ON-LINE EXAMINATION SYSTEM

MINI PROJECT REPORT SUBMITTED IN THE PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF THE DEGREE
OF
BECHELOR IN TECHNOLOGY
IN
COMPUTER SCIENCE AND ENGINEERING WITH SPECIALIZATION DATA & CYBER
BY

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We gratefully acknowledge for the assistance, cooperation, guidance and clarifications provided by **THE NEOTIA UNIVERSITY** during the development of the **OnlineExams System** website. Our extreme gratitude to **Mr.Sandipan Chakravorty** who guided us throughout the project. Without his willing disposition, spirit of accommodation, frankness, timely clarification and above all faith in us, this project could not have been completed in due time.

His readiness to discuss all important matters at work deserves special attention.

We would also like to thank whole of the faculty of the college for their cooperation and important support.

CERTIFICATE

This is to certify that the project entitled **"Online Exam System"**has been developed by**"KUNTAL CHAUDHURY,SUBHANKAR MANDAL, DIBYENDU RANA,MANISH GHOSH AND SUMAN DE".**

He has worked on the project Online Exam System. He has used JAVA, HTML, JSP, SQL,JAVASCRIPT and ADVANCE JAVA as Database for the project. His work is satisfactory.

I wish him all the best for his bright future

Dated:-28/JUNE/2022

Project Incharge

Mr.Sandipan Chakravorty

INTRODUCTION

OnlineExams is being launched because a need for a destination that is beneficial for both institutes and students. With this site, institutes can register and host online exams. Students can give exams and view their results. This site is an attempt to remove the existing flaws in the manual system of conducting exams.

Purpose

Online Exams System fulfills the requirements of the institutes to conduct the exams online. They do not have to go to any software developer to make a separate site for being able to conduct exams online. They just have to register on the site and enter the exam details and the lists of the students which can appear in the exam.

Students can give exam without the need of going to any physical destination. They can view the result at the same time.

Thus the purpose of the site is to provide a system that saves the efforts and time of both the institutes and the students.

What is Online Exams System all about?

Online Exams System is a web application that establishes a network between the institutes and the students. Institutes enter on the site the questions they want in the exam. These questions are displayed as a test to the eligible students. The answers enter by the students are then evaluated and their score is calculated and saved. This score then can be accessed by the institutes to determine the passes students or to evaluate their performance.

Online Exam s Sys tem provides the platform but does not directly participate in, nor is it involved in any tests conducted. Questions are posted not by the site, but users of the site. The site requires an institute to register before posting the questions.

The site has an administrator who keeps an eye on the overall functioning of the system. The site gets revenue by charging the institutes each time they want to conduct the exam.

The system entitled “Online Exams System” is applic ation software, which aims at providing services to the institutes and providing them with an option of selecting the eligible students by themselves. It is developed by using J2EE technology and related database.

SOFTWARE DEVELOPMENT METHODOLOGY

The establishment and use of sound engineering principles in order to obtain economically developed software that is reliable and works efficiently on real machines is called *software engineering.*

Software engineering is the discipline whose aim is:

1. Production of quality software
2. software that is delivered on time
3. cost within the budget
4. satisfies all requirements.

Software process is the way in which we produce the software. Apart from hiring smart, knowledgeable engineers and buying the latest development tools, effective software development process is also needed, so that engineers can systematically use the best technical and managerial practices to successfully complete their projects.

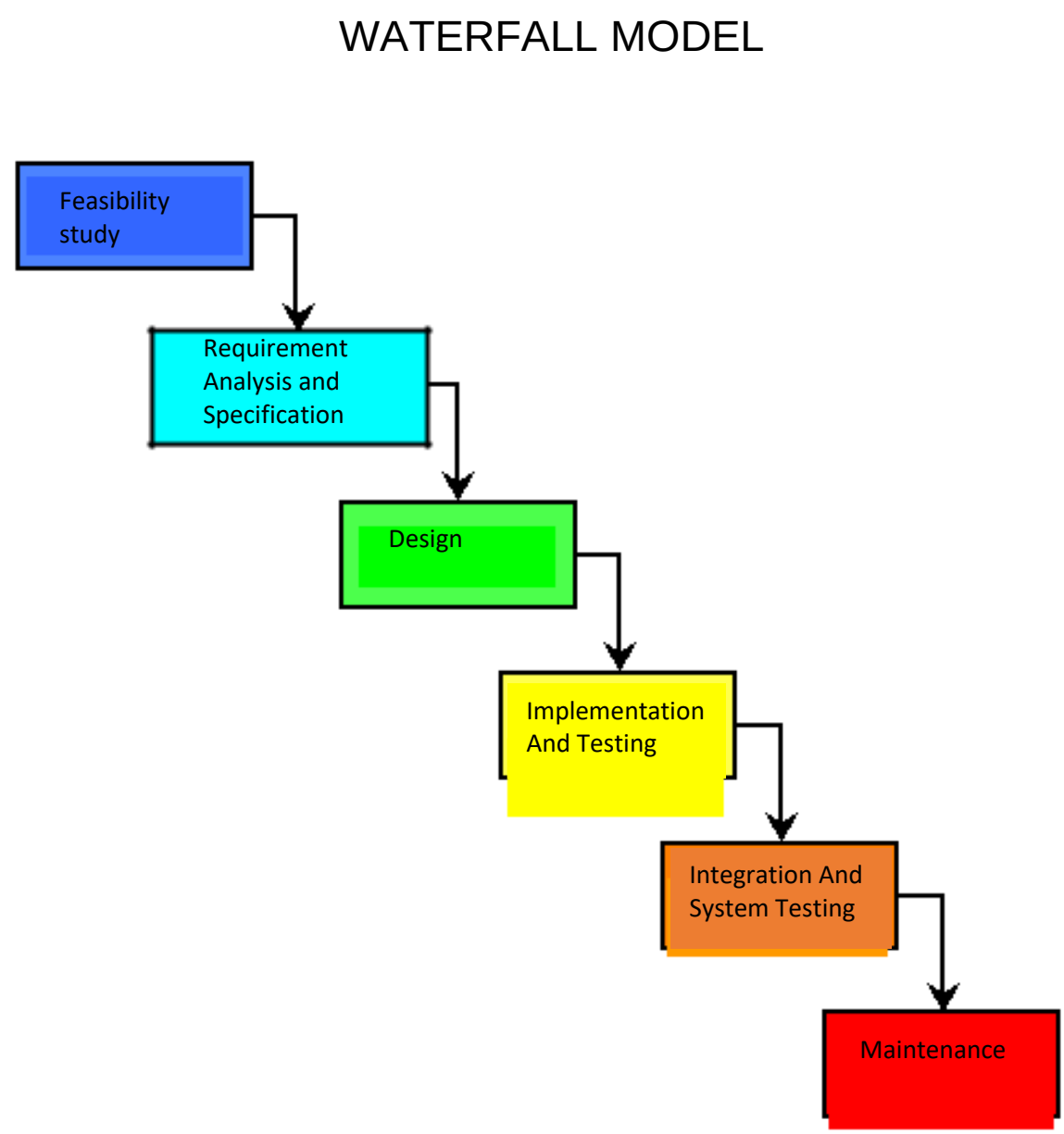
A **software life cycle** is the series of identifiable stages that a software product undergoes during its lifetime .A software lifecycle model is a descriptive and diagrammatic representation of the software life cycle .A life cycle model represents all the activities required to make a software product transit through its lifecycle phases .It also captures the order in which these activities are to be taken .

Life Cycle Models

There are various life cycle models to improve the software processes.

- WATERFALL MODEL
- PROTOTYPE MODEL
- SPIRAL MODEL

In the project, **Waterfall model** is followed.



