

Software Requirements Specification for Union Public Service Commission



Final Report

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Introduction :-

India's central recruiting agency, Union Public Service Commission (UPSC), is one amongst the Constitutional bodies. The Civil Services Examination (CSE) is a National level competitive examination in India, conducted by the Union Public Service Commission (UPSC) for the recruitment to various Civil Services of the Government of India. The Civil Services Examination (CSE) stands as one amongst the toughest examinations in the country. The year-long examination is conducted by the Union Public Service Commission (UPSC). Every year, over 10 lakh aspirants compete for the All India Services, such as IAS, IPS and IFS. Along with Central Services, Group A and B Services are also equally popular across India. The UPSC conducts the CSE for a total of 24 services apart from Indian Forest Service (IFS).

Scope :-

The Software Application will benefit the aspirants to get updated. It is also be more easier way for registration for any Civil Services Examination. It is more easier to get latest recruitments, clear query, match and check the answer sheets, and declare result without any third party interference application. This system provides an easy solution for aspirants to register for any of the exams as he might don't get time for that or might not interested in visiting there and dealing with lot of formalities. It is useful for the both the aspirant and the member of UPSC to get in to what all happening and get notified. This application will be impactful and can be used safely as per the guidelines by just having internet connection.

Functional Requirement :-

This section provides the general requirement overview of the software. The Various functional modules that can be implemented by this Software will be :-

Functional Requirements of the User/Visitor :-

1. Description: Registration of the new user.

Input: If user wants to register for exam then he/she must be registered with UPSC Registration portal.

Processing: Taking proper information from the User and getting validated.

Output: Registration is Done.

2. Description: Login Performed by the User.

Input: Customer logs in to the system by entering valid user id and password for the completing the form fill-up.

Processing: Validating the input given by User.

Output: You get logged in.

3. Description: Payment made towards the examination.

Input: User want to pay the Examination Fees.

Processing: Doing fee Transaction of the User.

Output: The Examination fees has been paid successfully.

4. Description: Logout performed by the User.

Input: User want to be logged out.

Processing: Logging out the User.

Output: The User has been successfully logged out.

5. Description: Print the form/application.

Input: User wants his examination form to be printed

Processing: Printing the form.

Output: You get the print out.

6. Description: Registering the complain/ query request of the user/Aspirant/Visitor.

Input: User performs a complain/query request.

Processing: Registering the Query/Complain.

Output: You have successfully registered your Query/Complain.

7. Description: User wants to download Admit Card.

Input: User want to download Admit Card by entering his registration Number and Date of Birth.

Processing: Downloading the Admit Card if the user input is correct or else give an alert and refresh.

Output: You can download the Admit card.

8. Description: User want to check the Result.

Input: User want to download Admit Card by entering his registration Number and Date of Birth.

Processing: checking his/her result if the input data is correct.

Output: The user can see his result.

9. Description: The User has forgotten Password.

Input: If User has forgotten his Password and wants to change the Password.

Processing: Validating his Contact Number and Email-ID with One-Time Password for it.

Output: The Password is set again by the user.

Functional Requirements of the the administrator/Member of UPSC :-

10. Description: Administrator wants to check the detail of the Registered Candidate for a specific examination of UPSC.

Input: The Administrator wants to access the information of the Registered Candidate.

Processing: Fetching the detail of the Registered Candidate if present in the database.

Output: The Detail of the Candidate is displayed.

11. Description: Administrator wants to solve the problem/query of the Registered Candidate for an specific examination of UPSC.

Input: The Administrator wants to solve the Problem/Query of the Registered Candidate.

Processing: Resolving the Problem/Query.

Output: The Problem/Query has been solved.

12. Description: Administrator wants to declare the results of the Registered Candidates for an specific examination of UPSC.

Input: The Administrator wants to declare the result of the Registered Candidates.

Processing: Declaring the Result.

Output: The Result has been uploaded.

13. Description: Administrator wants to make an announcement for the Candidates for an specific examination of UPSC.

Input: The Administrator wants to notify the Candidate for the upcoming Exam.

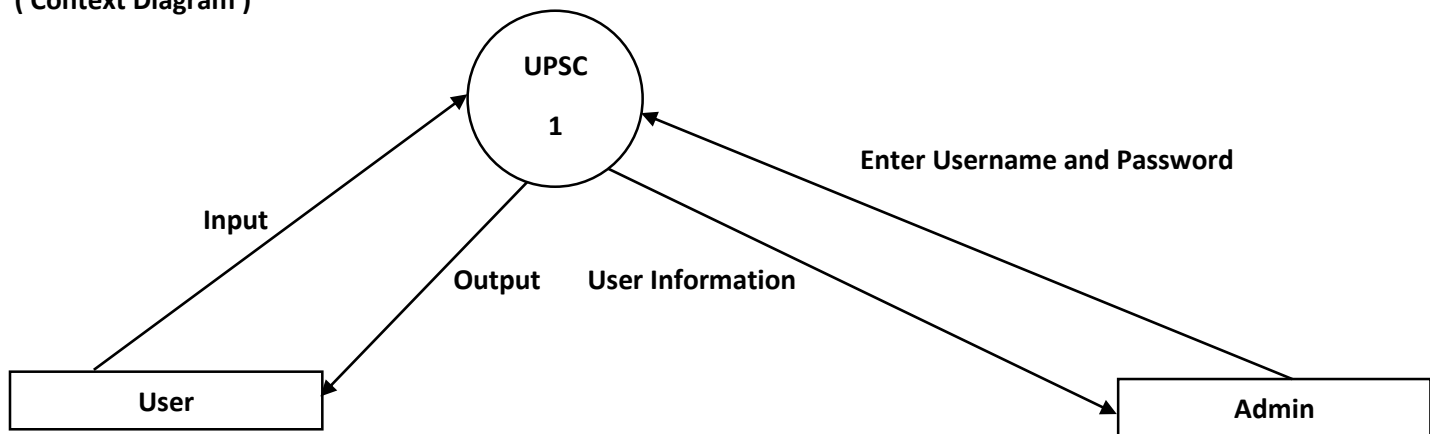
Processing: Uploading the Notification.

