step through login form where user must enter the correct username and password given by system administrator. If user has administrator role, login form will redirect to Admin Portal. If login details match a Faculty role, user will be redirected to Faculty Portal.
- The user can login to the portal using the login form where the authorized user is allowed to login. the user needs to enter username and the password. The user can be of 2 types. Here its either the faculty or the admin.

2.1 Proposed System

- **Working of the Proposed System:**

If the user is admin then the privileges are :-

1) Faculty details : In this admin has the power to approve or disapprove faculty or even delete faculty on clicking the respective button.

2) Branch details: In this the new branches can be added using the branch name and click on the add branch button.it can be checked with the list given below. It can also be deleted later if no longer required.

3) Add subject: In this new subject can be added by entering new subject name, choosing the respective branch and finally click on the add subject button.

4) View subject: view the list of subjects available. Admin can also search using subject name. Or delete it.

5) Assign subject: click on the dropdown menu, select the faculty from the list and click search. a box appears where the subject must be chosen and click on assign button.

6) Assigned subject details: it displays subject name, also it has the faculty record button which shows the list of faculty assigned to particular subject. Delete button is used to remove the faculty assigned to particular subject.

7) Generate Question Paper: Here the Admin needs to simply select the subject, the marks and choose the level and the number of questions in the Question paper and click on Generate Question Paper Button.

2.1 Proposed System

- **Working of the Proposed System:**

If the user is faculty then the privileges are:-

1) Add Questions: User can add question for a particular subject which is assigned by the admin to the user.

2) Display question: In this section user will see the questions entered by all the faculties and the user can also edit questions which are entered by him only.

3) Generate Question Paper: Here the Faculty needs to simply select the subject, the marks and choose the level and the number of questions in the Question paper and click on Generate Question Paper Button.

2.1 Proposed System

- **Working of the Proposed System:**

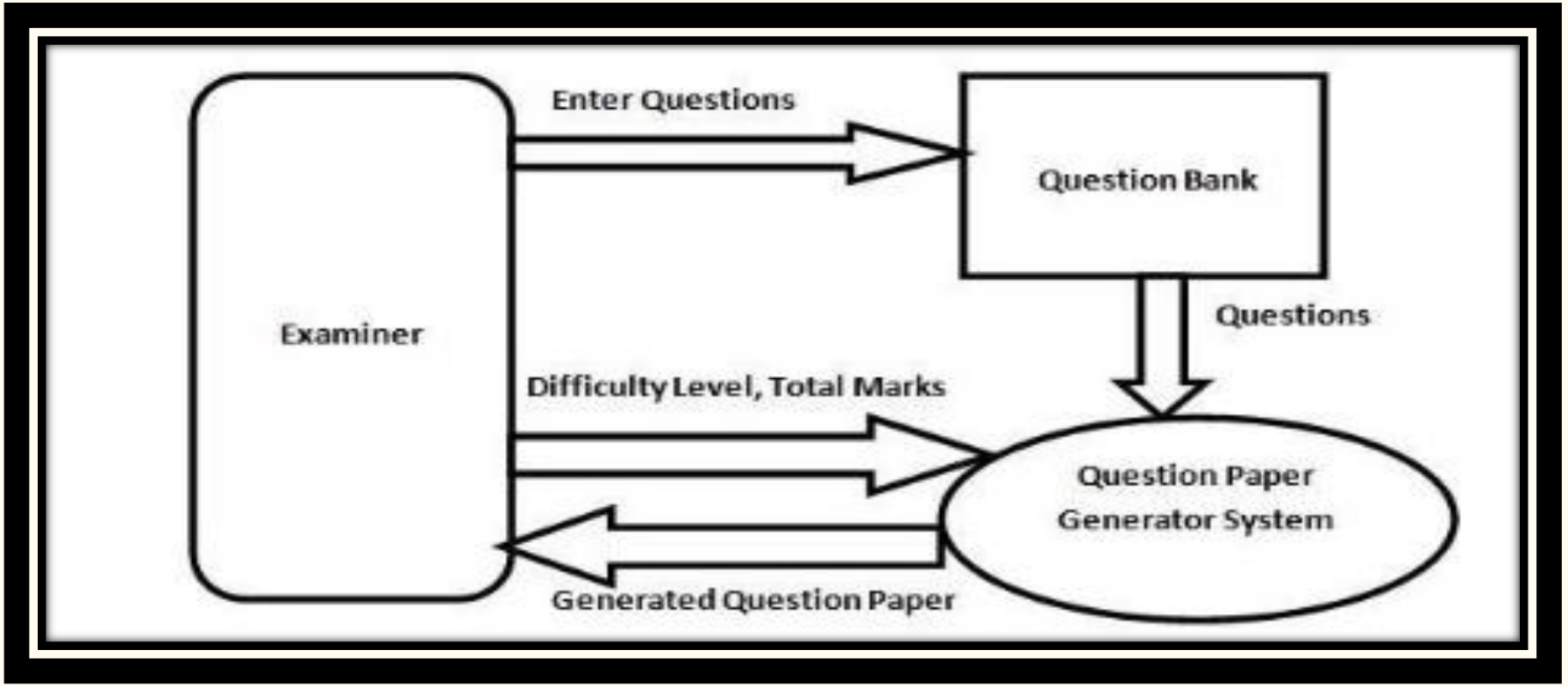
- The system retrieves questions from question bank using randomization and shuffling algorithm..
- This process is performed until the specified set of questions is retrieved. Upon receiving the specified set of Questions, the Faculty can select the required questions from retrieved set of Questions to form the Question Paper.
- After this the System checks the redundancy of the question’s i.e. whether or not it is repeated question or not.

2.1 Proposed System

- **Shuffling Algorithm:**

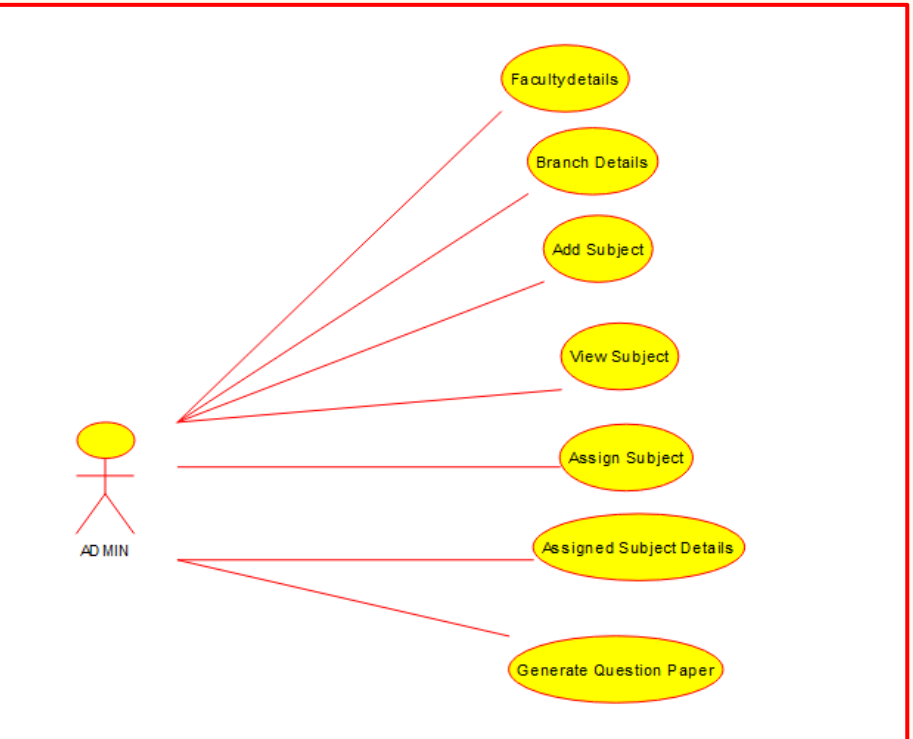
- Create an Array of N Location
- Generate Random Number
- If (loc==0)
- Store Generated Number
- Else
- Compare Generated Number with Previous Number in Array
- If matching value found, gotoStep 2
- Else
- Store the number in Next Location
- Repeat Step 2 for N numbers
- Select Question from DB matching with values from array location one by one.