WATERFALL MODEL

This model contains 6 phases:

- **Feasibility study**
  The feasibility study activity involves the analysis of the problem and collection of the relevant information relating to the product. The main aim of the feasibility study is to determine whether it would be financially and technically feasible to develop the product.
- **Requirement analysis and specification**
  The goal of this phase is to understand the exact requirements of the customer and to document them properly.(SRS)
- **Design**
  The goal of this phase is to transform the requirement specification into a structure that is suitable for implementation in some programming language.
- **Implementation and unit testing**
  During this phase the design is implemented. Initially small modules are tested in isolation from rest of the software product.
- **Integration and system testing**
  In this all the modules are integrated and then tested altogether.
- **Operation and maintenance**.
  Release of software inaugurates the operation and life cycle phase of the operation.

The phases always occur in this order and do not overlap.

Software Requirement Specification (SRS)

1. Introduction:

The following subsections of the SRS document provide an overview of the entire SRS.

i) Purpose:

The purpose of the project is to provide online facility to *Institutes* to conduct online exams and to Students to give online exams. Institutes can enter and edit the questions along with the students list. Also they can view the result. Students can login and give their respective exams and view their score then and there. *Others* can view sample papers to get look and feel of the online examination system.

ii) **Scope:** The website to conduct online examination is " **OnlineExams".** This website provides facility to institutes to conduct online exams by providing a unique id to each institute. The institute provides questions along with positive and negative marks. Institute also enters the list of eligible students. All the information entered can be later edited by the institute.

In turn student can login with their id, name and instituteid to give the exams and can view their result then and there. Institutes can also view the result of their students.

Benefits: This website reduces the manual work, maintaining accuracy, increasing efficiency and saving time. Also institutes need not go to develop a new software each time, instead they just register and conduct a test. For students, it saves time of going to far away centers and also they can view their result then and there.

iii) Abbreviations:

JSP stands for Java Server Pages

HTTP stands for HyperText Transfer Protocol

iv) References:

IEEE Recommended Practice for Software Requirements Specification-IEEE Std 830-1993.

Overview: The rest of this SRS document describes the various system requirements, interfaces, features and functionalities in detail.

2. **Overall Description:** In Online examination system institute can register to conduct a online test and view the records later. Students can give the test and their respective records, which include their marks for each test given by them, will be maintained separately. No student can take a particular exam more than once.

i.) Product Perspective:

(i) *User interfaces*

(ii) A login screen for entering the username, password will be provided. Access to different screens will be based upon the user.
(iii) There is a screen for displaying information regarding entries to be made by institutes.
(iv) There is a screen for displaying information regarding filling of exam details by institutes.
(v) There is a screen for displaying information regarding entering student list for the particular exam.
(vi) There is a screen for displaying information menu regarding what options the institutes will select while filling entries(entering questions, student list, deleting questions, entering exam details).
(vii) There is a screen for displaying exam details to the students when they are taking exams.
(viii) There is a screen for taking exam for the students.
(ix) There is a screen for displaying of results of students after taking the exam.

(x) *Hardware interfaces*
(i) Support for printer for printing results then and there.
(ii) Screen resolution of at least 800X600 is required for proper and complete viewing of screens. Higher resolution will be accepted.

(xi) *Software interfaces*
(i) Any windows based operating system.
(ii) My SQL as the DBMS-for database.
(iii) APACHE MEAVEN for developing code.

(xii) *Communications interfaces*
None
(xiii) *Memory Constraints*

At least 2 GB RAM and 20MB space on hard disk will be required for running the application.

(Xv) Site Adaptation Requirements

Web browser with cookies enabled.

ii.) Product Functions: The website will allow access only to authorised users with specific roles (Administrator- maintains the website, Institutes-Register to conduct the exams, Students-Give the exams online)

A summary of the major functions that the website will perform:

a. Provide facility to institutes to register to conduct a online test.

b. Institutes can enter the number of questions, +ve, -ve marks, questions and answers and the list of eligible students.

c. Students can login and give the tests.

iii.) User Characteristics:

a. Educational level: Users should be comfortable with the English language.

b. Experience: Users should have prior information regarding the online examinations.

c. Skills: Users should have basic knowledge and should be comfortable using general purpose applications on computers.

iv.) Constraints:

* Since the DBMS being used is MY SQL, which is not a very popular DBMS, it will not be able to store a very huge number of records.
* Due to limited features of DBMS being used performance tuning features will not be applied to the queries and thus the system may become slow with the increase in number of records being stored.
* An extra security as SSL must be used to secure the marks details and other examination information.

V.) Assumptions: The examinations are all objective. Students can give each exam just once.

vi) Apportioning of Requirements: The future versions of the website will be having a better database to handle larger number of records, in a more secure way. Also separate profile will be maintained later for all students so that he can view all his previous test performances.

3. Specific Requirements: This section provides software requirements to a level of detail sufficient to enable designers to design the system and testers to test the system.

External Interface Requirements:

* User Interfaces:

***Institute Registration Screen:** Various fields available on this screen will be:

* Login Name
* Institut e Name
* Email Id
* Password

***Institute Login Screen:** Fields available on this screen are:

* Login Name
* Password

***Entering Questions:** Various Fields are:

* Quest ions
* Options (4)
* Correct Answer

***Exam Details Screen:** Various Fields are:

* Exam Name
* No. Of Quest ions
* Time Limit
* +ve, -ve M arks
* Passing M arks

***Student List Screen:** Various Fields are:

* Student ID
* Student Name

***Student Login Screen:** Various Fields are:

* St udent ID
* St udent Name

- Institut e ID

- **Student Taking Exam Screen:** Various Fields are:
  - Display Of Question Wit h Opt ions
  - Cont rol But tons To switch questions
- **Result Displaying Screen:** Various Fields are:
  - No. Of Correct Questions
  - No. Of Incorrect Quest ions
  - No. Of Unat tempted Quest ions.
  - Tot al M arks.
  - Result (Pass/ Fail)

- **Hardware interfaces:**
  - Support for printer for printing results then and there.
  - Screen resolution of at least 800X600 is required for proper and complete viewing of screens. Higher resolution will be accepted.

- **Software interfaces:**
  - Any windows based operating system.
  - My SQLdatabase.
  - APACHE MEAVEN for developing code.

- **Communications interfaces**

None

ii.) **Software Product Features:**

Validity Checks:

Javascript provides validity checks for various fields in the forms.

Sequencing Information: All the information

regarding exam details, student list, question details, display of result should be handled sequentially that is data should be stored only in a particular sequence to avoid any inconvenience Error Handling: If any of the validations or sequencing flows does not hold true then appropriate error messages will be prompted to the user for doing the needful.

iii.) Performance Requirements: This subsection specifies numerical requirements placed on the software or on the human interaction with the software, as a whole. Numerical requirements will include:

*300 terminals will be supported at a time

*Only text information will be supported(HTTP)

*All the transactions will be processed within seconds.

iv.) Design Constraints: None

v.) Software System Attributes:

*Security: Only authorized users will be able to access the website by entering the correct login name and corresponding password.

*Maintainability: The website can be maintained in present or future. It will be easy to incorporate new requirements in the individual modules.

*Portability: As the website is online so will be easily portable on various systems. The website will be also easily portable on any windows based system that has MS-ACCESS installed.

***Logical Database Requirements:** The following information will be placed in the database:

*Organization Details: ID, Login Name, Email, Password, Institute Name.

*Institute Exam Details: ID, Ename, Tlimit, Passmarks, No. Of Questions, Pmarks, Nmarks.

*Institute Student List: Sid, Sname, Egiven, Marks, Result.

*Institute Question Details: QID, Question, A, B, C, D, Answer.

