Software Requirements Specification

for

Judiciary Information System

Version 1.0 approved

Prepared by Samarth Mishra

National Institute of Technology, Rourkela

17th January,2023

Table of Contents

Revision History

Name	Date	Reason For Changes	Version

1. Introduction

1.1 Purpose

The aim of this project is to develop and implement an Judiciary Information System (JIS) to control and allow complete registration of all court case which are related to the court by the domain user thus registrar, who can register, update, delete, and search case and create report. The flow of information provides communication and notification between the courts and public.

1.2 Document Conventions

● Acronyms and Abbreviations:
a. SRS: Software Requirements Specification.
b. WWW: World Wide Web.
c. GUI: Graphical User Interface.
d. CIN: Case Identification Number
e. JIS: Judiciary Information System
f. API: Application Program Interface
g. JWT : JSON Web Tokens
h. DFD: Dataflow Diagram

● Definitions:
a. Adjournment: a pause or rest during a formal meeting or trial, or the act of giving a pause or rest
b. Registrar: the chief executive officer of a judicial forum
c. Defendant: a person who is accused of a crime in a court of law
d. Prosecutor: a public official who charges somebody with a crime and tries to show that he/she is guilty in a court of law

1.3 Intended Audience and Reading Suggestions

This project intends to focus on the audiences who are concerned in the law delivery jurisdiction (primarily lawyers,judges,etc.) and
We have three leading Actors in our system:
● Admin: Mainly responsible for administrative functions like assignment of dates of hearing and generating report of cases.
● Member: All members can search the currently pending court cases, cases that have been resolved over any given period, the cases that are coming up for hearing on a particular date and the status of any particular case.
● System: Mainly responsible for sending notifications for court hearings to the users.

1.4 Product Scope

The aim of this project is to develop and implement a Judiciary Information System to control and allow complete registration of all court case which are related to the court
by the domain user thus registrar, who can register, update, delete, and search case and create report. The flow of information provides communication and notification between the courts and public.

When this project is completed, it will benefit the following stakeholders: the industry (Judicial service), the society and the academia.

1.4.1 The Industry:

The system will be used by the registrar for case registration and data processing (data storage and data retrieval) which involves creation, modification and updating information through user interface.
The Chief registrar as well will be able to know the activities that is going on in various courts such as the name of registrars and the judge in each court, the time the registrar spent after login and also show the total number of a case type in each court such as trespassing, defrauding, robbery, data breach etc.

1.4.2 The society

The system will enable client or individuals to get access to a case details anywhere and anytime by going online to visit the webpage, which shows the details of a case such as the sitting date, the suit number, the name of the judge who will handle the case, the courtroom which the case will be held, the names of both plaintiff and defendant, etc.

1.4.3 Academia

This project will illustrate how open source tools can be used for the development of web-based applications thereby making the academia aware of the benefits of using cheaper tools. This project in future will allow other students to review the application and to think of new ways in which some components of the application will be improved or think of ways of adding new components to meet more needs.

1.5 References

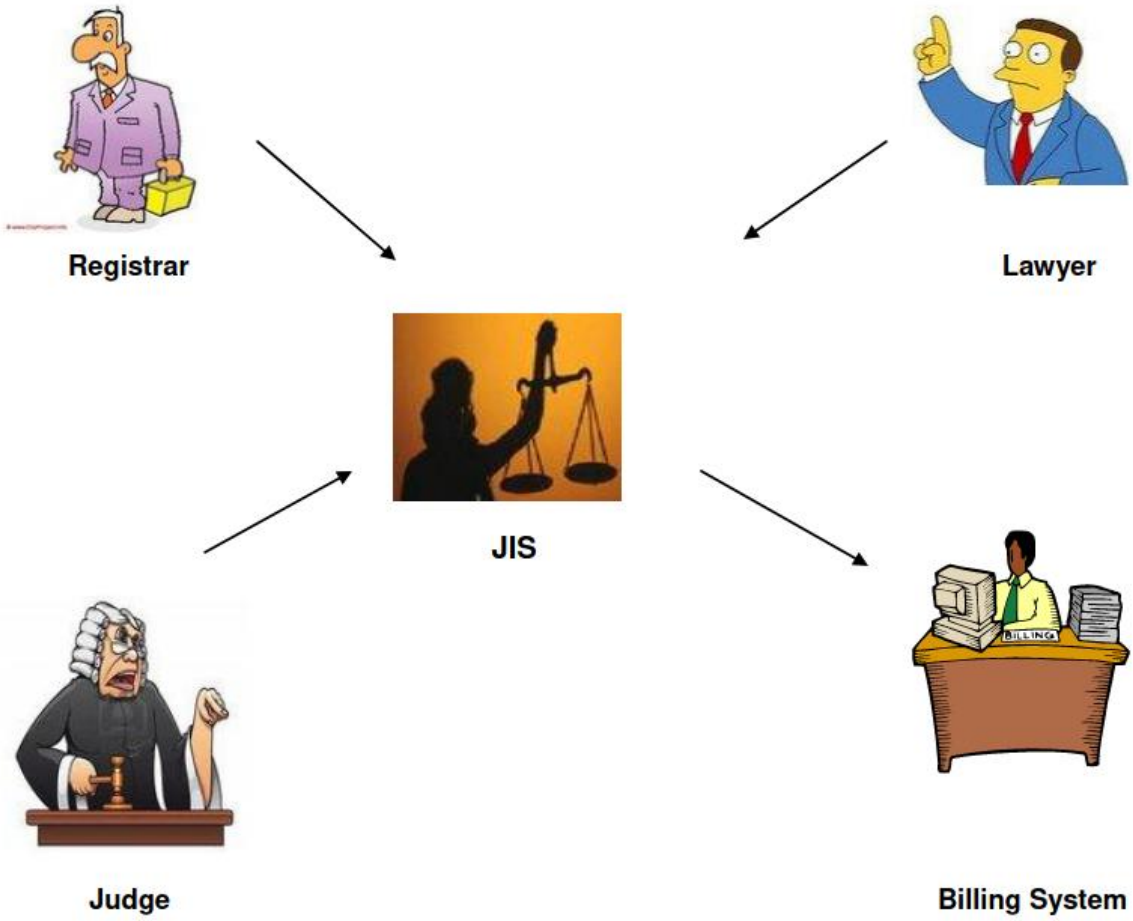
http://users.csc.calpoly.edu/~jdalbey/308/Deliver/SRSformat.html