2.2 Design(Flow Of Modules)

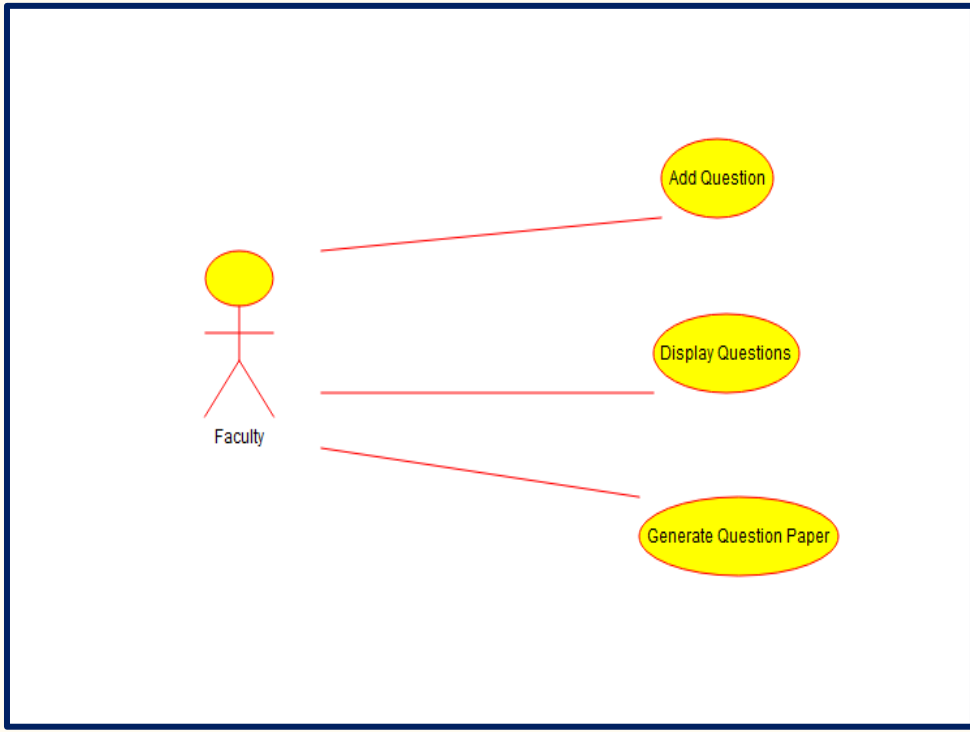


2.3 Description Of Use Case

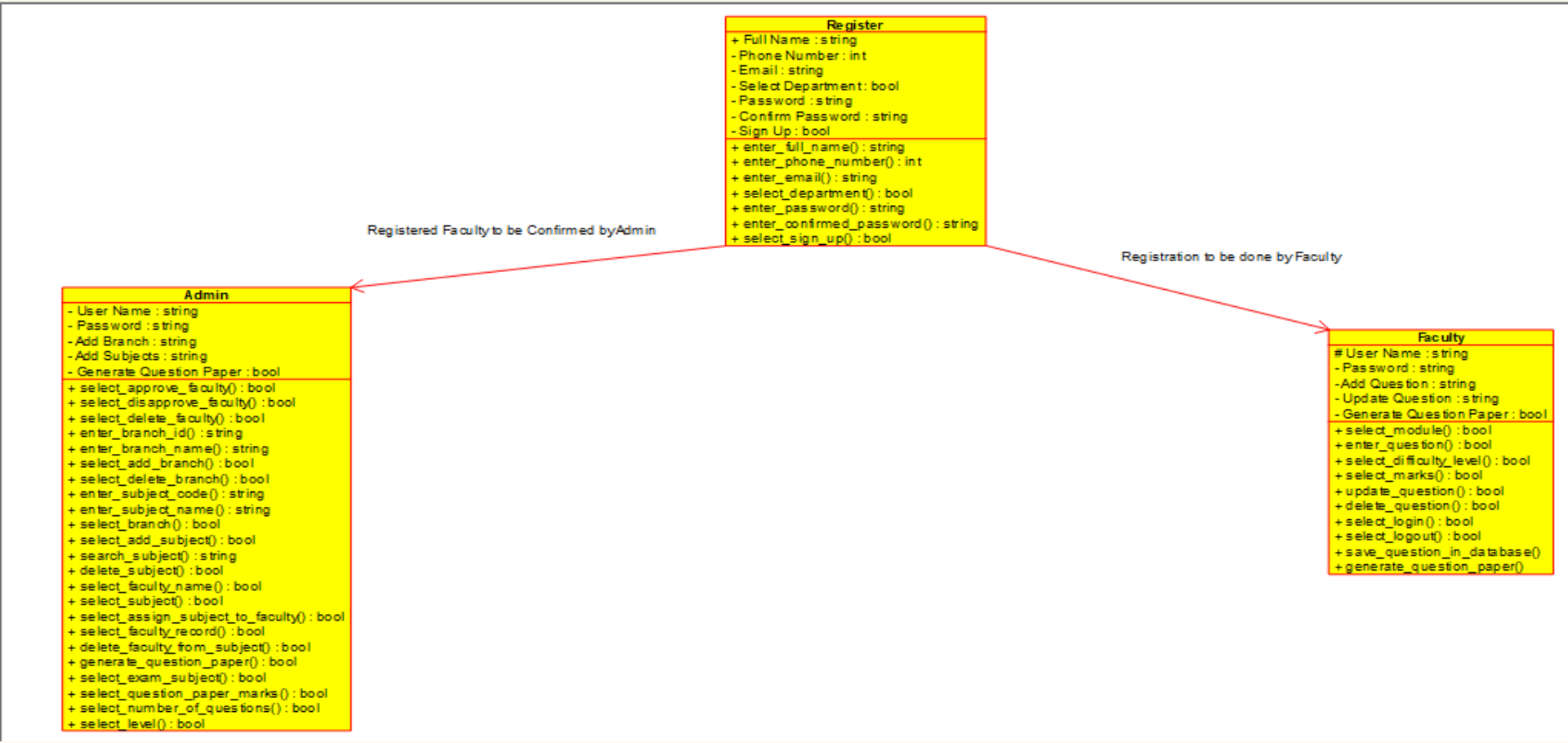
- Admin



- Faculty

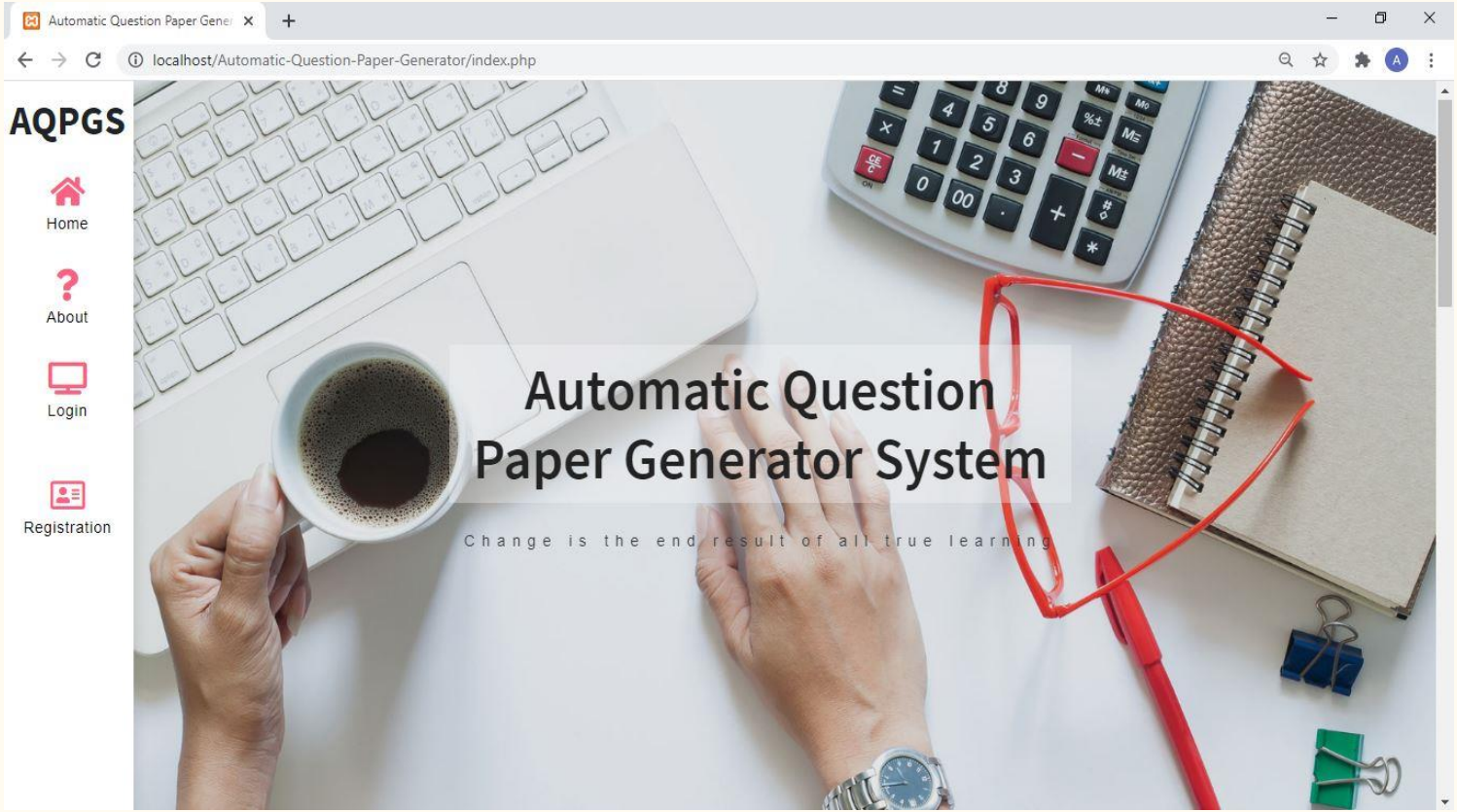


2.4 Class Diagram



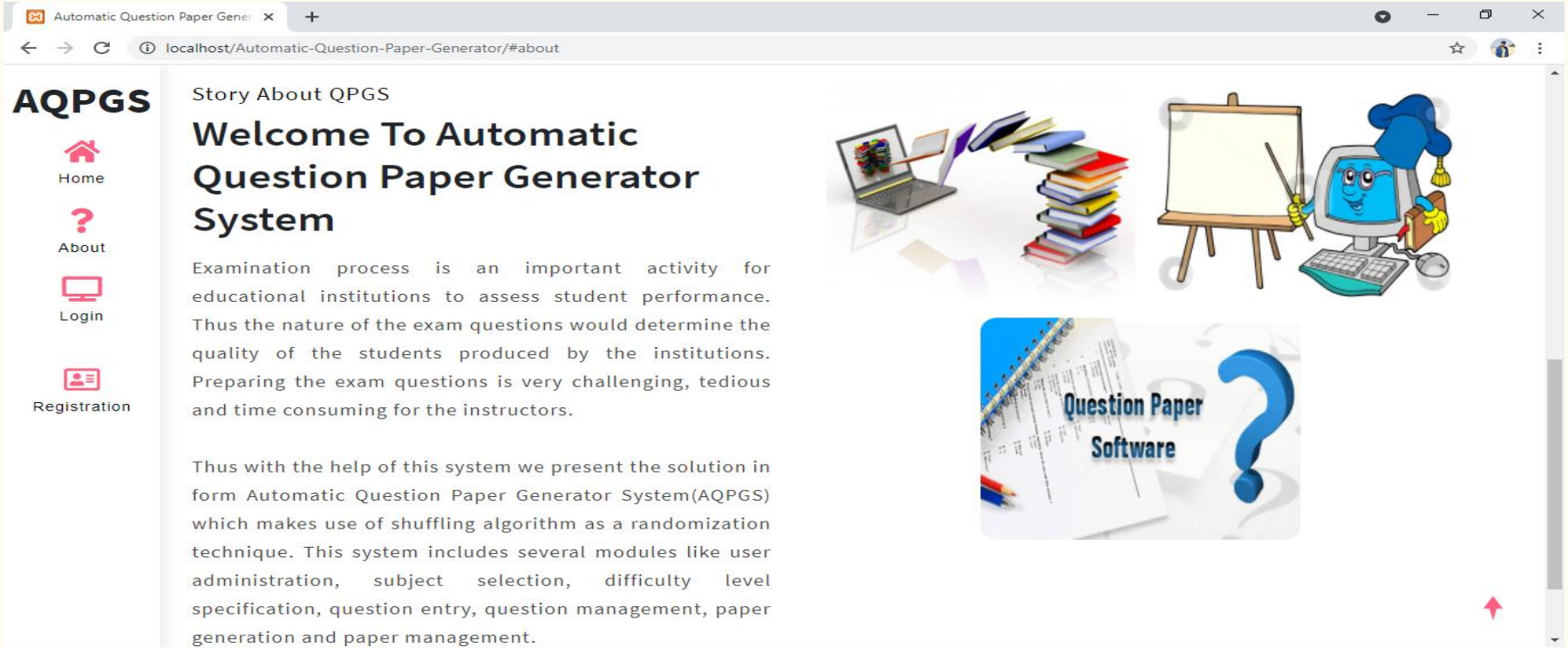
2.5 Module-1

Index Page



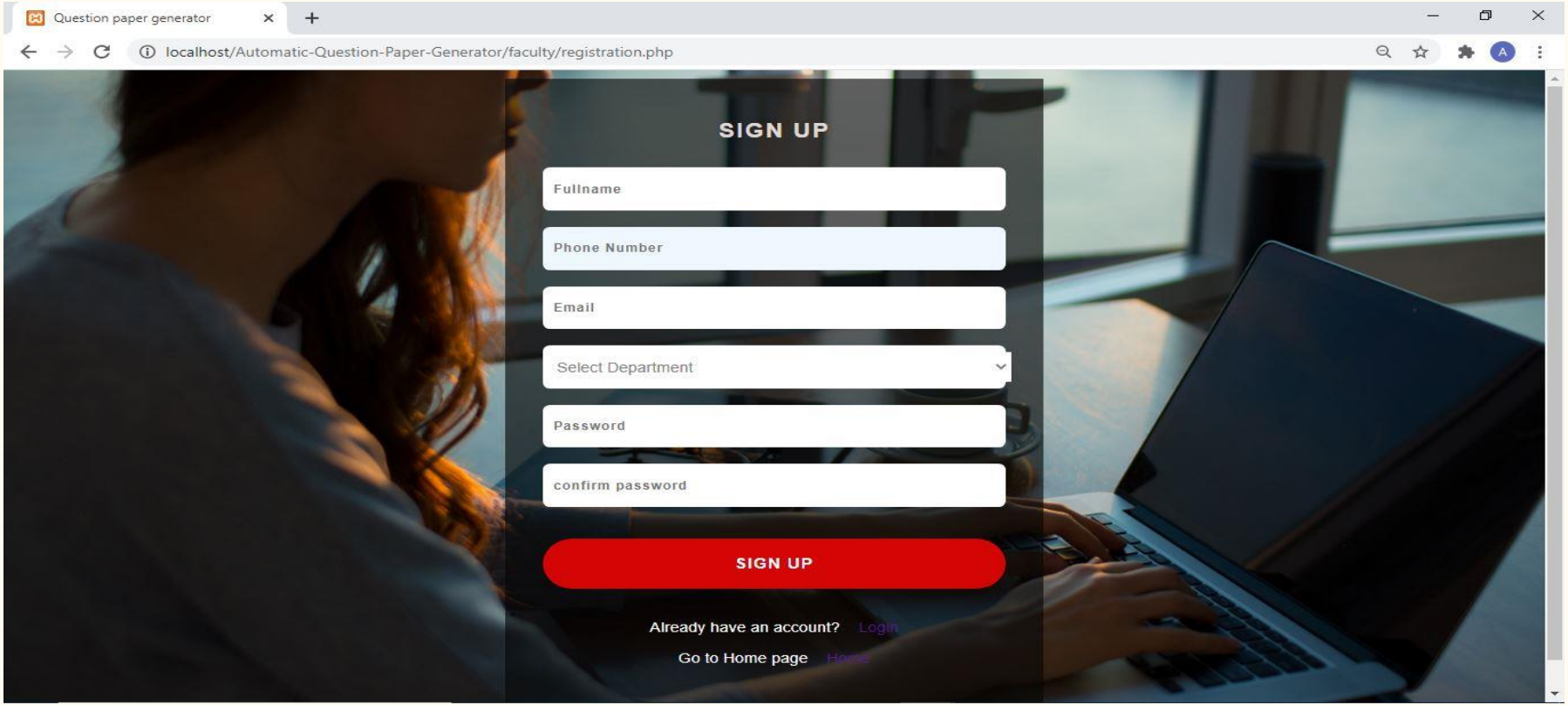
2.5 Module-1

About Page



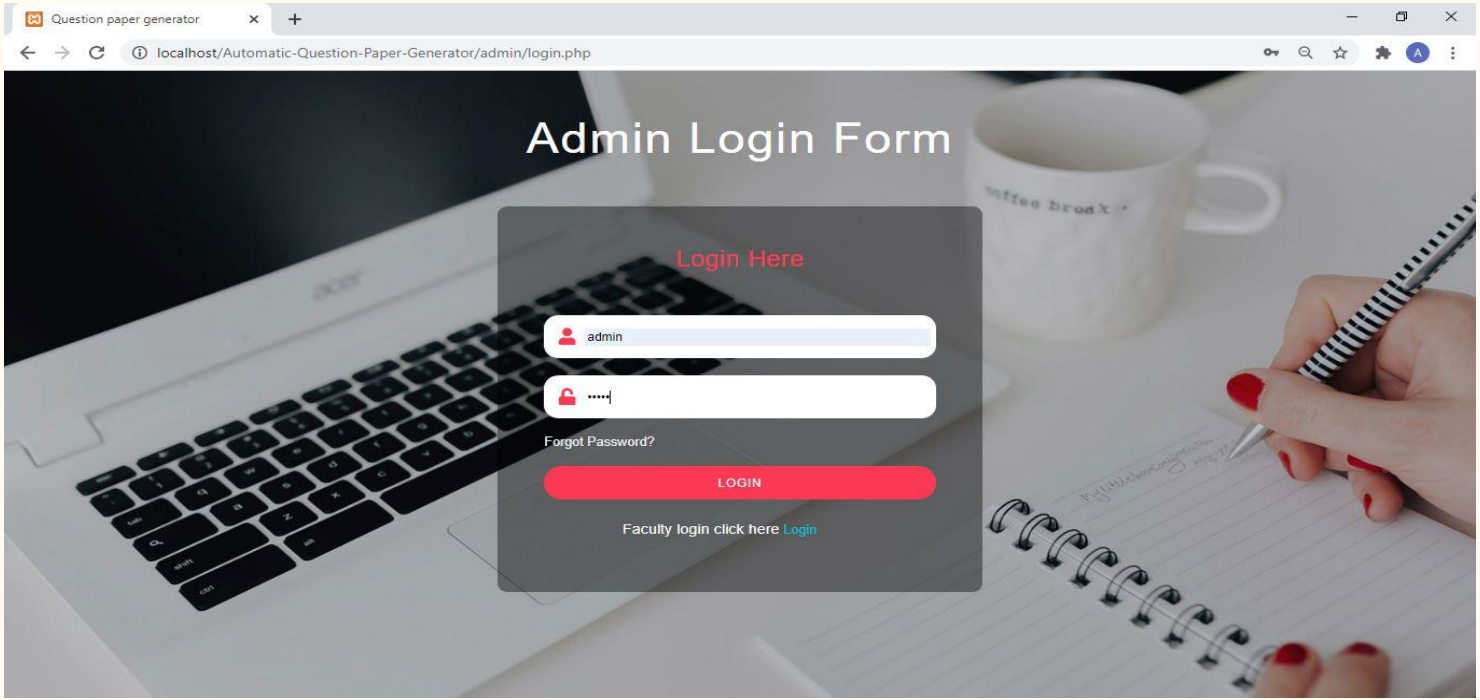
2.5 Module-1

Registration Page



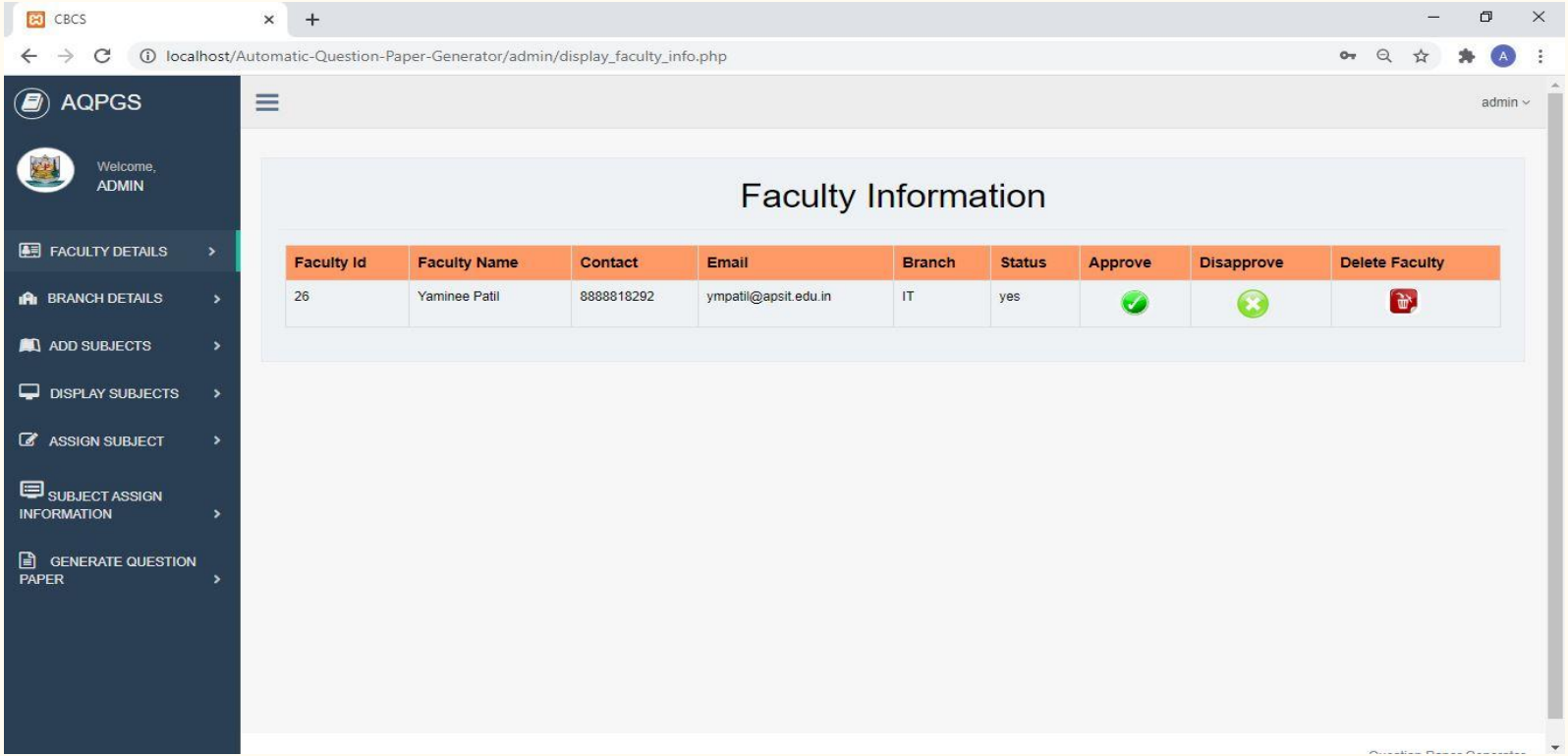
Module-2 : Admin

Admin Login Page



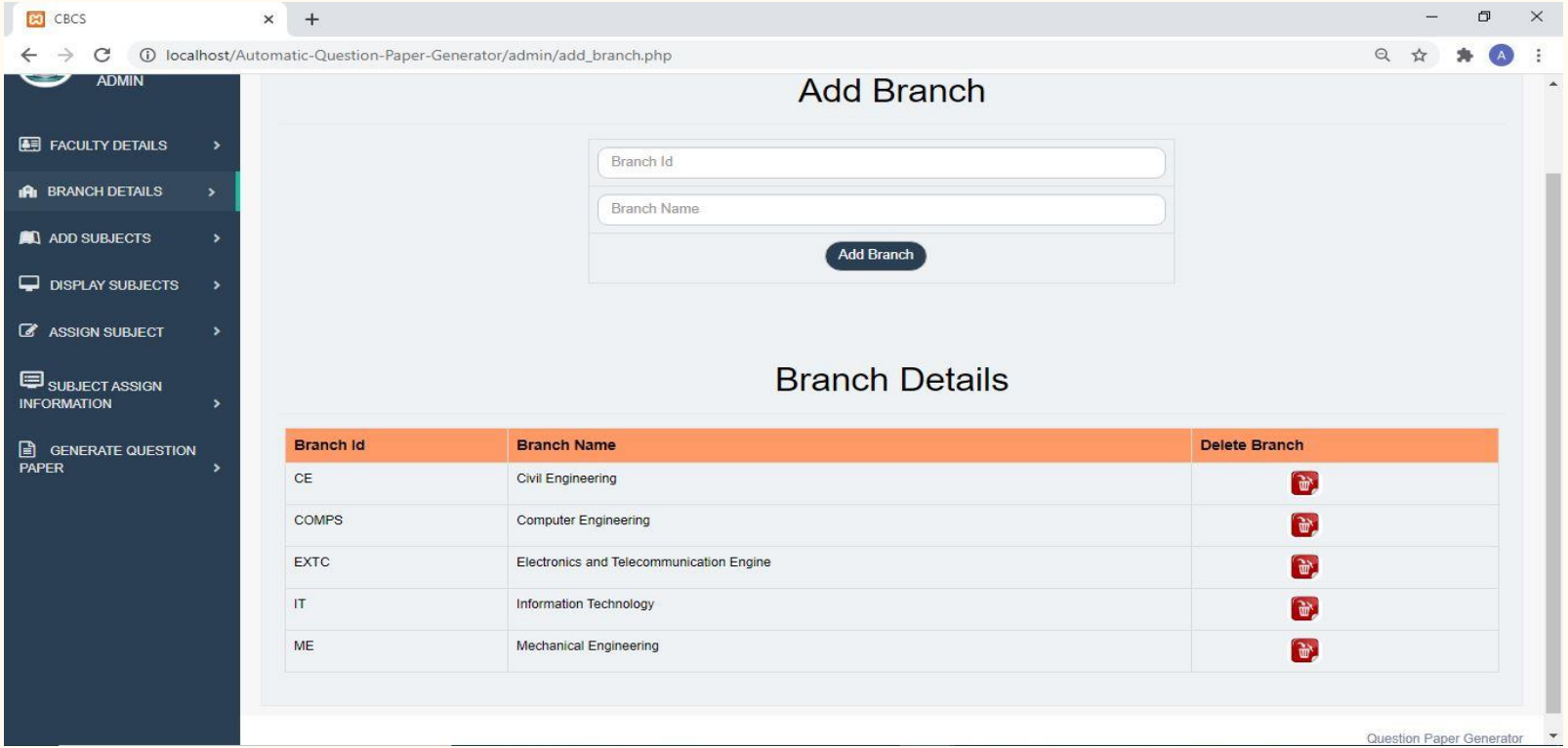
Module-2 : Admin

Faculty Details Page



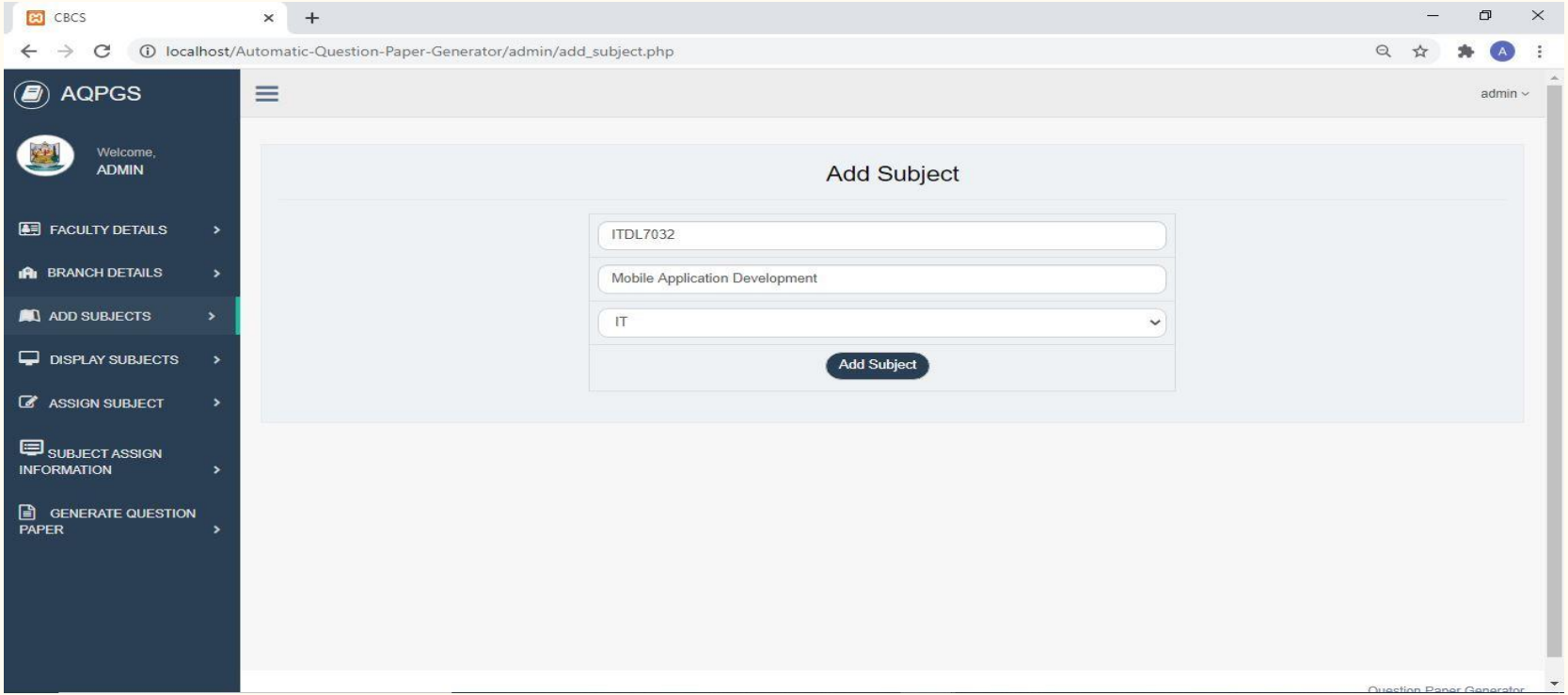
Module-2 : Admin

Branch Details Page



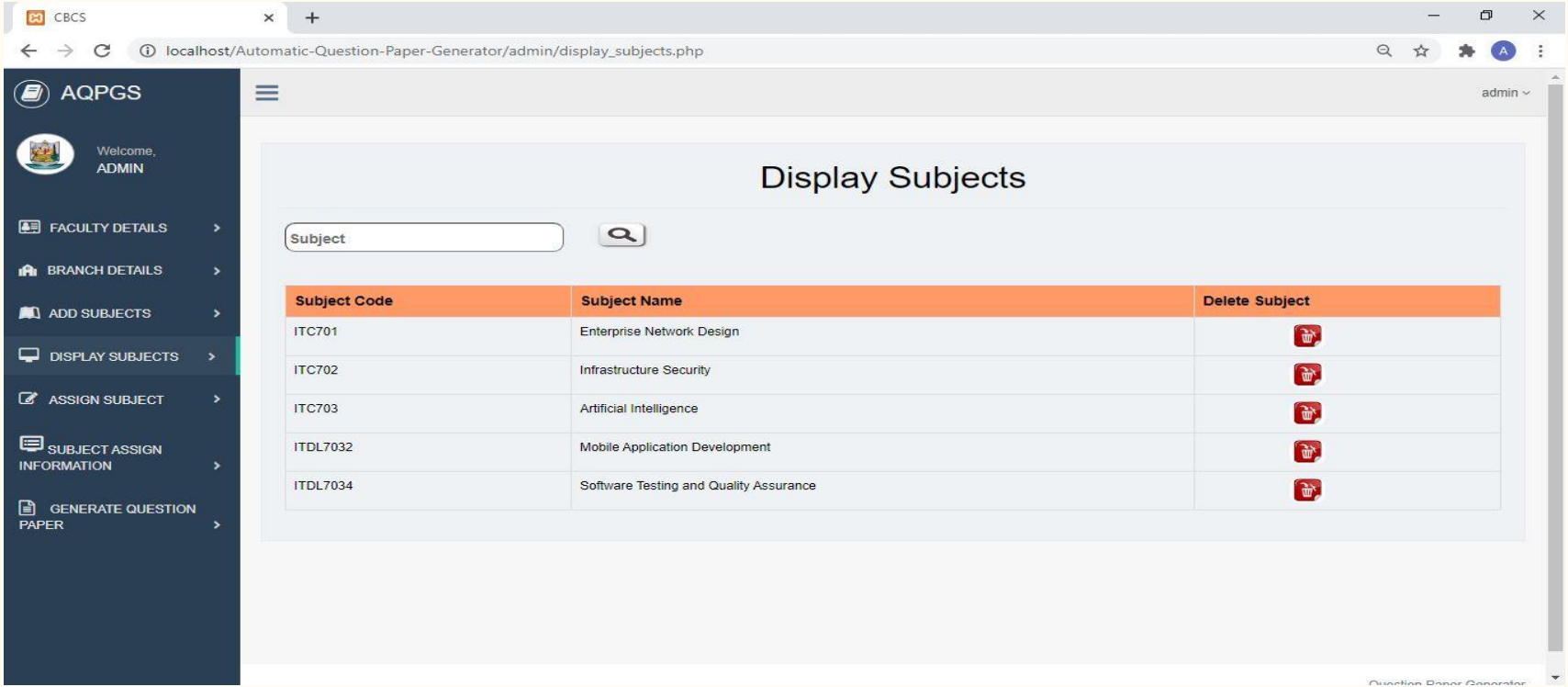
Module-2 : Admin

Add Subject Page