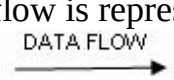
***Other Requirements:** None

DATA FLOW DIAGRAM

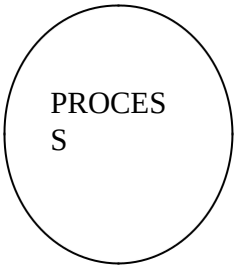
A DFD also known as 'bubble chart', has the pur pose of clarifying system requirements and identifying major transformations. It shows the flow of data through a system. It is a graphical tool because it presents a picture. The DFD may be partitioned into levels that represent increasing information flow and functional detail. Four simple notations are used to complete a DFD. These notations are given below:-

- **DATA FLOW:-** The data flow is used to describe the movement of information from one part of the system to another part. Flows represent data in motion. It is a pipe line through which information flows.

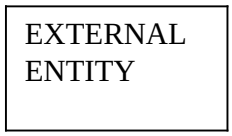
  Data flow is represented by an arrow.



- **PROCESS:-** A circle or bubble represents a process that transforms incoming data to outgoing data. Process shows a part of the system that transform inputs to outputs.

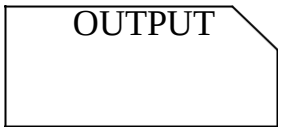


- **EXTERNAL ENTITY:-** A square defines a source or destination of system data. External entities represent any entity that supplies or receive information from the system but is not a part of the system.

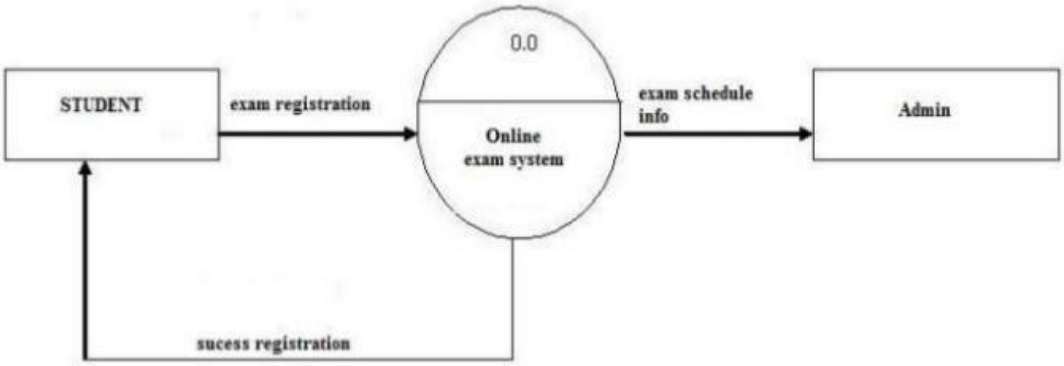


- **DATA STORE:-** The data store represents a logical file. A logical file can represent either a data store symbol which can represent either a data structure or a physical file on disk. The data store is used to collect data at rest or a temporary repository of data. It is represented by open rectangle.

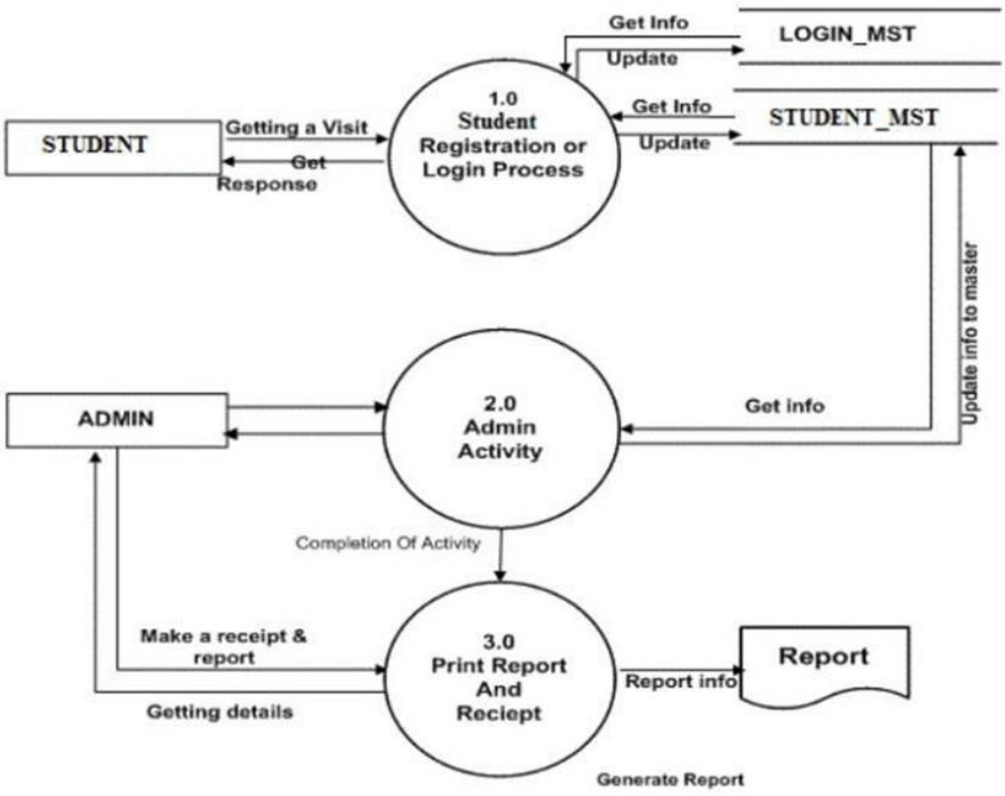
- **OUTPUT:-**The output symbol is used when a hard copy is produced and the user of the copies cannot be clearly specified or there are several users of the output.



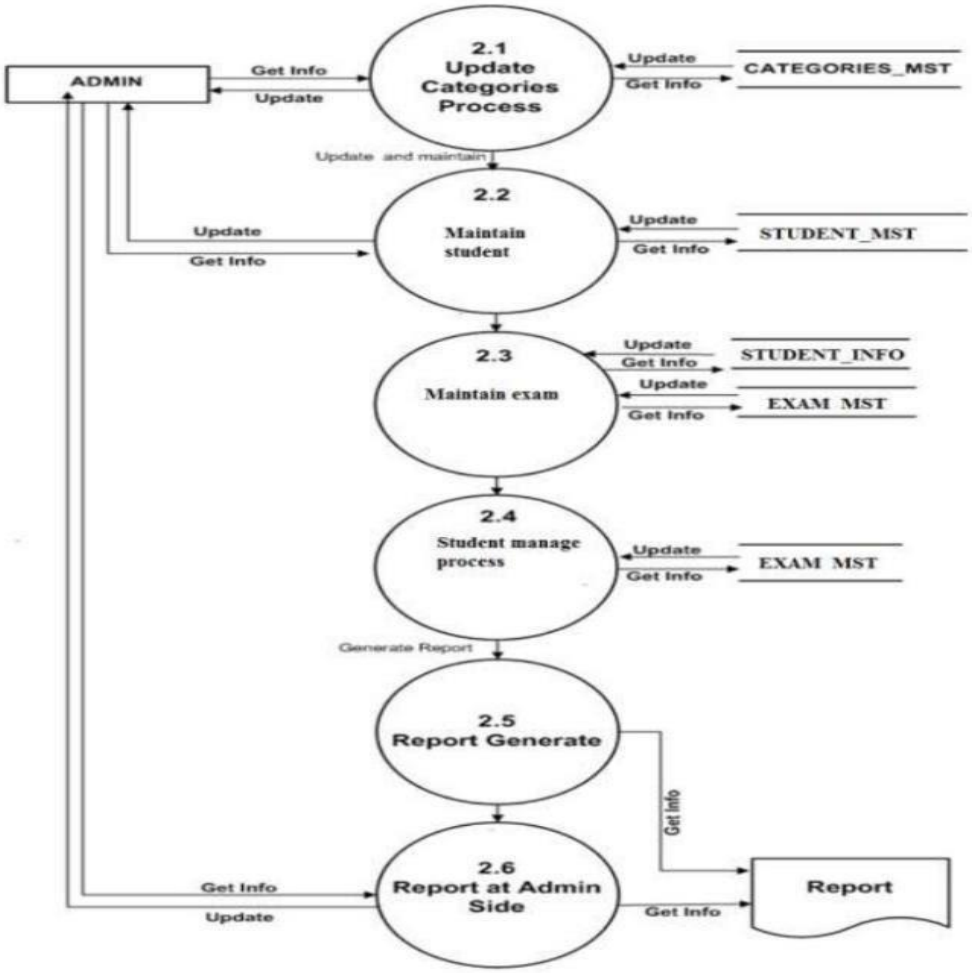
LEVEL '0' DFD FOR ONLINE EXAMINATION



Level 0


Get Info
LOGIN_MST
Update
1.0
Student
Registration or
Login Process
Get Info
STUDENT_MST
Update
STUDENT
Getting a Visit
Get
Response
Update info to master
ADMIN
2.0
Admin
Activity
Get info
Completion Of Activity
Make a receipt &
report
3.0
Print Report
And
Reciept
Report
Report info
Getting details
Generate Report