2. Overall Description

2.1 Product Perspective

The Judiciary Information System is a package to be used by the judges and the lawyers to improve the efficiency in handling court cases. The system provides information related to the cases which have been resolved so that judges can get guidance on their judgement and the lawyers can get guidance on their cases. This system is the first of its kind and

replaces the old system of browsing through physical documents and papers thus reducing the maintenance burden.
The complete overview of the system is as shown in the overview diagram below:



Overview of the Proposed System

2.2 Product Functions

The Judiciary Information System provides help to handle court cases and also to make the past court cases easily accessible to the lawyers and judges. The functions of the system include the system providing different type of services based on the type of users [Registrar/Judge/Lawyer].

- The judges would be able to browse through the old cases for guidance on their judgement and examining the lines of judgement given previously to similar cases.
- The lawyers would be permitted to browse old cases, but would be charged for each old case they browse.

- This system allows to search for history of past cases by entering key words.
- The registrar can assign a date of hearing for each case by the help of the computer which displays the vacant slots on any working day.
- The registrar can get the information about the currently pending cases, the cases which have been resolved, the cases that are coming up for hearing on a particular day and the status of any particular case.
- The registrar is provided with the interface to add/delete the accounts of judges/lawyers

2.3 User Classes and Characteristics

The users of Judiciary Information System are the Registrar, the judges, the lawyers and the administrators who maintain the system.
The users are assumed to have basic knowledge of the computers, internet and the system. The administrators of the system should have more knowledge of the internals of the system and should be able to rectify the small problems that may arise due to disk crashes, power failures and other catastrophes to the system.

2.4 Operating Environment

- The internet connection should be available 24 hours a day for the server to run.
- This software is platform independent i.e it runs on every operating system (Windows/Linux/Mac).
- The system using this software should have Python3 installed
- The system running this software should have minimum 128 MB RAM for Windows and 64 MB RAM for Linux.

2.5 Design and Implementation Constraints

- The information of all the past cases must be stored in a database that is accessible by the Judiciary Information System.
- The billing system is connected to the Judiciary Information System (JIS) and the database used by the billing system must be compatible with the interfaces of the JIS.
- The users must have their correct usernames and passwords to enter the JIS.
- The files in which the information regarding the previous cases are stored should be secured against malicious deformations.

2.6 User Documentation

The proper user interfaces, user's manual, online help and the guide to installation and maintenance of the system must be sufficient to educate the users on how to use the system without any problems.

2.7 Assumptions and Dependencies

- Full working of JIS is dependent on availability of an internet connection.
- The users have sufficient knowledge of computers and internet.
- The users know English language as the user interface will be provided in English.
- The system can access the previous cases database.

3. External Interface Requirements

3.1 User Interfaces

The user interface is basically divided into three main sections: the interface related to the Registrar, the judge and the lawyer and are as follows:

- **Registrar**

  1. Registrar Log-In: This button is placed on the home page of the software. The Registrar logs into the system by entering his user name and password. If the Registrar enters the wrong username or password, an error message pops up describing the error.