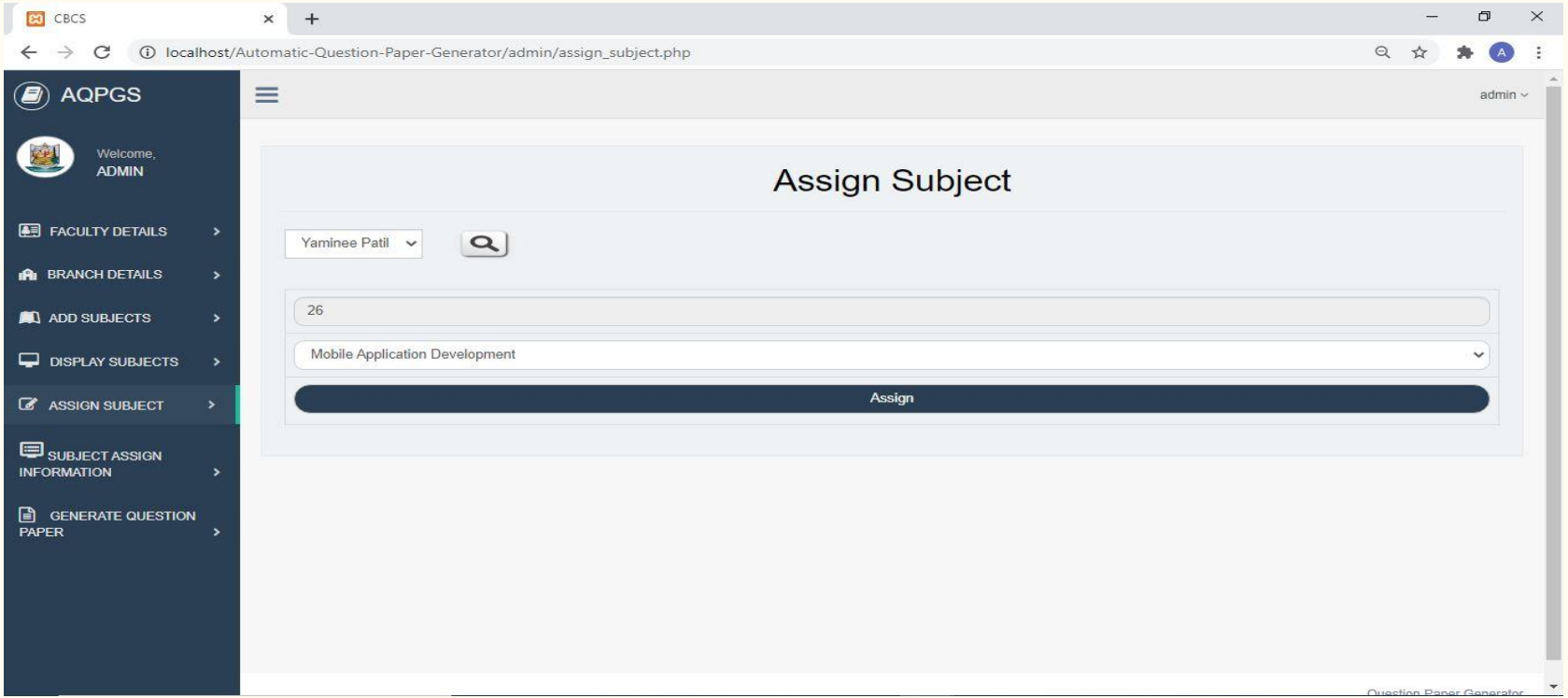
Module-2 : Admin

Display Subjects Page



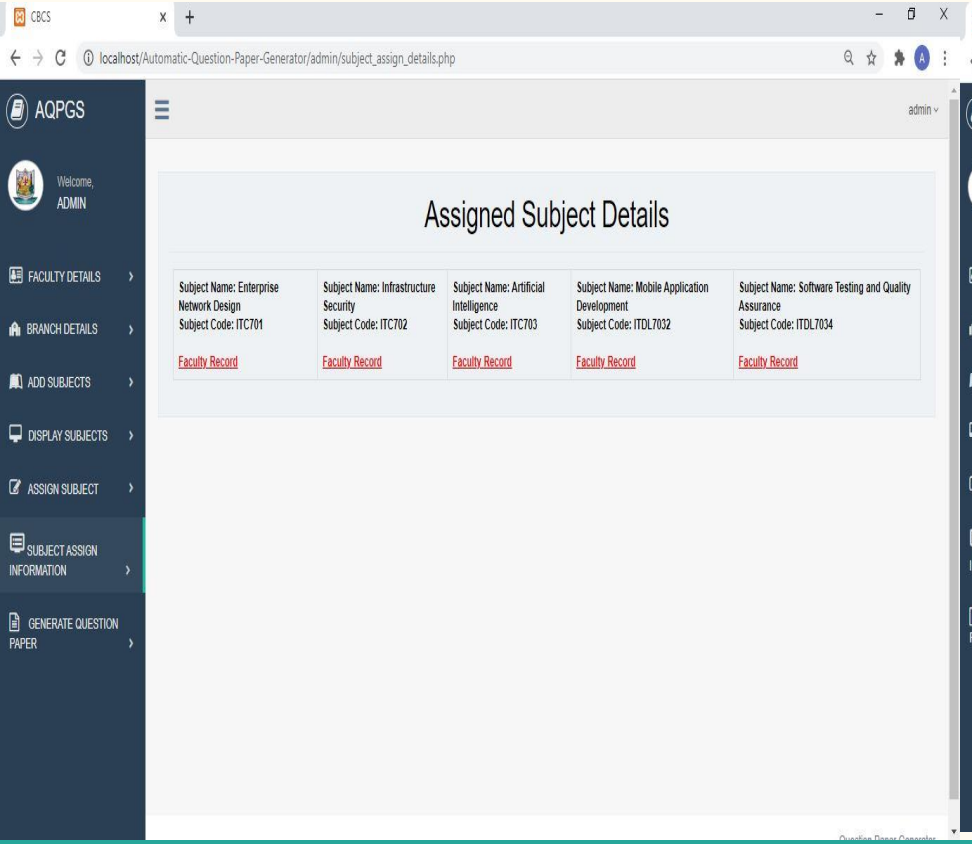
Module-2 : Admin

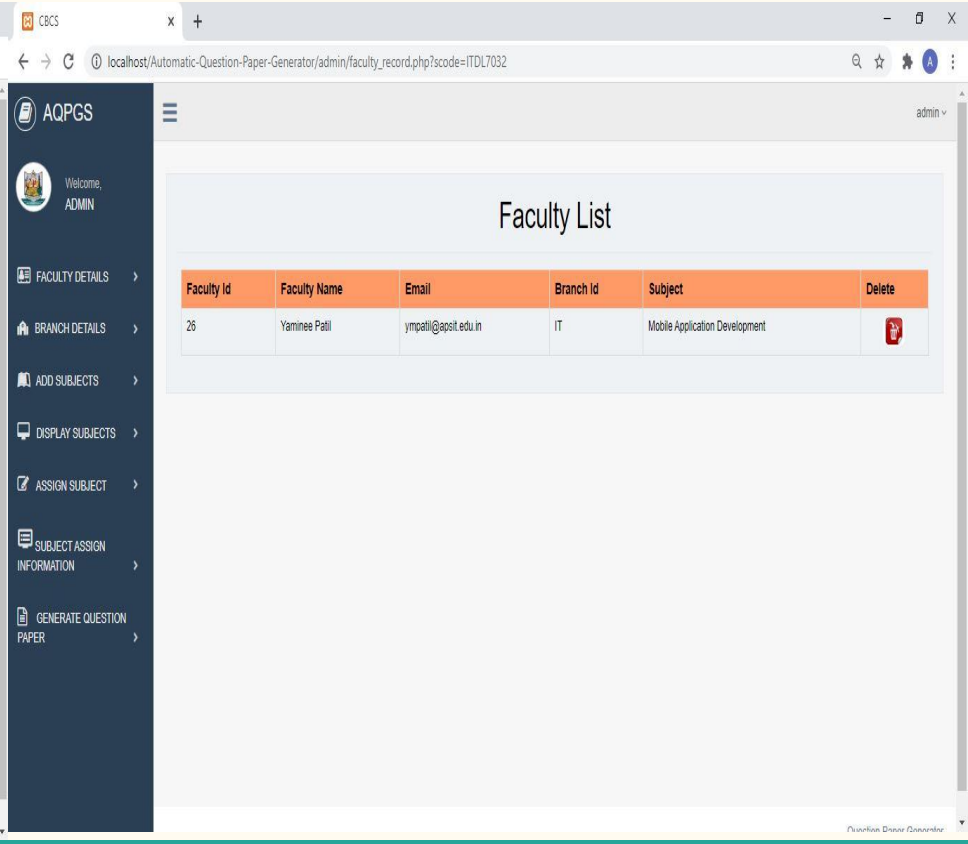
Assign Subjects Page



Module-2 : Admin

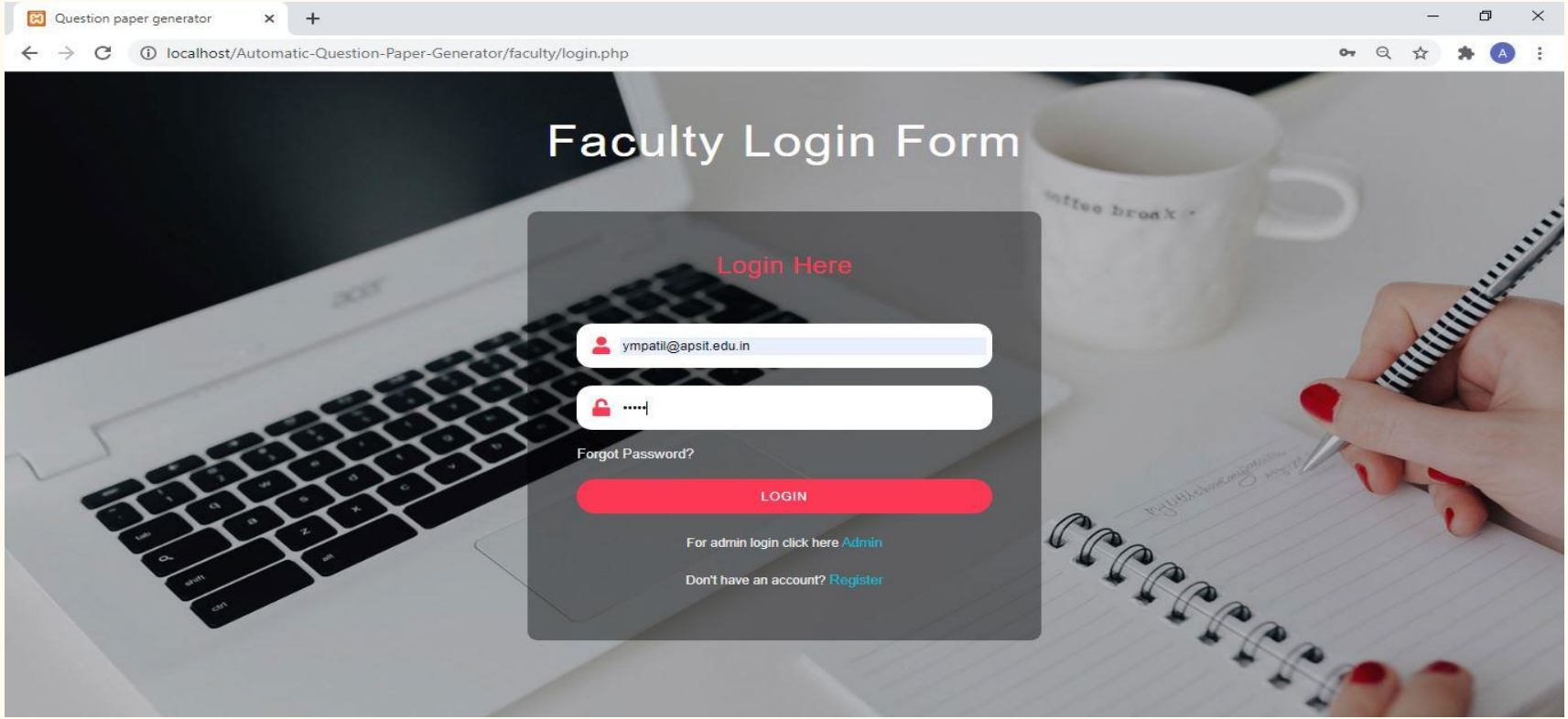
Subject Assigned Information Page





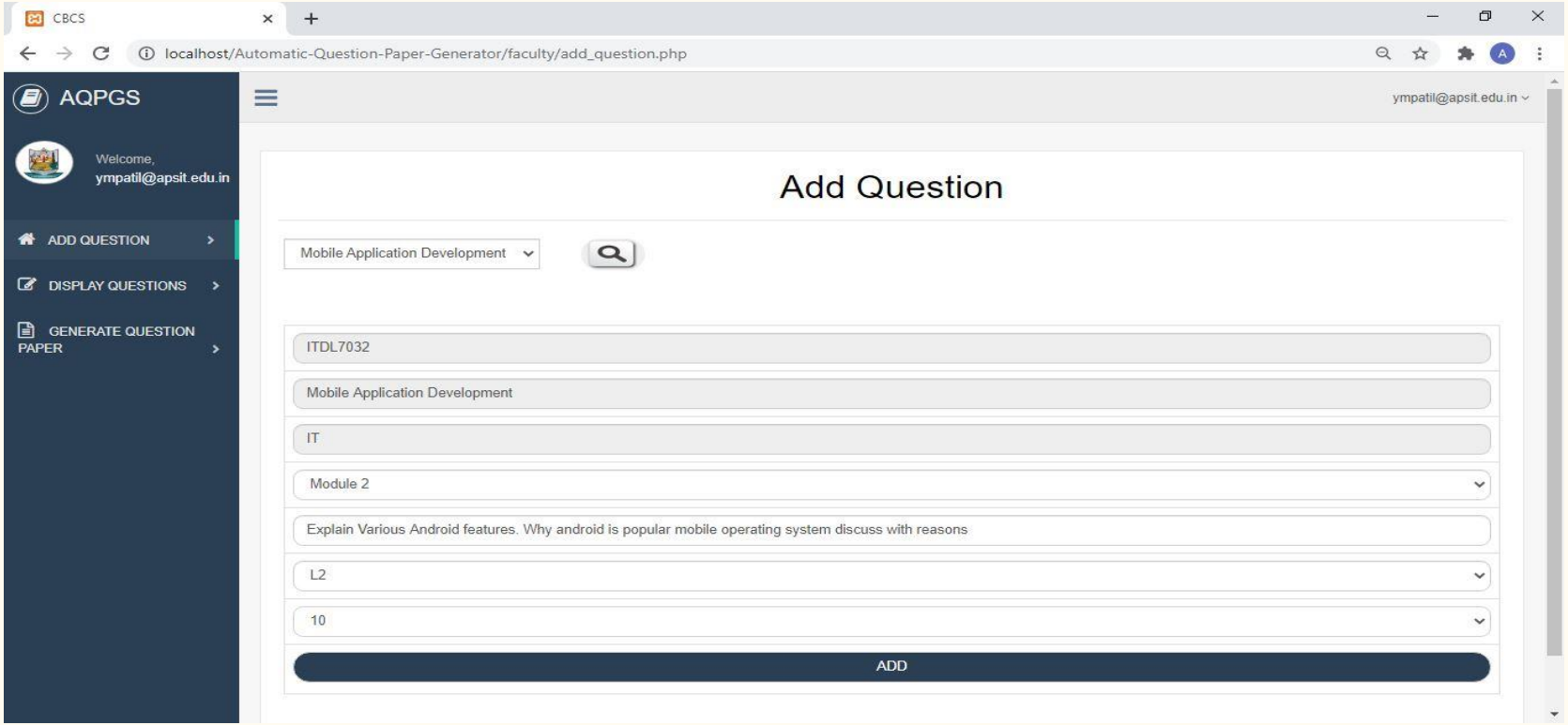
Module-3 : Faculty

Faculty Login Page



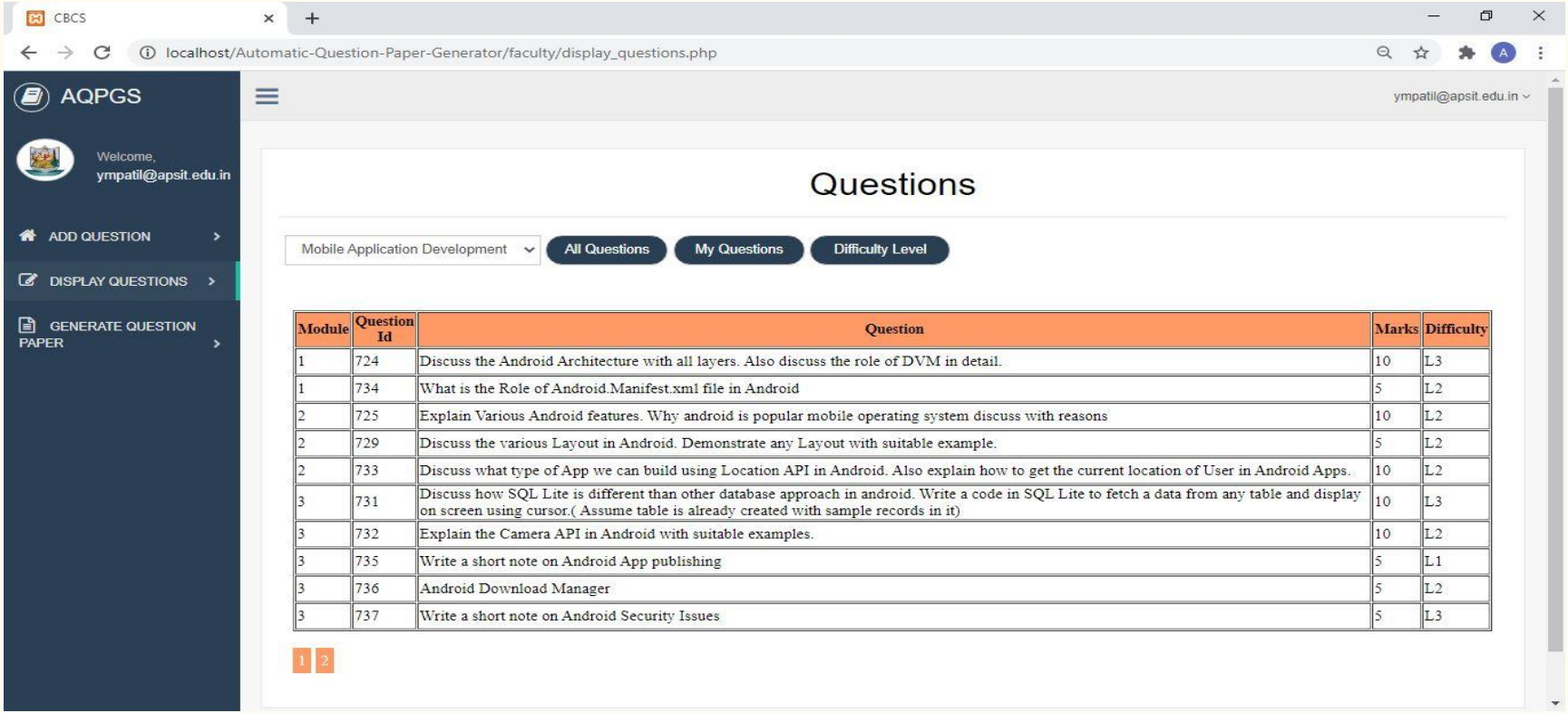
Module-3 : Faculty

Add Question Page



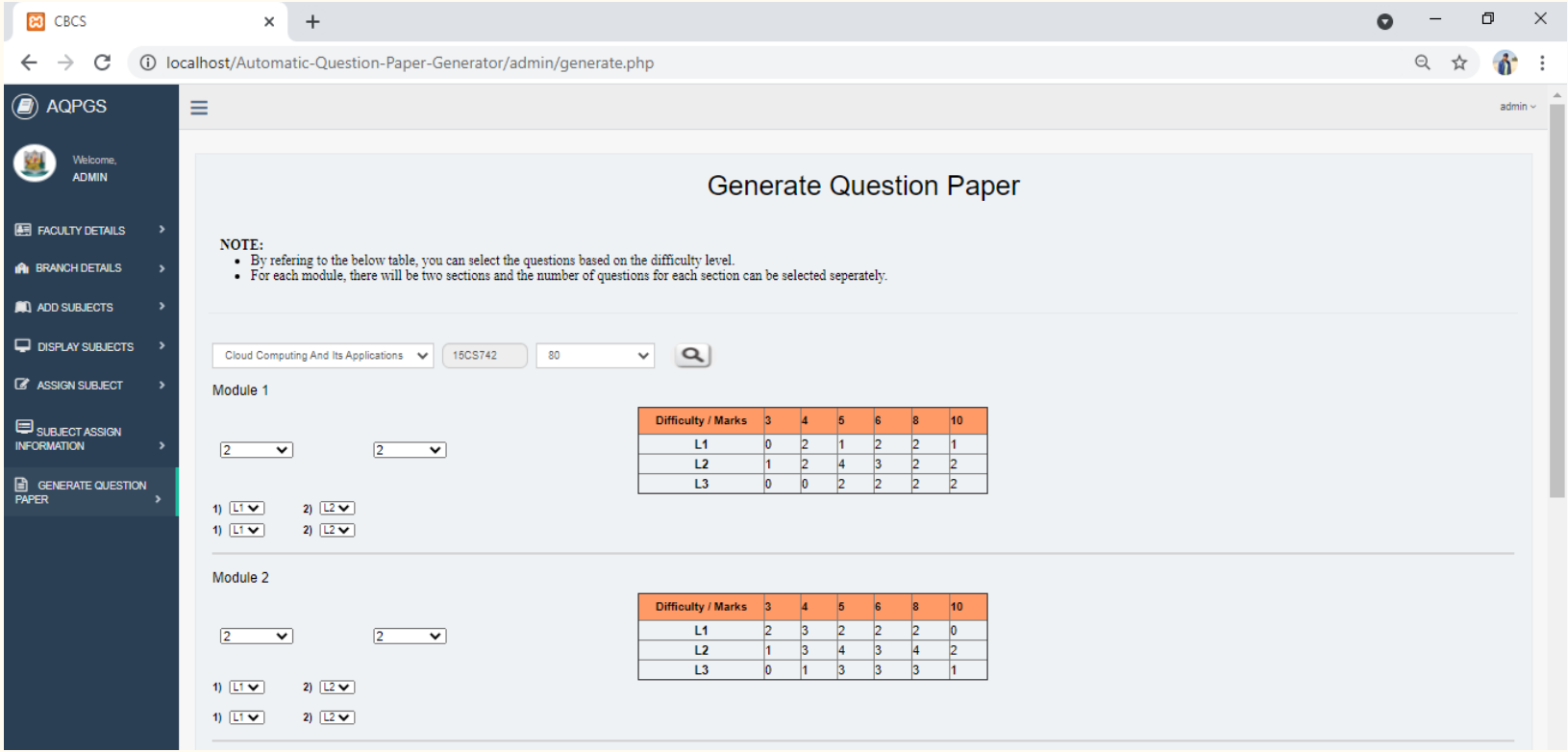
Module-3 : Faculty

Saved Question Page

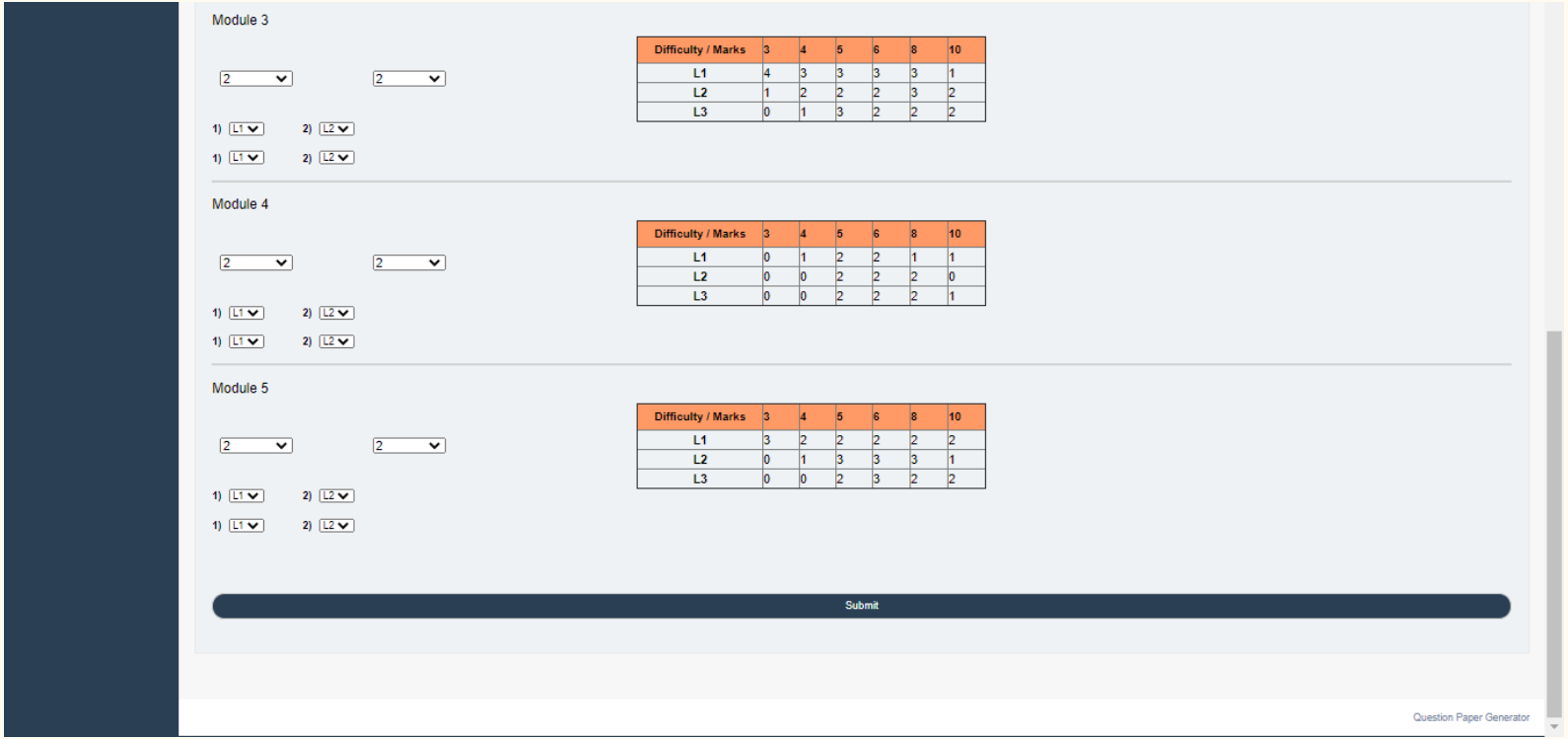


Module	Question Id	Question	Marks	Difficulty
1	724	Discuss the Android Architecture with all layers. Also discuss the role of DVM in detail.	10	L3