Level 1


ADMIN
Get Info
Update
2.1
Update
Categories
Process
Update
Get Info
CATEGORIES_MST
Update and maintain
2.2
Maintain
student
Update
Get Info
Update
Get Info
STUDENT_MST
2.3
Maintain exam
Update
Get Info
STUDENT_INFO
Update
Get Info
EXAM MST
2.4
Student manage
process
Update
Get Info
EXAM MST
Generate Report
2.5
Report Generate
Get info
Report
2.6
Report at Admin
Side
Get Info
Update
Get Info

Level 2

PROBLEM DEFINITION

A website, *ONLINEEXAMS*, is to be designed to conduct online tests. Unlike other online examination systems this website should not be just for the students, instead it should also provides facility to *Institutes* to host online Tests/Exams. This will help institutes as:

There will be no need to get new software every time to conduct an online test.

Also like other online websites, it will help students by:

Saving the extra time of going to far away Exam Centre.

Students need not wait for their results.

Also this website will remove the flaws of existing Manual Systems like:

Avoiding Mistakes Due To Human Error (Accurate).

Will Increase Efficiency and Save Time.

Will Allow Neat Handling Of Data Rather Than Error Prone Records.Reducingthemanuallabour(DecreasesOverheads).

The institutes will register themselves with a unique login name and password, the unique id will be issued to the institutes by the website.

After login:

- They will enter exam details like number of questions, +ve and -ve marks.
- Then they will enter the questions along with the answers which can later be deleted and edited.
- Also they will enter the list of eligible candidates with their id names which can also be edited later.
- Institutes will be able to view the students list along with their respective results.

Also➢for students:

- They should be able to give the exam as per the details entered by respective institutes.
- Also they should be able to view their score after test finishes.
- If already given the test then they should just be able to view their scores.Theyshouldbeabletologinwiththeirid,nameandinstituteid.

Other users can take sample tests to get feel and look of how the online tests are conducted.
Other key points:

- Different set of questions should be given to different students.
- The questions should be selected randomly from the database.

FUNCTIONAL REQUIREMENTS

It deals with the functionalities required from the system which are as follows:

- The website will help the colleges/organizations/companies to conduct their online exams.
- Only authorized person can access related details.
- The organization will register themselves on the website for conducting their exams.
- Organizations can change their information regarding themselves.
- The students can login through TEST-ID and PASSWORD and give their exams.
- Administrator will be responsible for updating the site.
- The organization can change questions and test papers whenever they want.

The technologies used to develop this site are:-

FRONTEND:- (LANGUAGES)

- J2EE:- Java 2 Enterprise Edition is a programming platform— part of the Java Platform for developing and running distributed multitier architecture Java applications, based largely on modular software components running on an application server.
- HTTP:- Hypertext Transfer Protocol is a transaction or oriented client/server protocol between web browser & a Web Server.

APACHE MAVEN:- Web-server for running j2ee applications over network.

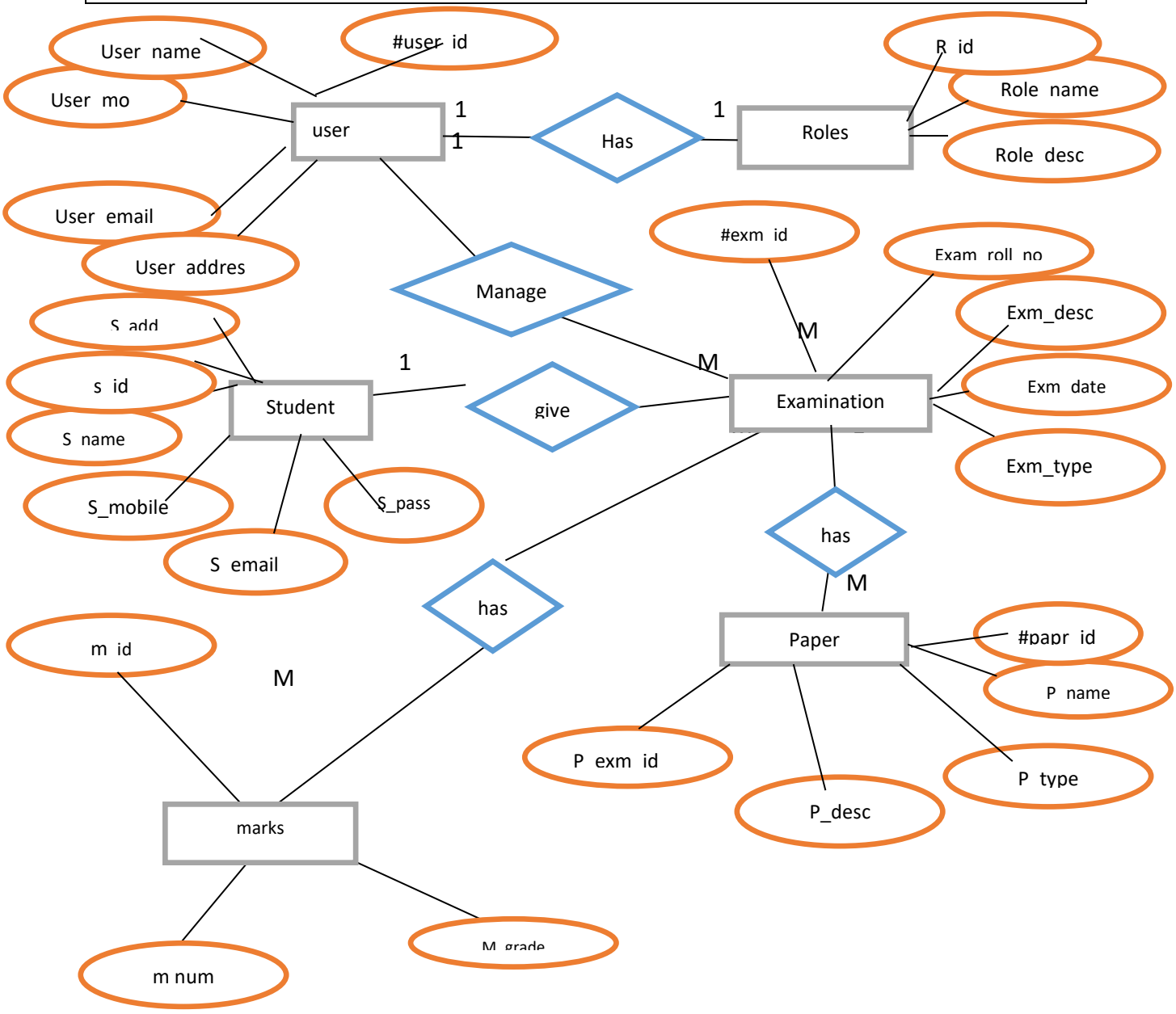
- But we are learning advance java so we couldnot implement apache meaven very properly to make

- HTML:- HTML ,stands for Hyper Text Markup Language, is a markup language
  for web pages. It provides a means to create structured documents including
  headings, pictures, objects, lists, links, and other items and can be used to create interactive pages. It can include or can load scripts in languages such
  as JAVA SCRIPT which affects the behavior of HTMML processors like Web
  Browsers

BACKEND:- (DATABASE)

- MS-ACCESS:- MS-ACCESS is used as a database.
  - MS-ACCESS is a user friendly user database with no special skills
    required to learn it.
  - Database and tables in MS-Access are portable.
  - Users can create tables, queries, forms and reports, and connect them together with macros.
  - MS-Access is relatively compatible with SQL .Queries can be viewed graphically or edited as SQL statements.