  2. Input Case Details: Once the Registrar logs into the system, he can enter all the case details by selecting this button. The Registrar finishes entering the details by selecting the Done option.

  3. Display Dates: After entering the details of the case, the Registrar selects this button to ask the computer to display the vacant slots on any working day during which the case can be scheduled. If no dates are available, a message regarding the same pops up.

  4. Enter Summary: After the Registrar logs into the system, he can enter the summary of the case by selecting this button and entering its summary

  5. Pending Cases: This button appears after the Registrar logs into the system. He selects this button to see the details of the pending cases by entering their CIN.

  6. Resolved Cases: This button appears after the Registrar logs into the system. He selects this button to see the details of the resolved cases by entering their CIN.

  7. Due Cases: This button appears after the Registrar logs into the system. He selects this button to see which cases are scheduled on a particular date by entering the date.

  8. Case Status: This button appears after the Registrar logs into the system. He selects this button to see the status of the cases (Pending/Closed/Due) by entering their CIN.

  9. Create New Account: After the Registrar logs into the system, he can create

a new account for judges or lawyers by selecting this button. On selecting this button, the Registrar has to choose whether he wants to create a new judge account or a new lawyer account.

10. Delete Account: After the Registrar logs into the system, he can delete an existing account of a judge or a lawyer by selecting this button. On selecting this button, the Registrar has to choose whether he wants to delete a judge account or a lawyer account.

11. Log-Out: This button appears once the Registrar logs into the system. On selecting this button, the Registrar logs out of the system and the home page of the software is displayed

- **Judge**

1. Judges Log-In: This button is placed on the home page of the software. The Judge logs into the system by entering his/her user name and password. If the judge enters the wrong username or password, an error message will pop up describing the error. Also, if his/her account does not exists, then an error message pops up regarding the same.

2. Resolved Cases: This button appears after the judge logs into the system. He/She selects this button to see the details of the resolved cases by entering their CIN.

3. Log-Out: This button appears once the judge logs into the system. On selecting this button, the judge logs out of the system and the home page of the software is displayed.

- **Lawyer**

1. Lawyers Log-In: This button is placed on the home page of the software. The Lawyer logs into the system by entering his/her user name and password. If the lawyer enters the wrong username or password, an error message will pop up describing the error. Also, if his/her account does not exists, then an error message pops up regarding the same.

2. Resolved Cases: This button appears after the judge logs into the system. He/She selects this button to see the details of the resolved cases by entering their CIN.

3. Pay Charges: After the lawyer logs into the system, he/she can pay for the charges by selecting this button. After this, he/she will be redirected to the Billing System where he/she can pay for the dues.

4. Log-Out: This button appears once the lawyer logs into the system. On selecting this button, the lawyer logs out of the system and the home page of the software is displayed.

3.2 Software Interfaces

- The Judiciary Information System connects to the database through sqlalchemy in Python. It opens the file which is required to perform a certain function.
- A firewall will be used with the server to prevent unauthorized access to the system. A JWT authentication is a feasible way to go about it.