1	734	What is the Role of Android.Manifest.xml file in Android	5	L2
2	725	Explain Various Android features. Why android is popular mobile operating system discuss with reasons	10	L2
2	729	Discuss the various Layout in Android. Demonstrate any Layout with suitable example.	5	L2
2	733	Discuss what type of App we can build using Location API in Android. Also explain how to get the current location of User in Android Apps.	10	L2
3	731	Discuss how SQL Lite is different than other database approach in android. Write a code in SQL Lite to fetch a data from any table and display on screen using cursor.(Assume table is already created with sample records in it)	10	L3
3	732	Explain the Camera API in Android with suitable examples.	10	L2
3	735	Write a short note on Android App publishing	5	L1
3	736	Android Download Manager	5	L2
3	737	Write a short note on Android Security Issues	5	L3

Module-4 : Generation of Question Paper



Module-4 : Generation of Question Paper



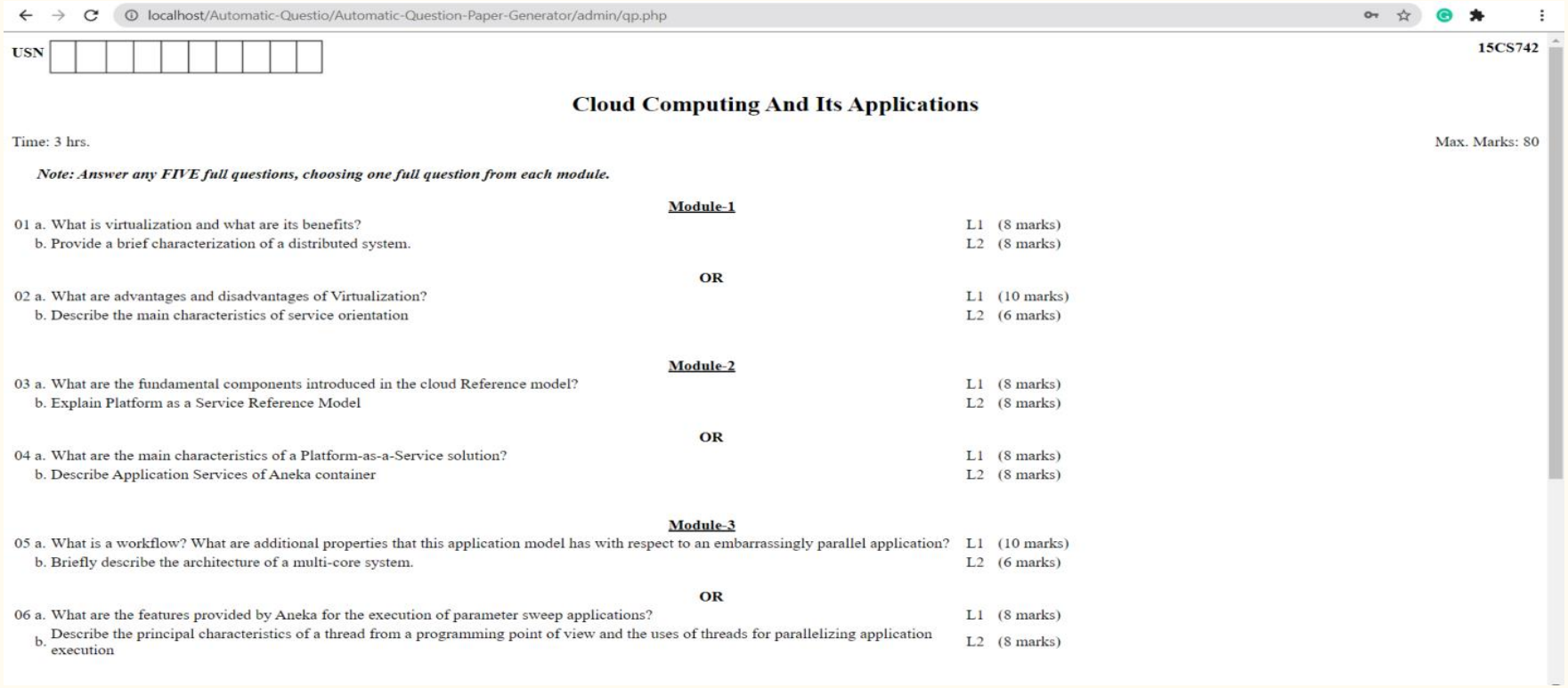
Difficulty / Marks	3	4	5	6	8	10
L1	4	3	3	3	3	1
L2	1	2	2	2	3	2
L3	0	1	3	2	2	2

Difficulty / Marks	3	4	5	6	8	10
L1	0	1	2	2	1	1
L2	0	0	2	2	2	0
L3	0	0	2	2	2	1

Difficulty / Marks	3	4	5	6	8	10
L1	3	2	2	2	2	2
L2	0	1	3	3	3	1
L3	0	0	2	3	2	2

Module-4 : Generation of Question Paper

Generated Question Paper



localhost/Automatic-Questio/Automatic-Question-Paper-Generator/admin/qp.php

USN | | | | | | | | | | |

15CS742

Cloud Computing And Its Applications

Time: 3 hrs. Max. Marks: 80

Note: Answer any FIVE full questions, choosing one full question from each module.