Output: The Notification has been Uploaded.

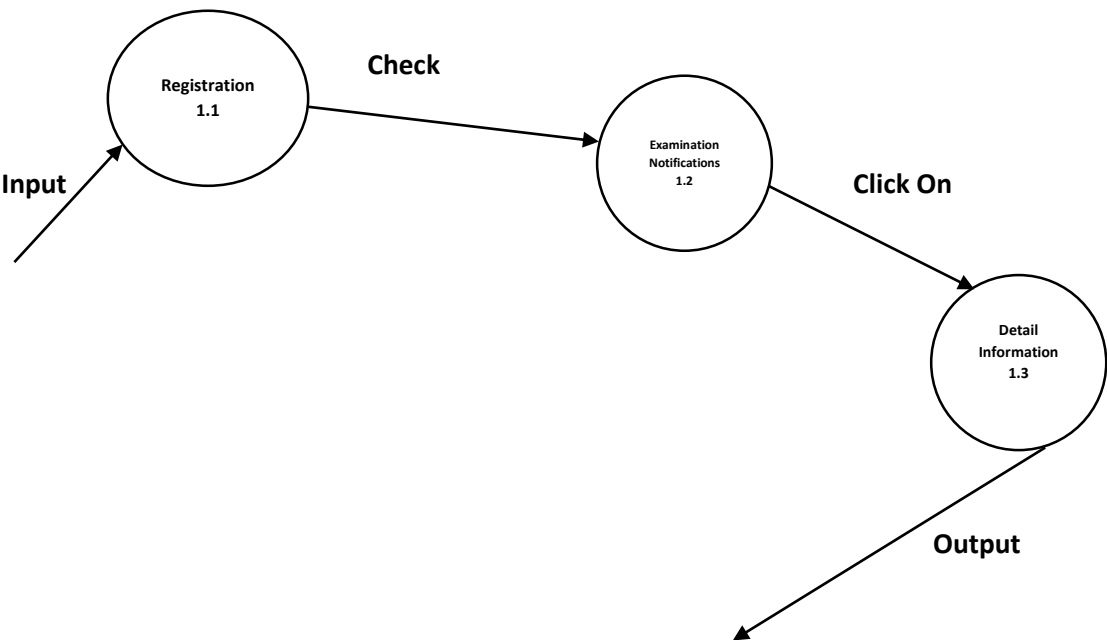
Data Flow Diagrams (DFDs) for UPSC :-

0-Level :-

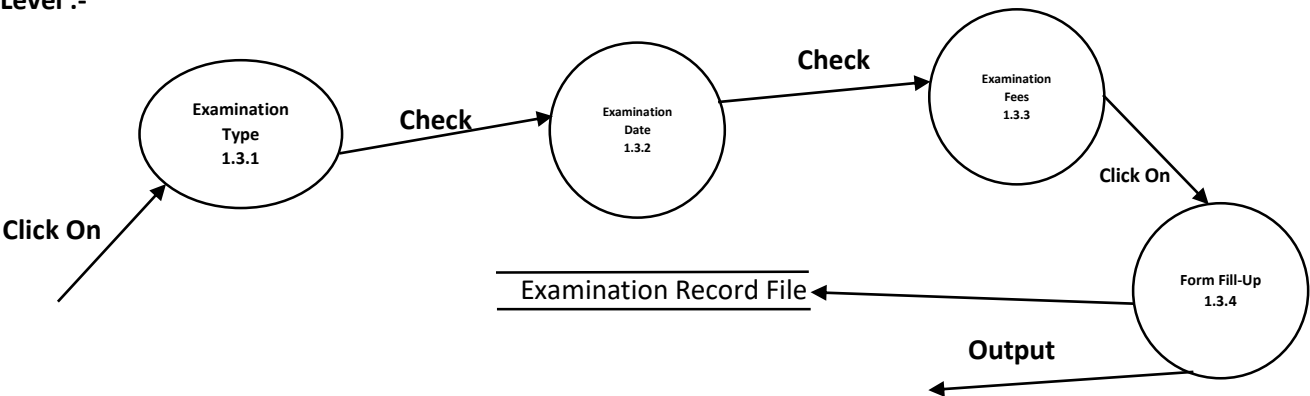
(Context Diagram)