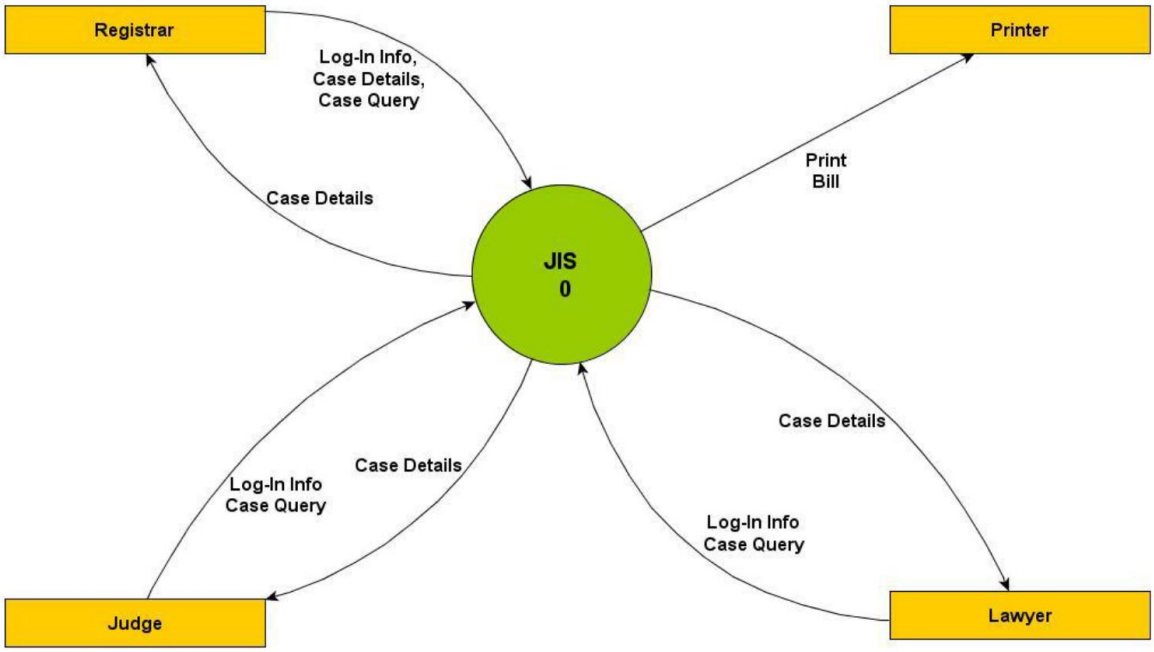
3.3 Hardware Interfaces

The user should have a device (Desktop/Laptop/Mobile) which is connected over the internet to use the software.