ONLINE EXAMINATION SYSTEM ERD



DBMS PART

1.CREATE TABLE 'STUDENT'.

```
SQL> CREATE TABLE STUDENTS(
  2  S_ID NUMBER(10) PRIMARY KEY,
  3  S_NAME VARCHAR2(20) NOT NULL,
  4  S_PHONE_NO NUMBER(10) NOT NULL,
  5  S_EMAIL_ID VARCHAR2(20) NOT NULL,
  6  S_USER_NAME VARCHAR2(20) NOT NULL,
  7  S_PASSWORD VARCHAR2(20) NOT NULL,
  8  S_ADDRESS VARCHAR2(20) NOT NULL
  9  );

Table created.
```

2.CREATE TABLE 'EXAMS'.

```
SQL> CREATE TABLE EXAMS(
  2   EXAM_ID NUMBER(20) PRIMARY KEY,
  3   EXAM_S_ID NUMBER(20) NOT NULL,
  4   EXAM_ROLL_NO NUMBER(20) NOT NULL,
  5   EXAM_DATE DATE NOT NULL,
  6   EXAM_NAME VARCHAR2(20) NOT NULL,
  7   EXAM_TYPE VARCHAR2(20) NOT NULL
  8   );

Table created.
```

3.CREATE TABLE 'MARKS'.

```
SQL> CREATE TABLE MARKS(
  2  M_S_ID NUMBER(20) PRIMARY KEY,
  3  M_E_ID NUMBER(20) NOT NULL,
  4  M_NUMBER NUMBER(20) NOT NULL,
  5  M_GRADE VARCHAR2(5) NOT NULL,
  6  M_DESC VARCHAR2(20) NOT NULL
  7  );

Table created.
```

4.CREATE TABLE 'PAPERS'.

```
SQL> CREATE TABLE PAPERS(
  2  P_ID NUMBER(20) PRIMARY KEY,
  3  P_SUBJECT VARCHAR2(20) NOT NULL,
  4  P_NAME VARCHAR2(20) NOT NULL,
  5  P_TYPE VARCHAR2(20) NOT NULL,
  6  P_DESC VARCHAR2(20) NOT NULL
  7  );

Table created.
```

5.CREATE TABLE ‘E_TAKEN’.

```
SQL> CREATE TABLE E_TAKEN(
  2  T_ID NUMBER(10) PRIMARY KEY,
  3  T_DATE DATE NOT NULL,
  4  E_ID NUMBER(10) REFERENCES EXAMS ON DELETE CASCADE,
  5  S_ID NUMBER(10) REFERENCES STUDENTS ON DELETE CASCADE
  6  );

Table created.
```

6.CREATE TABLE ‘E_REQUIREMENTS’.

```
SQL> CREATE TABLE E_REQUIREMENTS(
  2  REQ_ID NUMBER(10) PRIMARY KEY,
  3  S_ID NUMBER(10) REFERENCES STUDENTS ON DELETE CASCADE,
  4  REQ_NAME VARCHAR2(20) NOT NULL,
  5  REQ_QUANTITY NUMBER(10) NOT NULL
  6  );

Table created.
```

OUTPUT

1.OUTPUTS OF THE ‘STUDENTS’.

```
SQL> DESC STUDENTS
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 S_ID                                      NOT NULL NUMBER(10)
 S_NAME                                    NOT NULL VARCHAR2(20)
 S_PHONE_NO                                NOT NULL NUMBER(10)
 S_EMAIL_ID                                NOT NULL VARCHAR2(20)
 S_USER_NAME                               NOT NULL VARCHAR2(20)
 S_PASSWORD                                NOT NULL VARCHAR2(20)
 S_ADDRESS                                 NOT NULL VARCHAR2(20)
```

2.OUTPUT OF THE ‘EXAMS’.

```
SQL> DESC EXAMS
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 EXAM_ID                                   NOT NULL NUMBER(20)
 EXAM_S_ID                                 NOT NULL NUMBER(20)
 EXAM_ROLL_NO                              NOT NULL NUMBER(20)
 EXAM_DATE                                 NOT NULL DATE
 EXAM_NAME                                 NOT NULL VARCHAR2(20)
 EXAM_TYPE                                 NOT NULL VARCHAR2(20)
```

3.OUTPUT OF THE ‘PAPERS’.

```
SQL> DESC PAPERS
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 P_ID                                      NOT NULL NUMBER(20)
 P_SUBJECT                                 NOT NULL VARCHAR2(20)
 P_NAME                                    NOT NULL VARCHAR2(20)
 P_TYPE                                    NOT NULL VARCHAR2(20)
 P_DESC                                    NOT NULL VARCHAR2(20)
```

4.OUTPUT OF THE ‘MARKS’.

```
SQL> DESC MARKS
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 M_S_ID                                    NOT NULL NUMBER(20)
 M_E_ID                                    NOT NULL NUMBER(20)
 M_NUMBER                                  NOT NULL NUMBER(20)
 M_GRADE                                   NOT NULL VARCHAR2(5)
 M_DESC                                    NOT NULL VARCHAR2(20)
```

5.OUTPUT OF THE ‘PAPERS’.

```
SQL> DESC PAPERS
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 P_ID                                      NOT NULL NUMBER(20)
 P_SUBJECT                                 NOT NULL VARCHAR2(20)
 P_NAME                                    NOT NULL VARCHAR2(20)
 P_TYPE                                    NOT NULL VARCHAR2(20)
 P_DESC                                    NOT NULL VARCHAR2(20)
```

7.OUTPUT OF THE ‘E_TAKEN’.

```
SQL> DESC E_TAKEN
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 T_ID                                      NOT NULL NUMBER(10)
 T_DATE                                    NOT NULL DATE
 E_ID                                               NUMBER(10)
 S_ID                                               NUMBER(10)
```

NON FUNCTIONAL REQUIREMENTS

They are the quality requirements that stipulate how well a software does what it has to do.

- **Performance**

  No. of terminals to be supported is dependent on the server that we will use at the time of deployment.
  The web application server used should provide good performance and ability to manage performance with techniques such as support for caching.
  After completing the exam, the entire score of the student will be calculated as per the rules in less than a second.

- **Availability**

  Online Examination site has 24*7 availability. It can be accessed for 24 hours a day. For this UPS support must be on the server site with a backup of at least 8 hours in case of power failure.
  Students can take exam only during the previously allotted time slots, however can open site anytime to access other information.
  Colleges can register for the exam anytime.

- **Reliability**

  It means the extent to which program performs with required precision.
  The website developed should be extremely reliable and secure so that information about any questions etc. is not leaked before the actual exam is held.

- **Usability**

  The website should be user friendly and should require least effort to operate.

- The web server used should provide services like session management to maintain sessions in the application.

- **Portability**

  The website is made using HTML, JSP etc.which are platform independent and can be transported to other servers with minimum effort.

- **Flexibility**

It is effort required to modify operational program. The whole website should be made using independent modules so that any changes done in 1 module should not effect the other one and new modules can be added easily to increase functionality.

What contribution would the project make?

This is an era of information technology where automation of each and every activity is gaining importance. The site will lead to the automation of the examination system. Moreover it is far better than the previous such websites.