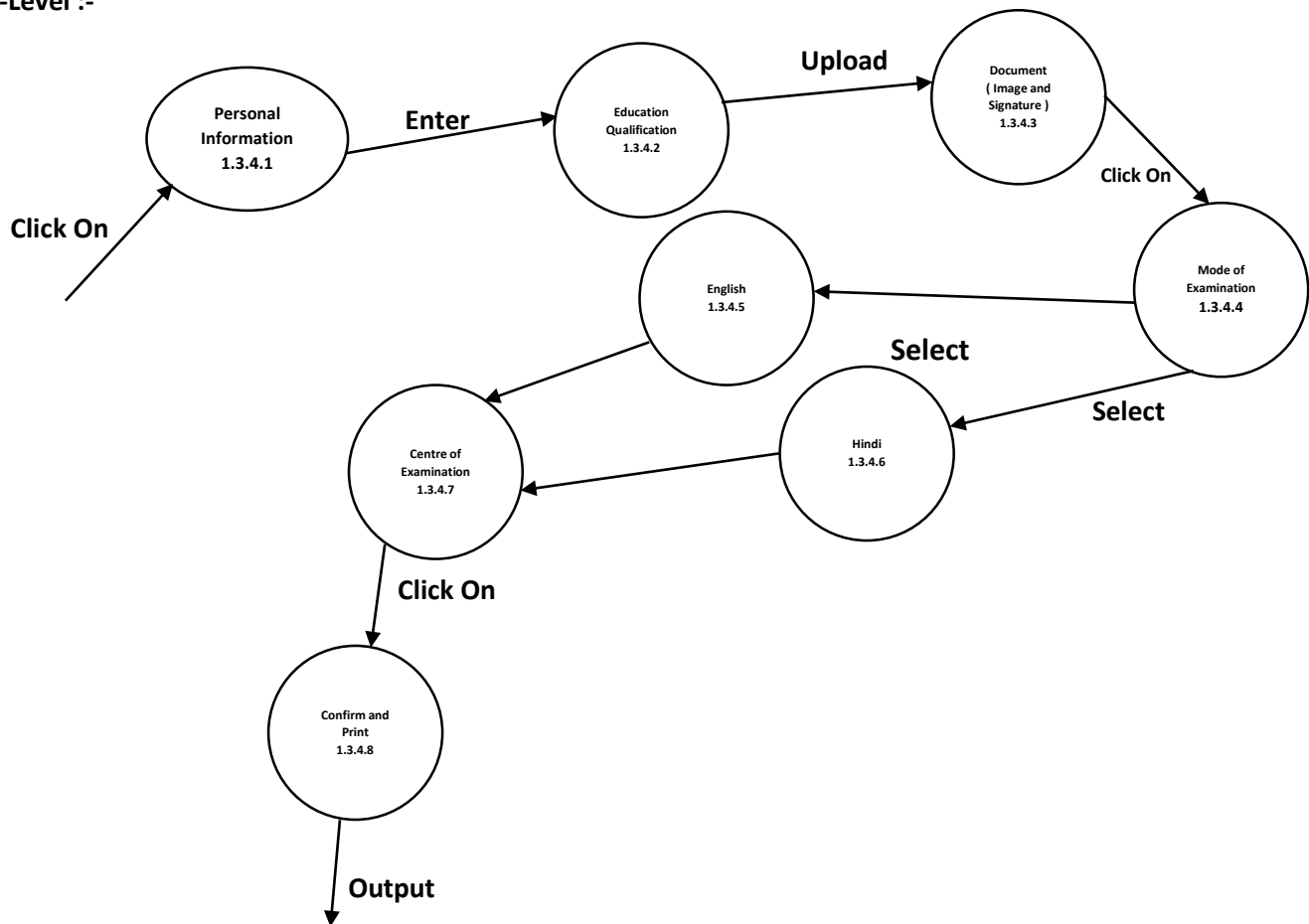


1-Level :-



2-Level :-



3-Level :-**Use Case Diagram (USDs) for UPSC :-****2.2.1. General Use Case about Login**

The Login Page is used as a common page for all users in this system.

Initial Step-by-Step Description:

1. When a user enters to the system, s/he sees the login page.
2. If all input information is true, the user can enter the UPSC Home Page.

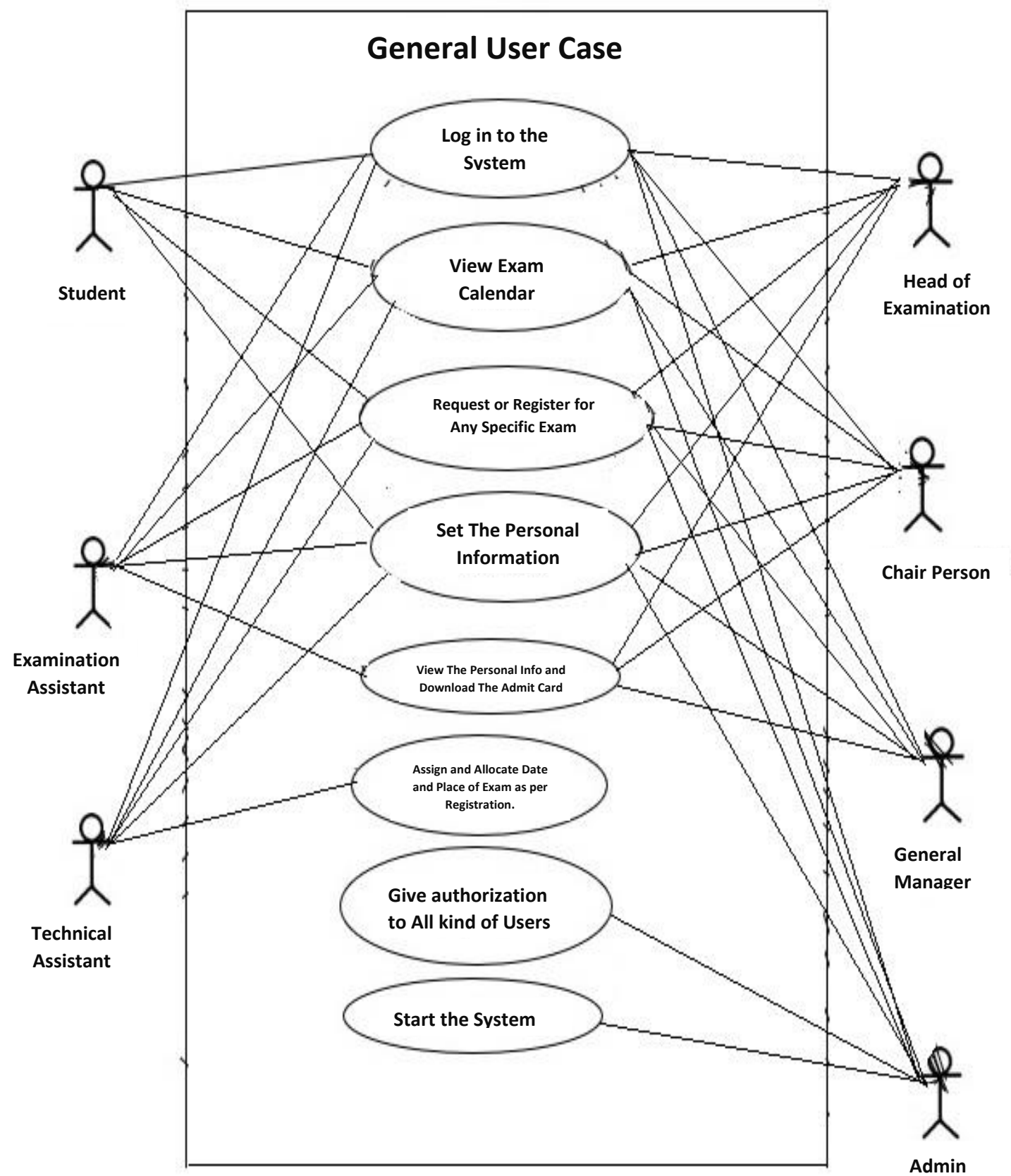


Figure 1: General Use Case

2.2.1. Student Use Case

Use Case:

- Login to the system
- View the exam calendar
- Register for Any of UPSC Exams
- Set the personal information
- View the personal information

Diagram:

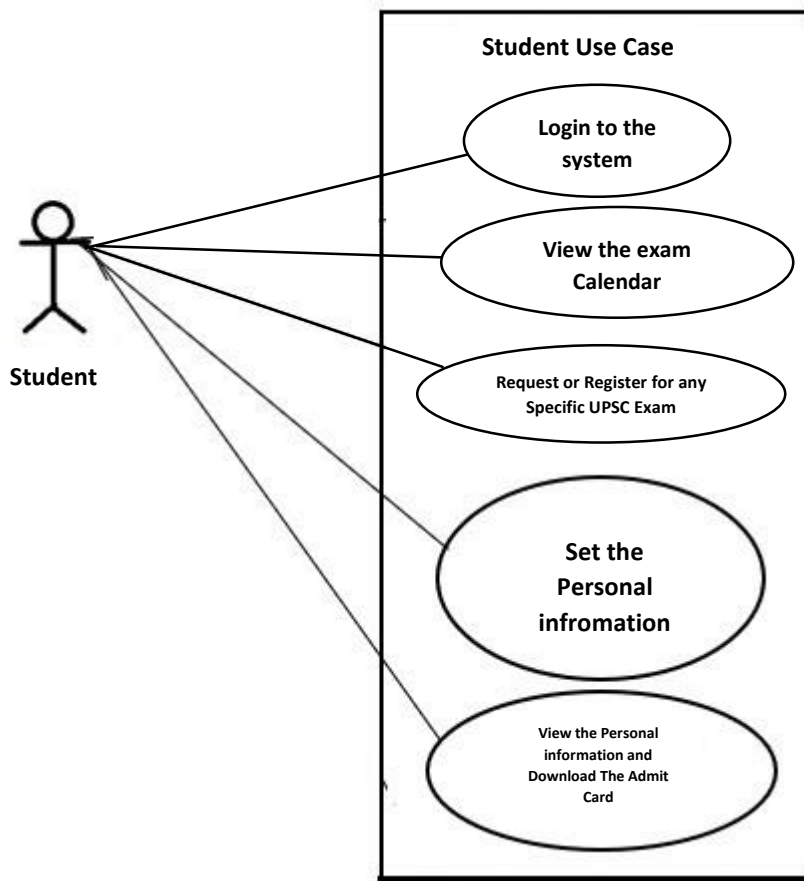


Figure 2: Student Use Case

Brief Description:

A student can be able to login to the system, and view his/her exam calendar. In addition, the student shall be able to set, update and view the personal information.

Initial Step-by-Step Description:

1. When a student enters to the system, s/he views the login page.
2. In Settings part, the student can change her/his password.

3. In Settings part, the student can choose how to receive messages and how many days before s/he wants to be informed about coming exams by GSM or Email.(Default: GSM, 7 days ago)
4. Student can view exam calendar of the courses which s/he takes in the semester in gridview.
5. Student can sort the exams, which are in gridview, by properties such as course code, course name, date of the exam etc.
6. In exam calendar, there are course code, course name, exam's date, class, time, duration, additional notes. For these additional notes, there is alert. When the student clicks the alert link, this course's notes will be opened as the popup.
7. There are some options under exam calendar to print out the calendar.
8. In Setting part, if the student wants to be notified when the teacher assigns an exam in a certain day in the system, s/he can choose "I want to be notified" choice to get to be notified at that moment.

2.2.2. Examination Assistant Use Case

Diagram:

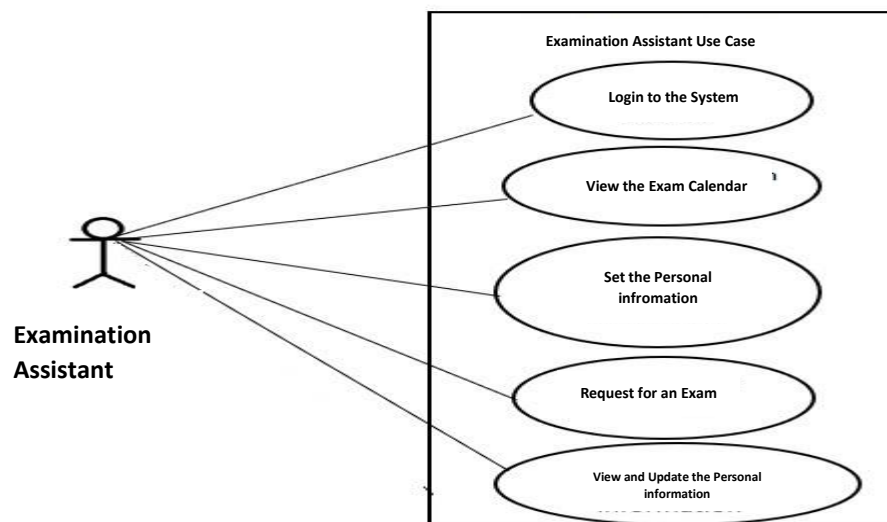


Figure 3: Examination Assistant Use Case

Use Case:

- Login to the system
- View the exam calendar
- Set the personal information
- View the personal information
- Request for an exam

Brief Description:

An Examination Assistant can be able to login to the system, and view the own exam calendar. In addition, the teacher shall be able to set and view the personal information. An exam request can be done by The Examination Assistant.