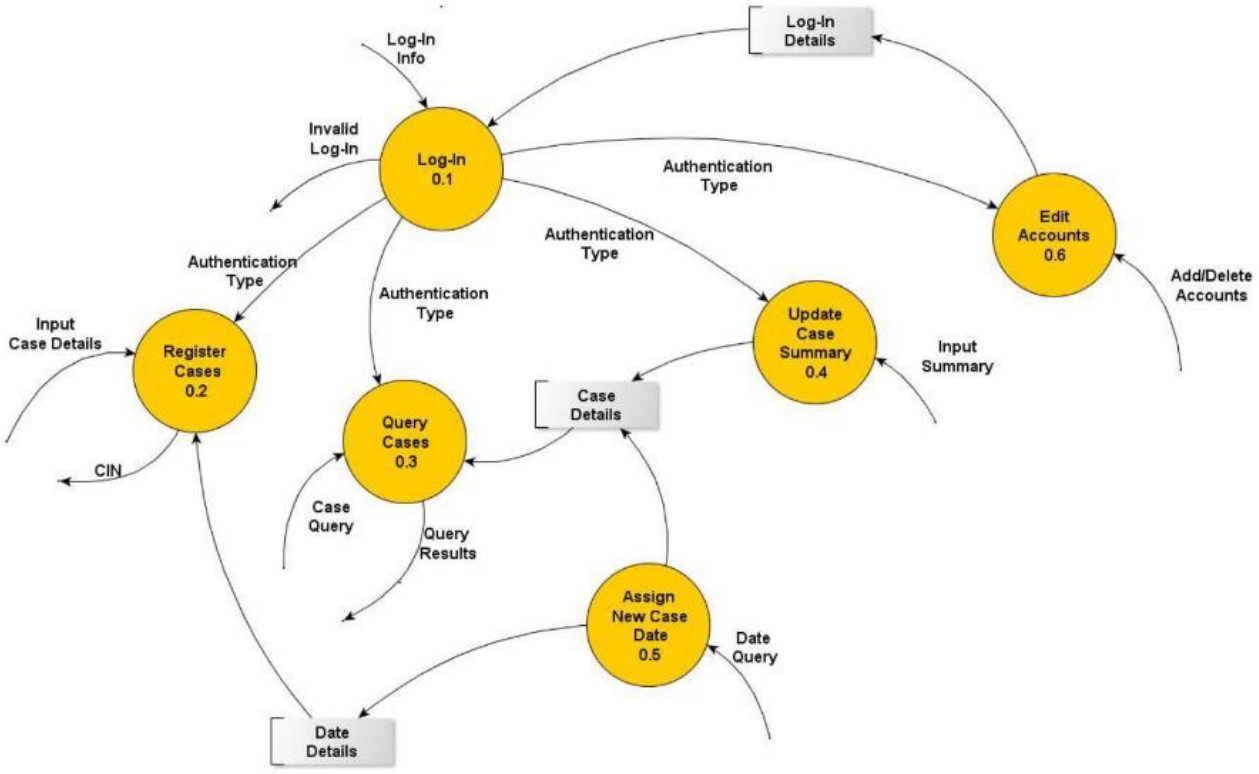
4. System Features

4.1 Dataflow Diagrams:

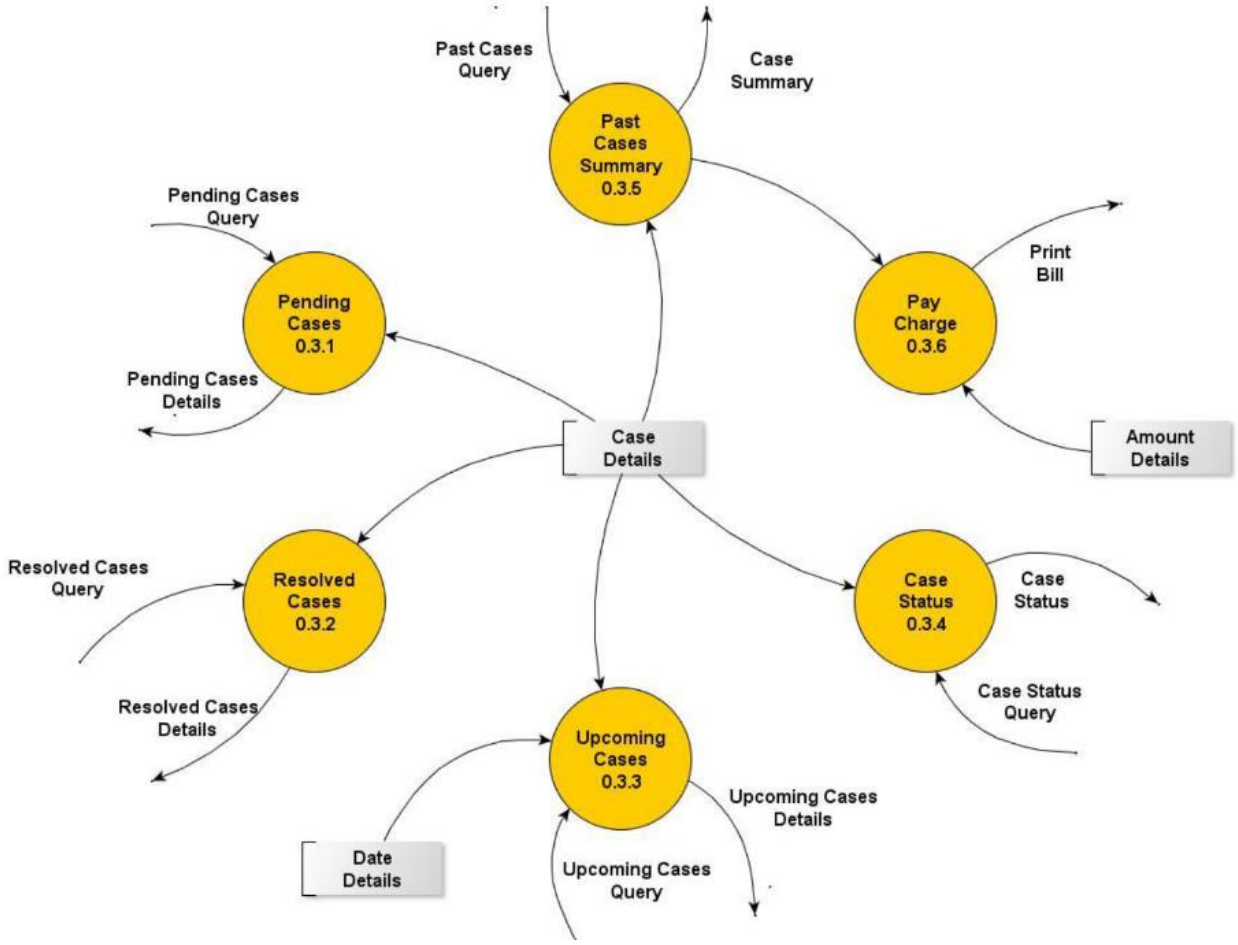
4.1.1 Level 0 DFD (Context Diagram):



4.1.2 Level 1 DFD:



4.1.3 Level 2 DFD:

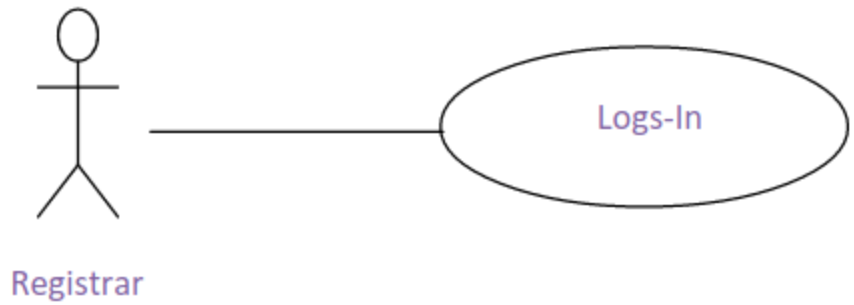


4.2 Functional Requirements

This section outlines the use cases for each of the active readers separately. The registrar is the main actor in this system.

4.2.1 Use Case 1: Registrar Logs-In the Software

Diagram:



Brief Description:

The Registrar logs in the system and inputs the details of the case.

Input: The Registrar logs into the system by selecting the Registrar Log-In option. The defendant's name, defendant's address, crime type, date of crime, place of crime, name of arresting officer and the date of arrest for each case are entered by selecting the Input Case Details option.

Processing: The system opens the file which stores the log-in details of the users and matches it against the input.