Computerized vs. Manual Examination System

Automated process of examination is much better than the manual system as it has following advantages:❖

- ❖ Increased efficiency
- ❖ Allows neat handling of data rather than error prone records.
- ❖ Decreases overhead
- ❖ Accurate Timesaving

How OnlineExams4U is better than previous websites?

This website is better than previous versions as most of the online exam sites provide facility to only one institute to hold the tests.They are static and are associated with a particular institute or test.OnlineExams4U is a website that can be used by multiple institutes.Any institute that want to conduct the exam can register on the site

FEASABILITY STUDY

- Once scope has been identified (with the concurrence of the customer), it is reasonable to ask: “Can we build software to meet th is scope? Is the project feasible?” All too often, software engineers rush past this questions (or are pushed past them by impatient managers or customers), only to become mired in a project that is doomed from the onset.

- When we are developing the system (software), we must know the proposed system will be feasible or i.e. practically implemented or not it may possible the proposed(candidate) system may not implemented due to many reasons like it may take long time in development than the specified time limit ,cost may increase than proposed one etc. Therefore we must analyze the feasibility of the system.

- Feasibility is the analysis of risks, costs & benefits relating to economics, technology & user operation.

- There are several types of feasibility depending on the aspect they covers. Some important feasibilities is as follows:-(I) Technical Feasibility

  (II) Operational Feasibility
  III) Economical Feasibility

- **TECHNICAL FEASIBILTIY:-**
  The technically feasibility study basically centers on alternatives for hardware, software and design approach to determine the functional aspects of system.

This project on Online Examination will be platform independent since it is being coded in JAVA language (using JSP and SERVLETS).HTML is used to create web pages.

MS-Access database will be used for storing data.

Hardware requirements used are compatible with all O.S. Only authorized person would be able to use the website so it would be secure. The system can also be expanded as per the needs of requirement specification.

- **OPERATIONAL FEASIBILTY:-**

Operational Feasibility is a measure of how people are able to work with system. This type of feasibility demands if the system will work when developed and installed.

Since website is very user friendly so users will find it comfortable to work on this site.

- **ECONOMICAL FEASIBILITY**

Economic analysis is the most frequently used evaluating the effectiveness of proposed system, more commonly known as Benefit analysis. The Benefit analysis is to determine benefits and savings which are expected from candidate system and compare them with cost. If the benefits are more than the cost, then decision is made to design and implement the system. The cost and benefits may be direct or indirect and tangible or intangible.

TESTING

- Software testing is the process of executing a program with intension of finding errors in the code. It is a process of evolution of system or its parts by manual or automatic means to verify that it is satisfying specified or requirements or not.
- Generally, no system is perfect due to communication problems between user and developer, time constraints, or conceptual mistakes by developer.
- To purpose of system testing is to check and find out these errors or faults as early as possible so losses due to it can be saved.
- Testing is the fundamental process of software success.
- Testing is not a distinct phase in system development life cycle but should be applicable throughout all phases i.e. design development and maintenance phase.
- Testing is used to show incorrectness and considered to success when an error is detected.

OBJECTIVES OF SOFTWARE TESTING

The software testing is usually performed for the following objectives:-

- **SOFTWARE QUALITY IMPROVEMENT:-** The computer and the software are mainly used for complex and critical applications and a bug or fault in software causes severe losses. So a great consideration is required for checking for quality of software.

- **VERIFICATION AND VALIDATION:-**
  - ***Verification*** means to test that we are building the product in right way .i.e. are we using the correct procedure for the development of software so that it can meet the user requirements.
  - ***Validation*** means to check whether we are building the right product or not.
- **SOFTWARE RELIABILTY ESTIMATION:-** The objective is to discover the residual designing errors before delivery to the customer. The failure data during process are taken down in order to estimate the software reliability.

PRINCIPLE OF SOFTWARE TESTING:-

- Software testing is an extremely creative and challenging task. Some important principles of software testing are as given:-
  - All tests should be traceable to customer requirements.
  - Testing time and resources should be limited i.e. avoid redundant testing.
  - It is impossible to test everything.
  - Use effective resources to test.
  - Test should be planned long before testing begins i.e. after requirement phase.
  - Test for invalid and unexpected input conditions as well as valid conditions.
  - Testing should begin in "in the small" and progress towards testing "in the large".
  - For the most effective testing should be conducted by an independent party.
  - Keep software static (without change mean while) during test.
  - Document test cases and test results.
  - Examining what the software not doing which it expected to do and also checking what it is doing that was not expected to do.