Initial Step-by-Step Description:

1. The Examination Assistant can log in to the system.
2. He/she will be able to view the exam schedule on his / her page.
3. In Settings part, the teacher can choose how to receive messages and how many days before s/he wants to be informed about coming exams which s/he gives as a course by GSM or Email.(Default: GSM, 7 days ago)
4. He/she will be able to change the password from the settings section.
5. The Examination Assistant will be able to choose to take alert how many days in advance. At the same time, he/she can choose to take with Email or GSM. (default: GSM, 7 days in advance)
6. He/she will be able to view his/her personal information in the about section. (Name, surname, department, rank, title, address, telephone, email and picture)
7. The parts that can be seen in the exam schedule; the code of the course, the name of the course, the date of the exam, the class, the duration of the exam, the time of the examination, approval status, the examiner supervisor in the exam.
8. The tExamination Assistant is able to sort the exams which are in the gridview control according to certain characteristics. (Exam Name, exam date etc.)
9. When Examination Assistant requests for an exam; the name of the examination, which exam, which place, daytime interval, time interval, supervisor assistant preference, exam type, student absence information can be entered.
10. After Examination clicks on the request button, a pop-up which includes “You requested XXX exam’s time period in between DD-MM-YYYY and DD-MM-YYYY. Do you confirm your request?” will be opened on the screen.
11. When the exam is approved, the teacher will receive a confirmation message such as “In DD-MM-YYYY at XX:XX you have XXX’s exam, do you confirm it?”
12. When Examination Assistant confirms the confirmation message, the exam is set on the exam calendar. If the Examination does not, then he should make a new request.

2.2.3. Technical Assistant Use Case

Use Case:

- Login to the system
- View the exam calendar
- Set the personal information
- View the personal information
- View the assigned exams

Brief Description:

A Technical Assistant can be able to login to the system, and view the own exam calendar. In addition, the assistant shall be able to set and view the personal information and view the assigned exams.

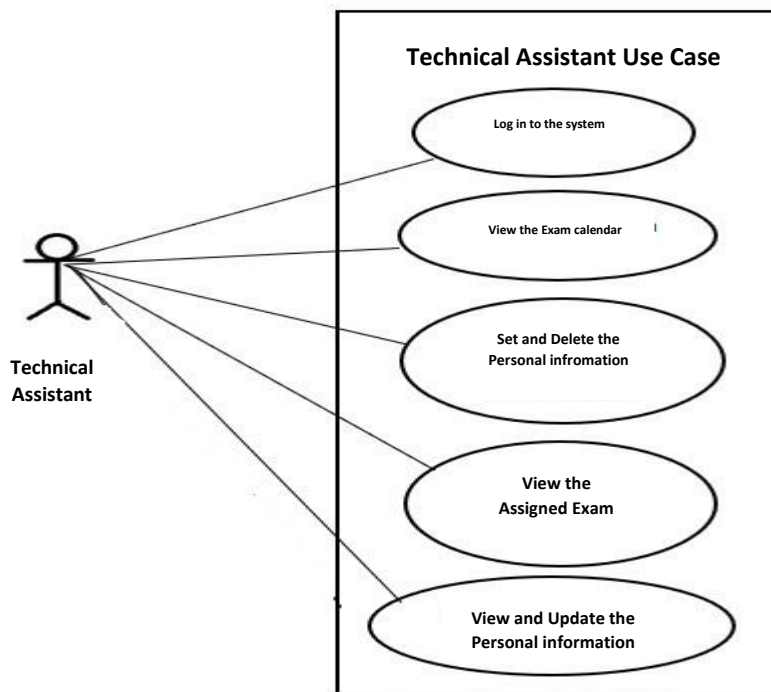
Diagram:

Figure 4: Technical Assistant Use Case

Initial Step-by-Step Description:

1. Technical Assistant can login into the system.
2. Techcal Assistant can view the calendar of exam.
3. In Settings part, the technical assistant can change her/his password.
4. In Settings part, the Technical assistant can choose how to receive messages and how many days before s/he wants to be informed about coming exams by GSM or Email.(Default: GSM, 7 days ago)
5. The Technical assistant will be able to get his own exam schedule.
6. Exam Mode, Exam Name, Exam Date, Exam Location, Exam Duration, Exam Hour, Exam Rules and allocation of the Exam can be seen in the exam schedule.
7. Technical Assistant can sort the exams, which are in gridview, by some properties such as course code, course name, date of the exam etc.
8. When the exam is approved, the assistant will be informed by the system via Email or GSM.

9. In Setting part, if technical assistant wants to be notified when the Examination Assistant assigns an exam for this assistant in a certain day in the system, s/he can choose “I want to be notified” choice to get to be notified in that moment.

2.2.4. Chairperson Use Case

Diagram:

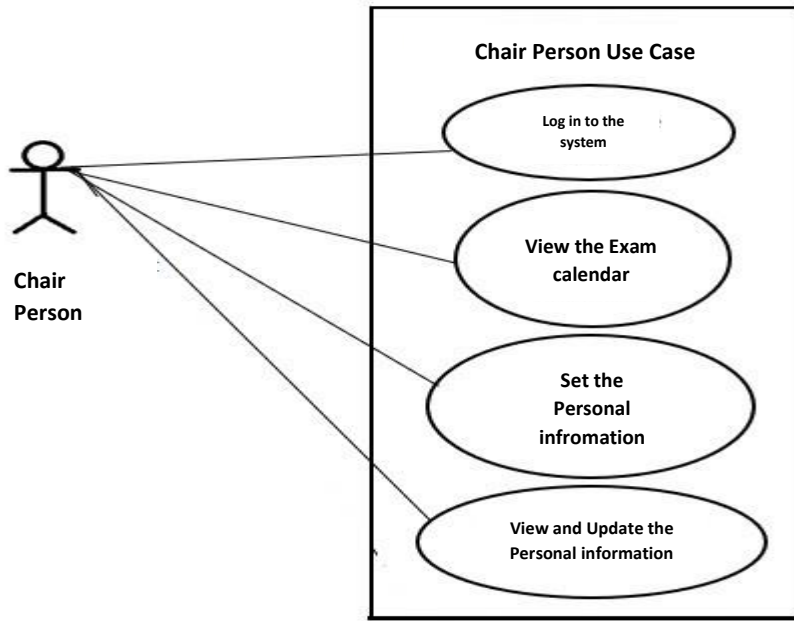


Figure 5: Chair Person Use Case

Use Case:

- Login to the system
- View the exam calendar
- Set the personal information
- View the personal information

Brief Description:

A Chair Person can be able to login to the system, and view the whole exam calendar of his/her department. In addition, the Chair Person shall be able to set and view the personal information.