Output: The computer automatically generates a unique case identification number (CIN) for each case.

4.2.2 Use Case 2: Date of Hearing

Diagram:

Brief Description:

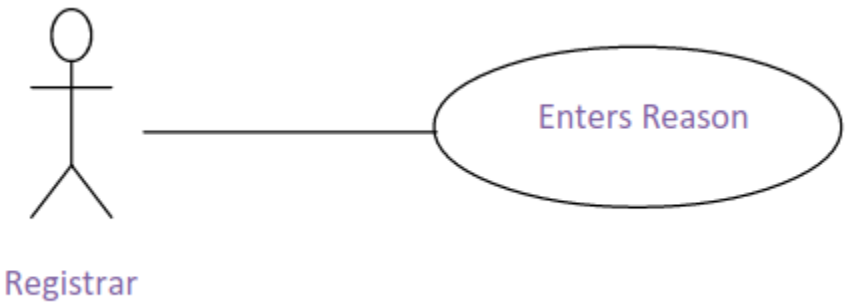
After the unique CIN is generated, the Registrar assigns a date of hearing for the case.
Input: The Registrar selects the Display Dates option.

Processing: The system opens the file which stores the dates and checks if they are occupied or not and prints the non-occupied dates.

Output: The computer displays the vacant slots on any working day during which the case can be scheduled.

4.2.3 Use Case 3: Reason of Adjournment

Diagram:



Brief Description:

Reason of adjournment is entered if any case is adjourned.

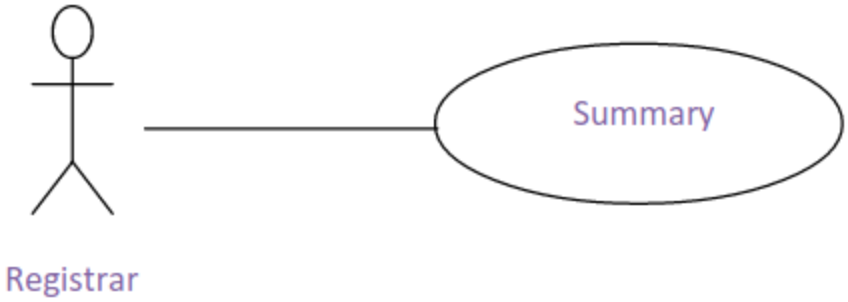
Input: The Registrar enters the reason due to which the case was adjourned by selecting Enter Summary option and selects the Display Dates option.

Processing: The system opens the file which stores the case details and the Registrar writes the reason into that file and closes it.

Output: A new hearing date is assigned for that case.

4.2.4. Use Case 4: Summary of Court Proceedings

Diagram:



Brief Description :

If hearing of a case takes place, the summary of the court proceedings are entered, the judgement is recorded and the case is closed but the details of the case are maintained for future reference.

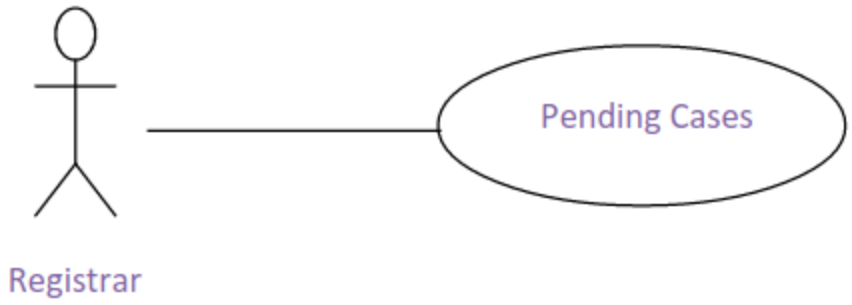
Input: The Registrar enters the summary of the case by selecting Enter Summary option and selects the Display Dates option for new hearing date.

Processing: The system opens the file which stores the case details and the Registrar writes the summary into that file and closes it.

Output: A new hearing date is assigned for the case.

4.2.5 Use Case 5: Currently Pending Court Cases

Diagram:



Brief Description:

This function gives the details of the currently pending cases when queried by the Registrar.

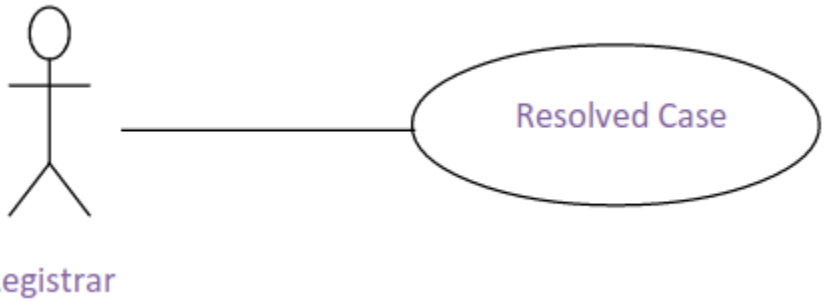
Input: The Registrar queries about the pending cases by selecting the Pending Cases option.