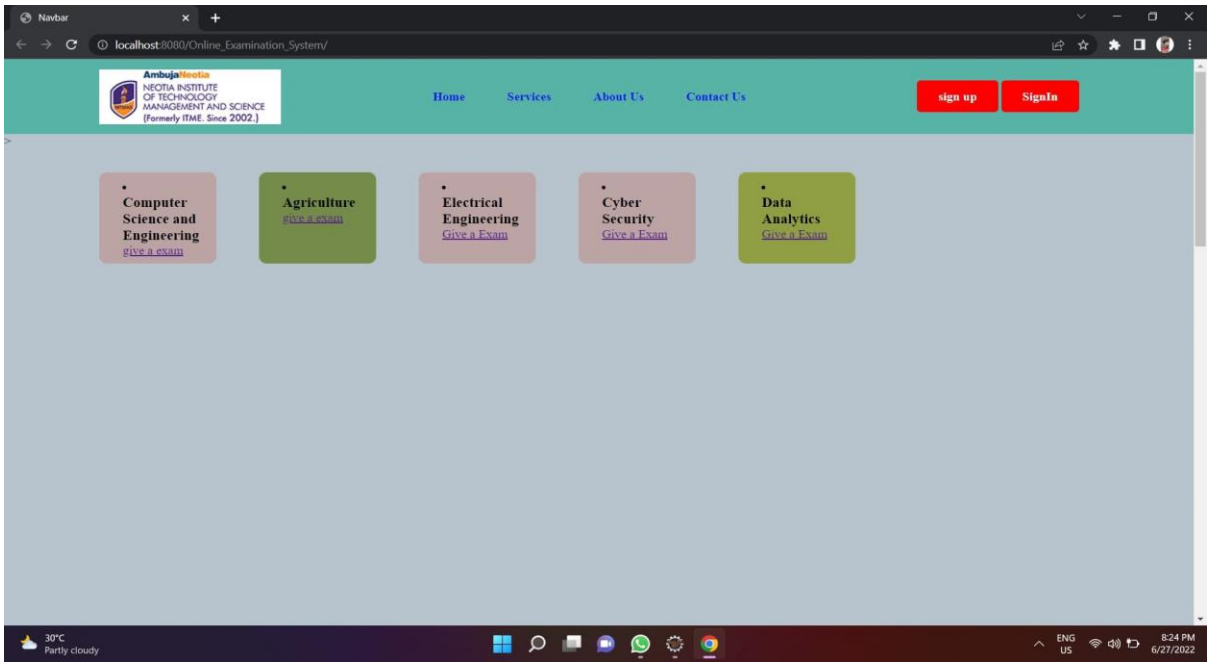
STRATEGY FOR SOFTWARE TESTING

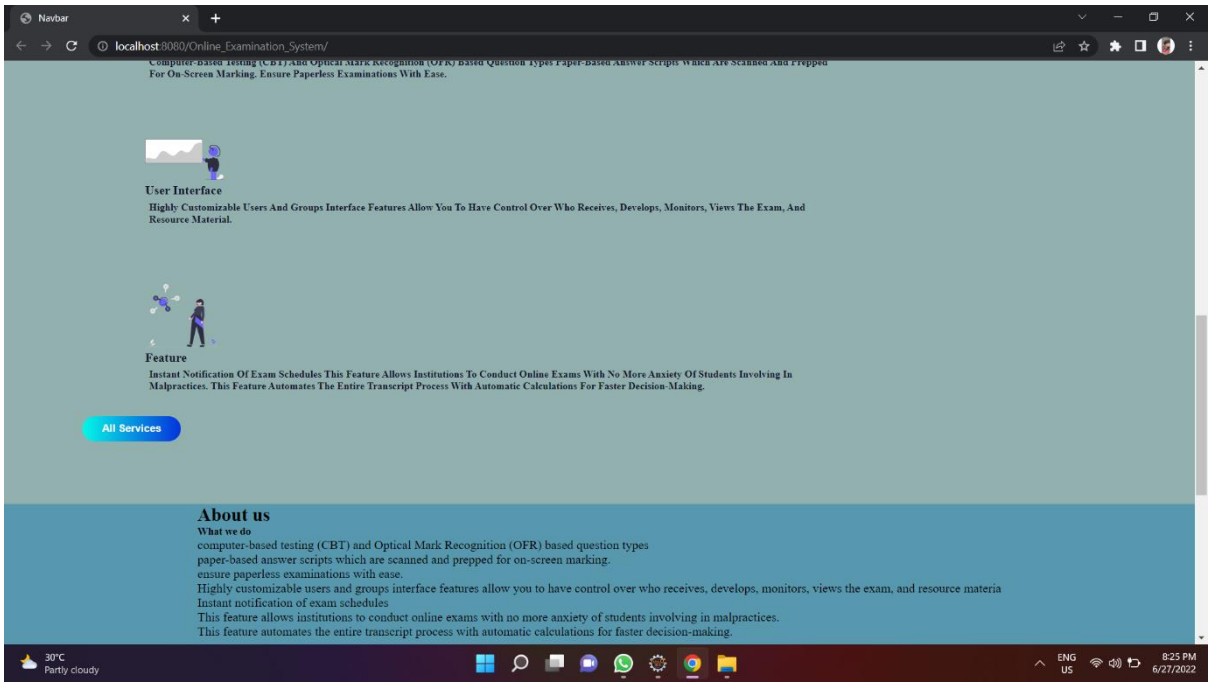
Different levels of testing are used in the test process; each level of testing aims to test different aspects of the system.

- The first level is ***unit testing***. In this testing, individual components are tested to ensure that they operate correctly. It focuses on verification efforts.
- The second level is ***integration testing***. It is a systematic technique for constructing the program structure. In this testing, many tested modules are combined into the subsystem which are then tested. The good here is to see if the modules can be integrated properly.
- Third level is ***integration testing***. System testing is actually a series of different tests whose primary purpose is to fully exercise computer based system. These tests fall outside scope of software process and are not conducted solely by software engineers.

