Project Name

**Online Examination System**

**CDAC-KP(PG-DAC)**

Technolgies used:

Mean Stack(AngularJs,NodeJS,MySql(MariaDB))

**Group Members:-**

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**What does the System do?**

The portal faclilitates User(Students) to take an online exam:

1. The userhas to be already registered before he takes test.Registration link allows user to register.

2.User can login using the sign-in link and verify his details and read instructions.

3. When START button is clicked the exam page appears and timer starts.User has to attempt all questions within given time .Once the timer goes off result screen is displayed .

4.User can check the result and logout.

**Future Enhancements:-**

Further ,the portal can be enhanced to include ADMIN and FACULTIES roles:

Admin Role:

1.Login ,Enter and manage student ,Test and Result Info.

2.Regular test schedules.

Faculites Role:

1.Faculties can Login and enter the subject wise MCQ'S.

2.Faculites can manually select required number of questions from huge question bank and set question paper in minutes time.

**Scenario: Student logsin -Takes Test-Result is displayed.**

**Presentation Layer:-**

* The user registers using the portal ,setting his prnno and password .
* The student logsin using his credentials.
* The Ajax call is made on login click from angular service to nodejs to send info(uasername,password) to verify credentials validation messages accordingly sent.
* In the service layer,session object is obtained and the user if having valid credentials is put into session.
* Login info like prnno,subject,is sent to presentation layer via object,and dataobject from service is set in local storage(localStorage.setItem(key,value)) and got from localstorage(localStorage.getItem(key) and displayed on studentinfo.html page.
* Student info page Start button starts test.
* In ngOnInit () function ,ajax call is made to the nodejs and array of 10 questions,4options ,ans keys is obtained in data objects array in exampage.ts file.First question is displayed.
* Timer is set for 3 mins(changable) using setInterval(anonomous function,timeinterval) javascript fuction.
* User clicks on a qno(exampage.html) button for each question, the id(in button UI) of the question is matched with the question id in dataobject array(exampage.ts file).Respective question is then displayed on screen.
* On Radioclick event ,when user select one radio button from group,
* Selected response is compared with the answer key (Dataobject array).If matches ,marks count incremented otherwise not incremented.
* When timer exhausted or finish button clicked before time,the obtained marks and total marks are sent as routing parameters to the Result.ts page.In resullt.html,obtained marks and grade is displayed.Logout button is displayed on result.html
* On Logout click,ajax call is made to node.js and login status of the user is obtained from nodejs.If login ==0.User is removed from the localstorage(localStorage.removeItem(key),localStorage.clear()).

**Service Layer:-**

* ' /getexamquestions' web service is called for getting questions,options and anskey array from angular SerOnlineExamService service.
* subid and username is received from angular get mode of request. Using req.query parameters are retrieved from JSONstring object(username,password).
* Question stem,4 options,anskey,qid are retrieved from Question bank table of database.
* The ro object with above info is sent to the angular.

**DAO Layer**:-

QuestionBank was created first with composite key(qno,subjectid).

JDBC Connection is established with mysql database using,

mysql.createConnection({ host: 'localhost', user: 'root', password: '',

database: 'onlineexam',port:3306});

**In above scenario**,

Select query is written to retieve 10 recods from QuestionBank table of the required subjectid and stored in resultset using,

connection.query(sql,fillargs,function(err,result,fields){(err){}, (){}});

**Scenarios in which we got struck:-**

* In the QuestionBank table of database ,how to maintain 10 distinct(unique id) questions for 5 different subjects.We used composite key(subjectid,qno) as primary key.
* How to insert information inuser and Examdetails as well when user registers(Information is entered in student table).We used trigger on student table to insert information in user and Examdetails.

**Learning during the Project:-**

* **Applied the concepts that we learnt in the project:**
* 3-layer architecture,presentation framework,service framework,Database.
* Angular(Ajax call,Json strings handling,routing with parameter passing), Mysql concepts(Normalization of DB,create,insert,select queries).
* **New concepts** were localstorage,passing event object from html file to typescript file method an its use,use of combobox.