Processing: The system opens the file which stores the pending cases details and the Registrar reads from that file and closes it.

Output: The computer prints out the pending cases sorted by their CIN. For each pending case, the following data are listed: the date in which the case started, the defendant's name, address, crime details, the lawyer's name, the public prosecutor's name and the attending judge's name.

4.2.6 Use Case 6: Resolved Cases

Diagram:



Brief Description:

This function displays the details of the resolved cases over any given period.

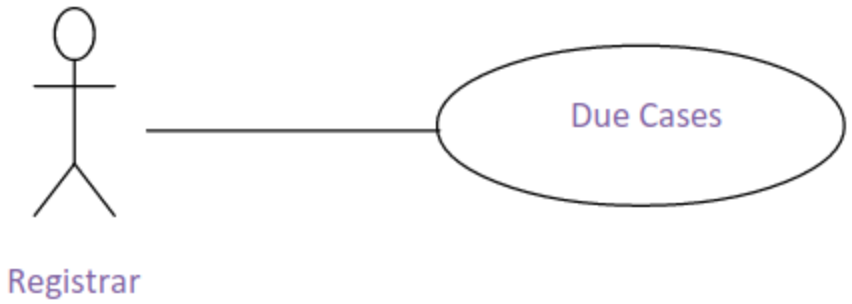
Input: The Registrar queries about the resolved cases by selecting the Resolved Cases option.

Processing: The system opens the file which stores the resolved cases details and the Registrar reads from that file and closes it.

Output: The computer chronologically lists the starting date of the case, the CIN, the date on which the judgement was delivered, the name of the attending judge and the judgement summary.

4.2.7 Use Case 7: Cases on a particular date

Diagram:



Brief Description:

This function lists the cases due on a particular date.

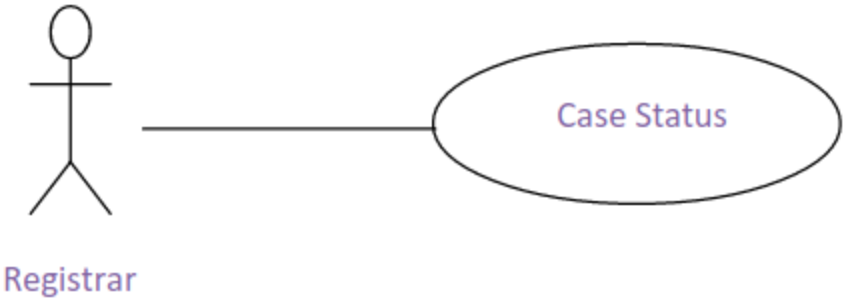
Input: The Registrar selects the Due Cases option and enters the date of hearing.

Processing: The system opens the file which stores the due cases details and the Registrar reads from that file and closes it.

Output: All the cases that are scheduled on that day are listed in the form of their CIN.

4.2.8 Use Case 8: Case Status

Diagram**:**



Brief Description:

This function displays the status (Pending/Closed/Due) of any particular case queried by the Registrar.

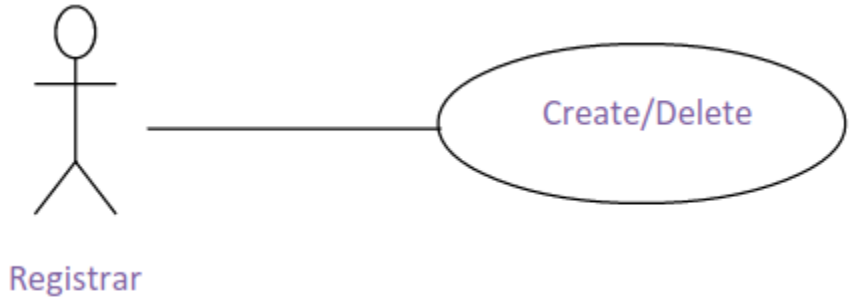
Input: The Registrar selects the Case Status option and enters the CIN of the case he is interested in.

Processing: The system opens the file which stores the cases details and the Registrar reads the summary from that file and closes it.

Output: The computer displays the status of the particular case.

4.2.9 Use Case 9: Create/ Delete Accounts

Diagram:



Description:
This function allows the Registrar to create or delete judges/lawyers accounts.