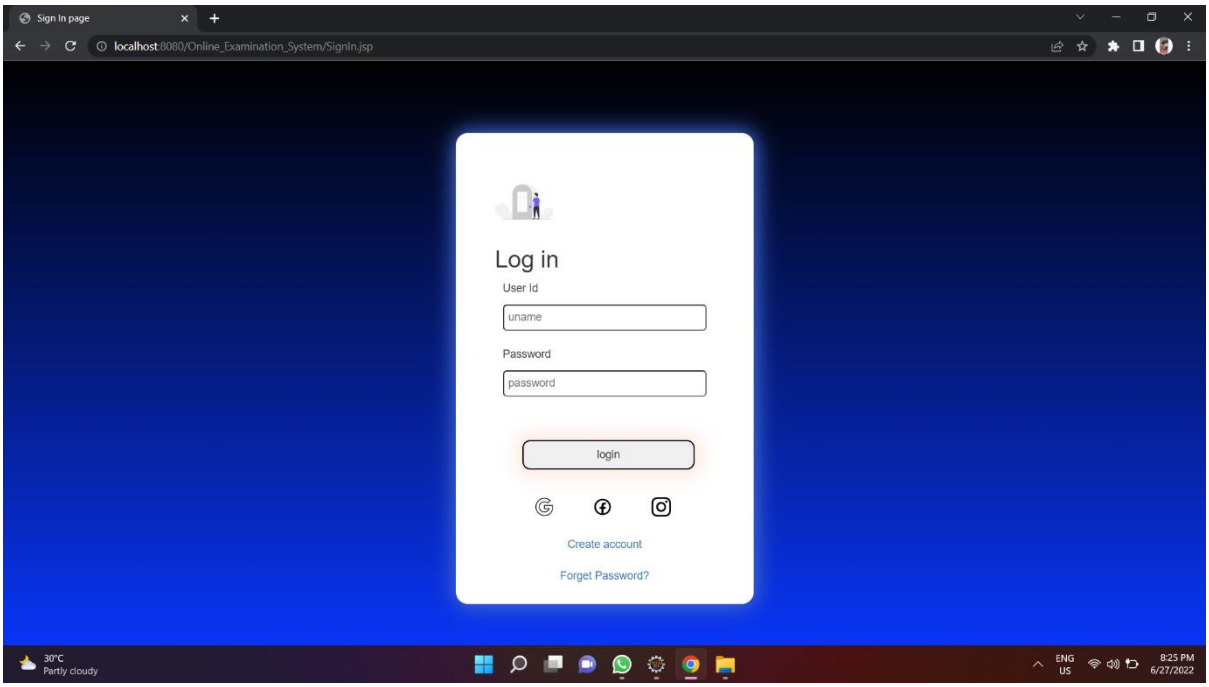
SCREENSHOTS

HOME PAGE

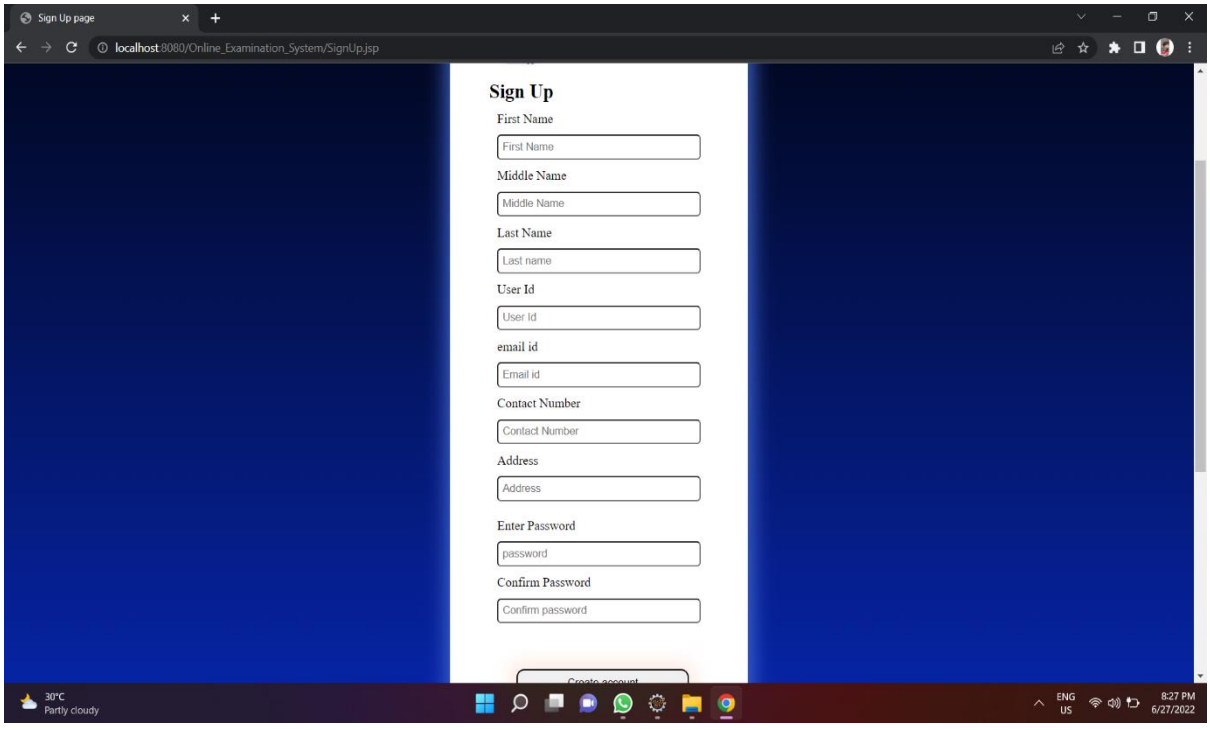


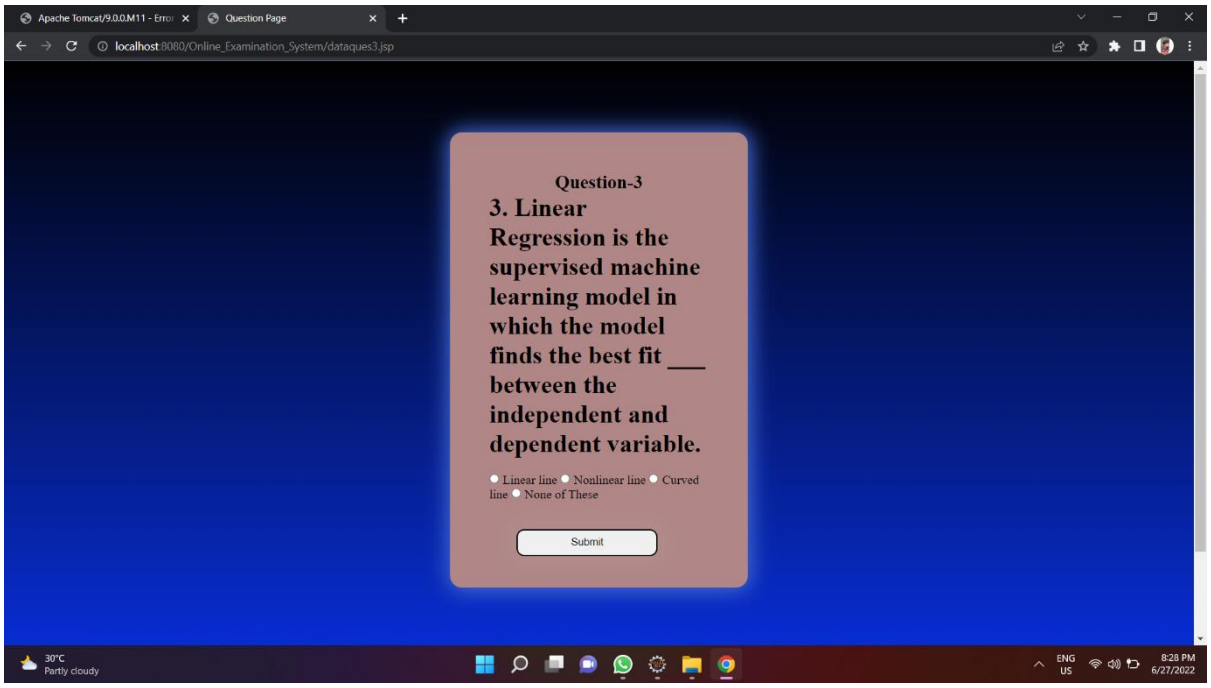


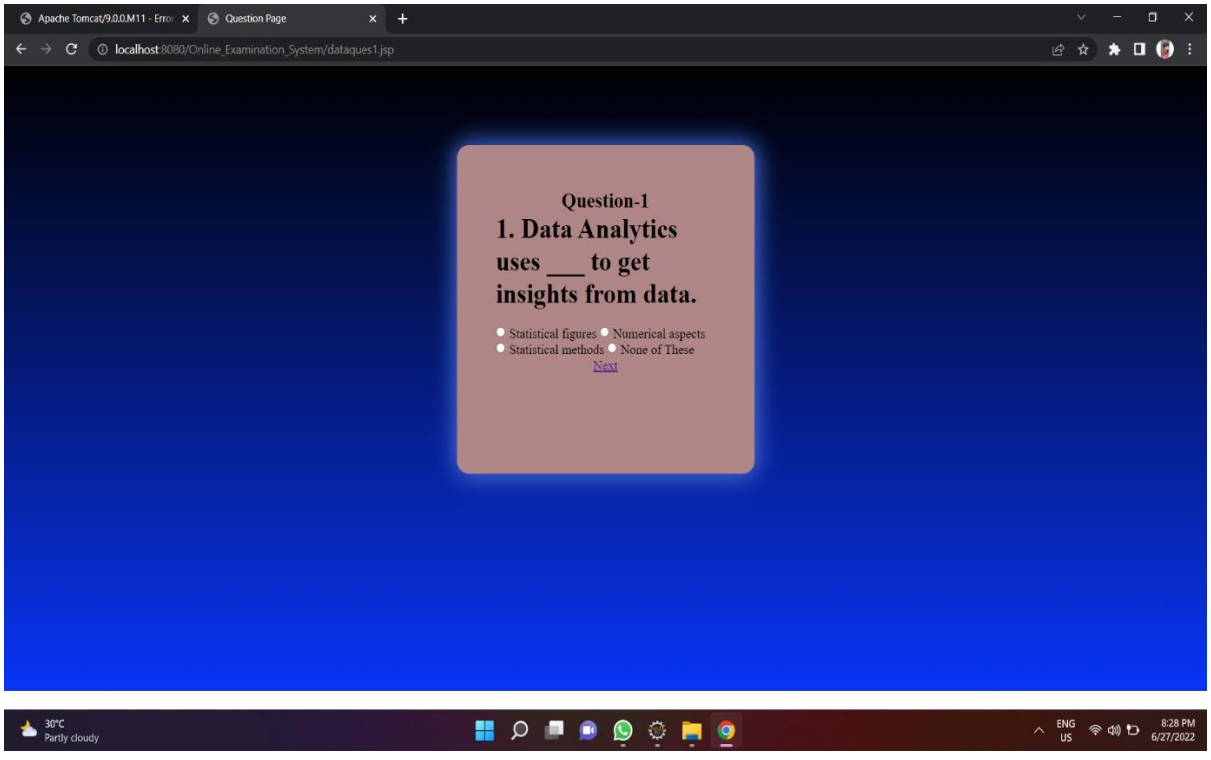
LOGIN PAGE



SIGN UP PAGE




Apache Tomcat/9.0.0.M11 - Error
Question Page
localhost:8080/Online_Examination_System/dataques3.jsp
Question-3
3. Linear Regression is the supervised machine learning model in which the model finds the best fit ___ between the independent and dependent variable.
Linear line
Nonlinear line
Curved line
None of These
Submit
30°C
Partly cloudy
ENG
US
8:28 PM
6/27/2022


Apache Tomcat/9.0.0.M11 - Error
Question Page
localhost:8080/Online_Examination_System/dataques1.jsp
Question-1
1. Data Analytics uses ___ to get insights from data.
Statistical figures
Numerical aspects
Statistical methods
None of These
Next
30°C
Partly cloudy
ENG
US
8:28 PM
6/27/2022

CONCLUSION

This project developed, incorporated all the activities involved in the browsing centre.
It provides all necessary information to the management as well as the customer with the use of this system; the user can simply sit in front of the system and monitor all the activities without any physical movement of the file. Management can service the customers request best in time.
The system provides quickly and valuable information. These modules have been integrated for effective use of the management for future forecasting and for the current need.

Tough advance java is not in our syllabus therefore we have taken extra classes on these toh make the project...
Jdbc is not in our syllabus
New things we learned are
Maeven
J2ee
Jsp
Javascript
....
So whatever we learnt we have done

SCOPE FOR FURTHER DEVELOPMENT

The system can be designed for further enhancement .This could also be developed according to the growing needs of the customer.

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    - Learn Java in Eassy Steps
    - Complete reference Java