Module-1

01	a.	What is virtualization and what are its benefits?	L1 (8 marks)
	b.	Provide a brief characterization of a distributed system.	L2 (8 marks)
		OR	
02	a.	What are advantages and disadvantages of Virtualization?	L1 (10 marks)
	b.	Describe the main characteristics of service orientation	L2 (6 marks)

Module-2

03	a.	What are the fundamental components introduced in the cloud Reference model?	L1 (8 marks)
	b.	Explain Platform as a Service Reference Model	L2 (8 marks)
		OR	
04	a.	What are the main characteristics of a Platform-as-a-Service solution?	L1 (8 marks)
	b.	Describe Application Services of Aneka container	L2 (8 marks)

Module-3

05	a.	What is a workflow? What are additional properties that this application model has with respect to an embarrassingly parallel application?	L1 (10 marks)
	b.	Briefly describe the architecture of a multi-core system.	L2 (6 marks)
		OR	
06	a.	What are the features provided by Aneka for the execution of parameter sweep applications?	L1 (8 marks)
	b.	Describe the principal characteristics of a thread from a programming point of view and the uses of threads for parallelizing application execution	L2 (8 marks)

3. Conclusion and Future Scope

3.1 Conclusion

- Generate Question Paper automatically using Shuffling Algorithm for Randomization
- Aim to reduce Human Effort
- Helps to generate dissimilar paper with desired format.

3.1 Future Scope

- Enhance the same software by making provision to produce question for online test in a Multiple Choice Question format.
- Put in Machine Learning algorithms which will further help to identify if the generated Question Paper fulfils all the Course Objectives or not.

4. References

- Automatic Generation of Question Paper from User Entry Specifications using a Semantically Tagged Question Repository
- Choosing the right LMS: A performance evaluation of three open-source LMS
- BLOOM'S TAXONOMY-BASED EXAMINATION QUESTION PAPER GENERATION SYSTEM by Yulia Timakova FTMS College Malaysiajuliati095@gmail.com, Kinn Abass Bakon FTMS College MalaysiaKinn@ftms.edu.my. International Journal of Information System and Engineeringwww.ftms.edu.my/journals/index.php/journals/ijiseVol. 6 (No.2), November, 2018ISSN: 2289-7615DOI: 10.24924/ijise/2018.11/v6.iss2/76.92

Thank You