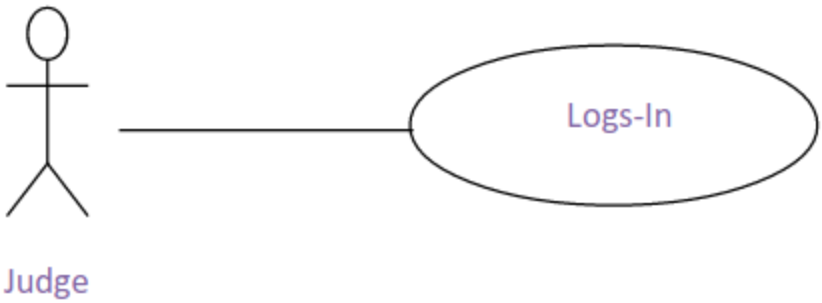
Input: The Registrar creates accounts by selecting the Create New Account option and entering the name of the judge/lawyer. He deletes an account by selecting the Delete Account option and entering the name of the judge/lawyer.

Processing: The system opens the file which stores the log-in details of the users and creates/deletes the corresponding user's details.

Output: A username and password is created for every account created and deleted for every account deleted.

4.2.10 Use Case 10: Judges Login

Diagram:



Brief Description:

This function allows the judges to log into the JIS and browse through the previous case history to get guidance on their decisions.

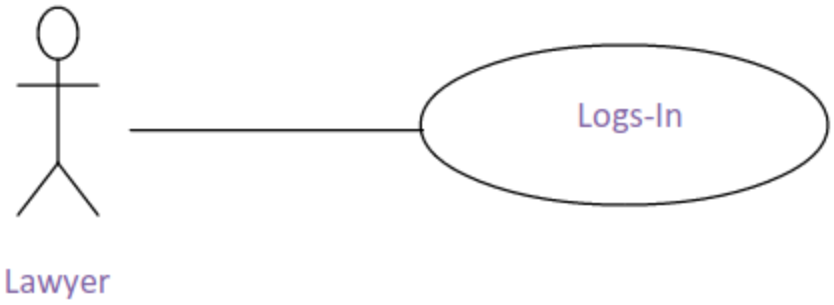
Input: The judges log into the system by selection the Judges Log-In option and can select the previous cases by selecting the Resolved Cases option and entering key words like their CIN.

Processing: The system opens the file which stores the log-in details of the users and matches it against the input.

Output: The case details of the particular case are displayed.

4.2.11 Use Case 11: Lawyers Login

Diagram:



Brief Description:

This function allows the lawyers to log into the JIS and browse through the previous case history to get guidance on similar cases.

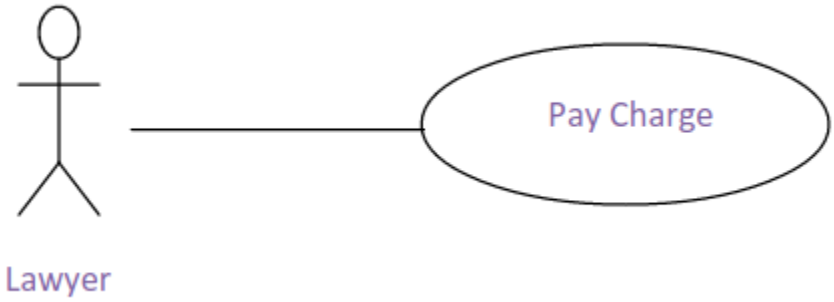
Input: The lawyers log into the system by selection the Lawyers Log-In option and can select the previous cases by selecting Resolved Cases option and entering key words like their CIN.

Processing: The system opens the file which stores the log-in details of the users and matches it against the input.

Output: The case details of the particular case are displayed. Also, the number of previous cases views for each lawyer is displayed.

4.2.12 Use Case 12: Pay Charge

Diagram:



Brief Description:

This function allows the lawyers to clear their dues for viewing previous court cases.

Input: The lawyers can pay for their charges by logging into JIS and selecting Pay Charges.

Processing: The system opens the file which stores the amount details of the lawyers and resets the amount to NIL of the corresponding lawyer.

Output: This connects the JIS to the Billing System which generates the printed bill and resets the charges to NIL for the lawyer.

5. Other Nonfunctional Requirements

5.1 Performance Requirements

- This system should be fast enough to update and fetch the case information.
- System should be able to control and manage all this and users didn't feel lagging in system.
- There would be some cases where system will face errors, errors can occur be at client-side or server side or on both sides. So, system should able to detect problems and inform user about the same.

5.2 Safety Requirements

- Application should use the database carefully so there is no data loss, or it doesn't store erroneous data.
- The user details should be verify by the system, so that database have valid information that which stock purchased by whom.

5.3 Security Requirements

- Connection between user and servers should be Encrypted (HTTPS/TLS).
- One customer should have access to only his/her details.

5.4 Software Quality Attributes

- Solving data redundancy by making our database 3.5 Normalized.
- System should follow ACID properties of Transaction.

5.5 Business Rules

- This software would be Open-Source Software and open to use under fair purpose.