Initial Step-by-Step Description:

1. Chair Person can login into the system.
2. Chair Person can view the calendar of exam.
3. In Settings part, Chair Person can change her/his password.

4. In Settings part, Chair Person can choose how to receive messages and how many days before s/he wants to be informed about coming exams by GSM or Email.(Default: GSM, 7 days ago)
5. In exam calendar, Chair Person can reach information such as course code, course name, lecturer of the course, proctor(assistant), exam's date, class, time, duration, additional notes.
6. Chair Person can sort the exams, which are in gridview, by some properties such as Exam Mode, Exam Name, Date of the Exam etc.
7. There are some options under exam calendar to print out the exam calendar by the Chair Person.

2.2.5. Head of Examination Use Case

Diagram:

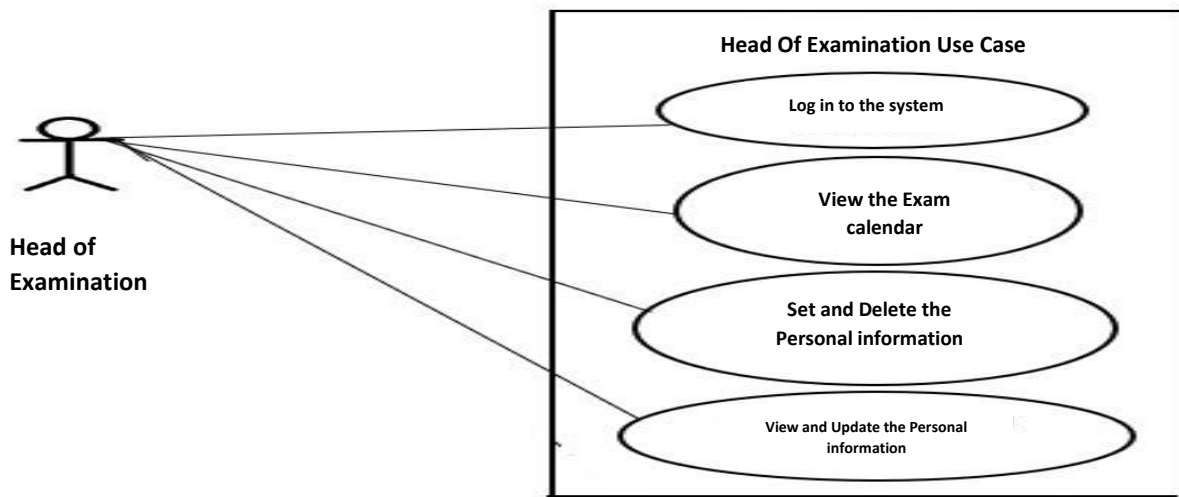


Figure 6: Head of Examination Use Case

Brief Description:

Head Of Examination (HOE) can be able to login to the system, and view the whole exam calendar of his/her assistants. In addition, the HOE shall be able to set and view the personal information.

Initial Step-by-Step Description:

1. HOE can login into the system.
2. HOE can view the calendar of the exam.
3. In Settings part, the HOE can change her/his password.
4. In Settings part, HOE can choose how to receive messages and how many days before s/he wants to be informed about coming exams by GSM or Email. (Default: GSM, 7 days ago)
5. In exam calendar, HOE can reach information such as Exam Mode, Exam Name, Exam Date, Timing, Location, Duration, and Other Additional Reference.

6. HOE can sort the exams, which are in gridview, by some properties such as Exam Code, Exam Name, Date of the Exam etc.

7. There are some options under exam calendar to print out the invislation duty of the all examination coordinator.

2.2.6. General Supervisor Use Case

Diagram:

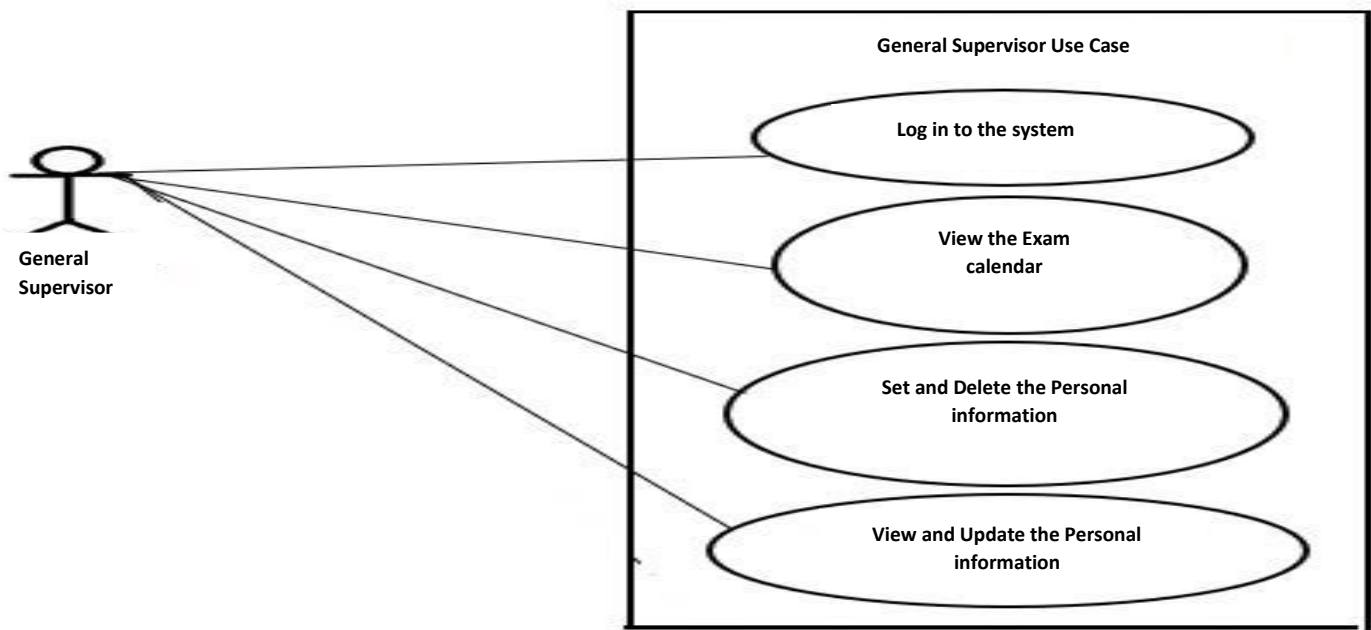


Figure 7: General Supervisor Use Case

Use Case:

- Login to the system
- View the exam calendar
- Set the personal information
- View the personal information

Brief Description:

A General Supervisor (GS) can be able to login to the system, and view the whole exam calendar of the university. In addition, the rector shall be able to set and view the personal information.

Initial Step-by-Step Description:

1. GS can login into the system.
2. In the main page, GS can view the calendar of an exam.

3. In Settings part, GS can change her/his password
4. In Settings part, GS can choose how to receive messages and how many days before s/he wants to be informed about coming exams by GSM or Email. (Default: GSM, 7 days ago)
5. In exam calendar, GS can reach information such as Exam mode, Exam name, date, time, duration, and other additional references.
6. GS can sort the exams, which are in gridview, by some properties such as Exam Code, Exam Name, Date of the Exam etc.
7. There are some options under exam calendar to print out the invislation duty of the all examination coordinator.

2.2.7. Admin or Main User

Use Case:

- Login to the system
- View the exam calendar
- Set and delete the personal information
- View and update the personal information
- Give authorizations to any user of any kind
- Starting the System

Brief Description:

- The main user can be able to login to the system, and view the whole exam calendar of the UPSC. In addition, the main user shall be able to set and view the personal information. The main user starts the system or distribution of exams and can be able to give authorizations to any user s/he wants.

Initial Step-by-Step Description:

1. Admin can log in to the system.
2. Admin can view the exam schedule.
3. In Settings part, admin can change her/his password.
4. Admin can view personal information in the about part (Name, surname, rank, title, address, telephone, and email address,etc)
5. There are some options under exam calendar to print out the exam calendar of all exams in UPSC.
6. Admin will be able to view Exam Code, The Name of Exam, Date, Class, Duration, Time, Supervisor Name, Additional in the Exam Schedule.
7. Admin can sort the exams, which are in gridview, by some properties such as Exam name, Exam code, Exam date etc.
8. Admin will make start the exam distribution system.

8.1. At the end of each day, the admin will create the exam schedule for the exams that were requested on that day.

9. The admin will be able to authorize the requested person.

9.1. Admin will enter the TC (Token) number of the person whom he wants to authorize. When he/she click the give authorization named button, he/she will get through his/her phone a random password and the name of the person he/she wants to authorize.

9.2. When the password is entered correctly by the admin, he/she will be given the authority he wants.

9.3. When admin enters her/his password incorrectly for 3 times, s/he will be not able to access the authorization part for 1 hour.

Diagram:

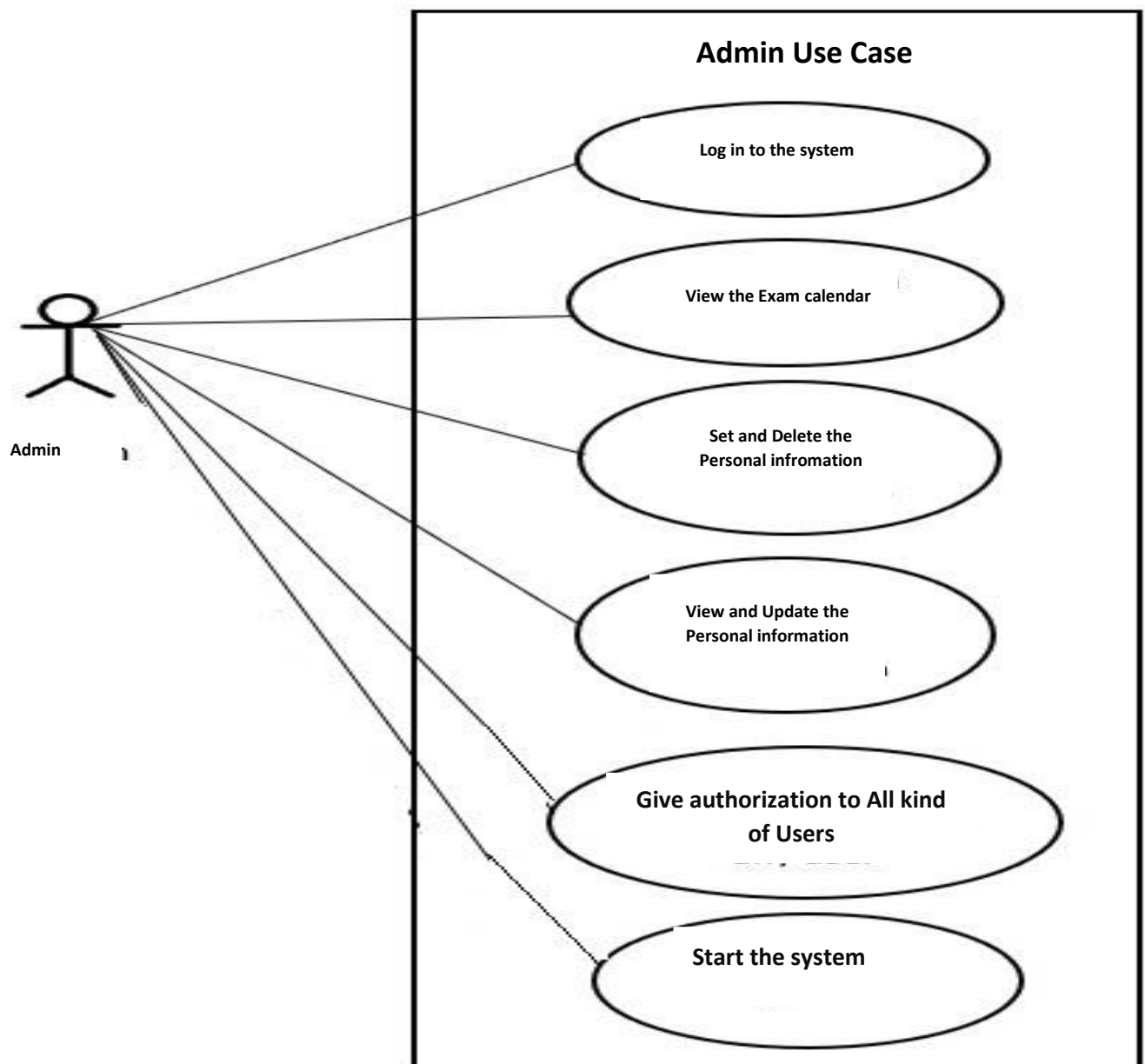


Figure 8: Admin Use Case

Test Cases for Testing of UPSC :-

Functiona Requirements	State	Input	Expected Output	Actual Output	Test Case (Pass/Fail)
Functional Requirements of the User/Visitor :-					
1. Description: Registration of the new user.	Log Out	If user wants to register for exam then he/she must be registered with UPSC Registration portal.	Registration is Done.	Registration is Done.	Pass
2. Description: Login Performed by the User.	Log Out	Customer logs in to the system by entering valid user id and password for the completing the form fill-up.	You get logged in.	You get logged in.	Pass
3. Description: Payment made towards the examination.	Log In	User want to pay the Examination Fees.	The Examination fees has been paid successfully.	The Examination fees has been paid successfully.	Pass
4. Description: Logout performed by the User.	Log In	User want to be logged out.	The User has been successfully logged out.	The User has been successfully logged out.	Pass
5. Description: Print the form/application.	Log In	User wants his examination form to be printed.	You get the print out.	You get the print out.	Pass

6. Description: Registering the complain/ query request of the user/Aspirant/Visitor.	Log In	User performs a complain/query request.	You have successfully registered your Query/Complain.	You have successfully registered your Query/Complain.	Pass
7. Description: User wants to download Admit Card.	Log In	User want to download Admit Card by entering his registration Number and Date of Birth.	You can download the Admit card.	You can download the Admit card.	Pass
8. Description: User want to check the Result.	LogIn	User want to download Admit Card by entering his registration Number and Date of Birth.	The user can see his result.	The user can see his result.	Pass
9. Description: The User has forgotten Password.	Log Out	If User has forgotten his Password and wants to change the Password.	The Password is set again by the user.	The Password is set again by the user.	Pass

Functional Requirements of the the administrator/Member of UPSC :-

Functionaonal Requirements	State	Input	Expected Output	Actual Output	Test Case (Pass/Fail)
10. Description: Administrator wants to check the detail of the Registered Candidate for a specific examination of UPSC.	Log In	The Administrator wants to access the information of the Registered Candidate.	The Detail of the Candidate is displayed.	The Detail of the Candidate is displayed.	Pass
11. Description: Administrator wants to solve the problem/query of the Registered Candidate for an specific examination of UPSC.	Log In	The Administrator wants to solve the Problem/Query of the Registered Candidate.	The Problem/Query has been solved.	The Problem/Query has been solved.	Pass

12. Description: Administrator wants to declare the results of the Registered Candidates for an specific examination of UPSC.	Log In	The Administrator wants to declare the result of the Registered Candidates.	The Result has been uploaded.	The Result has been uploaded.	Pass
13. Description: Administrator wants to make an announcement for the Candidates for an specific examination of UPSC.	Log In	The Administrator wants to notify the Candidate for the upcoming Exam.	The Notification has been Uploaded.	The Notification has been Uploaded.	Pass

Non-Functional Requirements :-

Following Non-Functional Requirements will be there are as follows :-

External Requirement :-

- Secure access to User's confidential data.
- 24X7 Availability and Accessibility.
- Better component design to get better performance at peak time.

Security :- Secure access to User's confidential data.

Reliability :- It's should be trustworthy and the privacy should be maintained.

Maintainability :- It should be updated and should store data properly at a proper location.

Portability :- It should be well suited in any environment or should not have much buffering.

Extensibility :- Flexible service based architecture will be highly desirable for future extension.

Reusability :- The module should have higher fan in as to have high cohesion.

Compatibility :- it should have compatible disk to store and manage the information of the User.

Performance Requirements :-

In order to maintain an acceptable speed at maximum number of uploads allowed from an User as many number of users can access to the system at any time. Also the connections to the servers will be based on the attributes of the user like his location and server will be working 24X7 times.

Technical Issues :-

This system will work on client-server architecture. It will require an internet server and which will be able to run PHP application. The system should support some commonly used browser such as Inter Explorer, Mozzila Firefox, Google Chrome etc.

Constraints :-**Interface Requirement :-****Various interfaces for the product could be :-**

- 1). Login
- 2). Registration Form
- 3). There will be a screen displaying information about the registration process.
- 4). After registering for the exam, the system will send one copy of the bill to the user's Email address.
- 5.) Downloading the admit card.
- 6.) Checking the Result.

Software Interface :-

1. Operating System: Windows XP or above which supports networking.
2. JAVA development toolkit.

Hardware Interface:-

Hardware requirements for insurance on internet will be same for both parties which are as follows :-

- Processor: Dual Core
- RAM: 2 GB
- Hard Disk: 320 GB