

Stages of software development

1-Planning:

The first stage of software development, and in that stage, I evaluated the project and chose which development method will I follow while creating this application. I decided to follow the Agile method as the overall timeframe of the project was not long while at the same time there is only one developer working on this project.

After choosing the methodology, I made a rough time plan for the rest of the stages as follows:

- **Define Requirements: 2 hours**
- **Design and prototyping: 4 hours**
- **Development: 3 days**
- **Testing: 3 hours**
- **Deployment and submission: 2 hours**

2-Define Requirements:

The following requirements have been collected to decide what the application needs to do:

- A member of the staff should be able to enter a ticket
- The ticket should have the staff member name, ID, email, description of the problem, response, and a number.
- The helpdesk could access the helpdesk command and be able to resolve the ticket, view ticket, and reopen a ticket.
- A member of the staff can change his/her password by entering "Password change" in the description of the ticket.
- When a new ticket has been added the ticket status should increase by one
- When the description of the ticket is "password change" the new password should be the first 2 numbers of the student ID and first 3 letters of his/her name.
- The ticket with "Password change" in the description should be set to closed automatically.
- The user of the application could end the application when needed.

3-Design and Prototyping:

Python3 will be used as the programming language for this application, and vs code will be used as the main IDE while using Python3. A total of 4 classes will be added to the application:

1. Main: the main class of the application that will contain the main method which connects the whole application together and shows the menu.
2. Ticket: the ticket class contains all the required attributes of the ticket.
3. PasswordGenerator: this class will contain all the methods that will be needed to be used to generate a new password for the user.
4. TicketStats: this class will contain the method that will return the statistics of the tickets created.

4-Software Development:

The code of the application have been added to the folder. Below are some screenshots of the output of the application.

Main menu of the application

```
The Best tickting System created by Laila :)

* To add a ticket press: "T".
* To access the helpdesk press: "H".
* To close the program press: "C".

-----

Enter your value: █
```

Adding a ticket

```
Enter your value: T
Are you a staff member (Y/N): Y
Please enter your name: Laila
Please enter your Staff ID: 1234
Please enter your email: Laila@gmail.com
Please enter description of the problem: screen problem
Ticket Added
```

Helpdesk menu

```
* To add a ticket press: "T".
* To access the helpdesk press: "H".
* To close the program press: "C".
```

```
Enter your value: h
```

```
-----Helpdesk Dashboard-----
```

```
Tickets Created: 1
```

```
Tickets Open: 1
```

```
Tickets Closed: 0
```

```
To Display tickets press: "D".
```

```
To resolve a ticket press "S".
```

```
To reopen a ticket press "R".
```

```
To go back to main menu press: "B".
```

```
Enter your value: █
```

Displaying tickets added

```
To Display tickets press: "D".
To resolve a ticket press "S".
To reopen a ticket press "R".
To go back to main menu press: "B".
```

Enter your value: d

-----PRINTING TICKETS-----

```
Ticket number: 2001
Ticket Creator: Laila
Staff ID: 1234
Email: Laila@gmail.com
Description: screen problem
Response: Not Yet Provided
Ticket status: Open
```

```
-----
Tickets Created: 1
Tickets Open: 1
Tickets Closed: 0
-----
```

```
To Display tickets press: "D".
To resolve a ticket press "S".
To reopen a ticket press "R".
To go back to main menu press: "B".
```

Enter your value:

Resolving a ticket

```
To Display tickets press: "D".
To resolve a ticket press "S".
To reopen a ticket press "R".
To go back to main menu press: "B".

Enter your value: s
Enter the number of ticket you want to resolve: 2001
Please enter your response: Screen has been fixed

TICKET CLOSED

Tickets Created: 1
Tickets Open: 0
Tickets Closed: 1
-----

To Display tickets press: "D".
To resolve a ticket press "S".
To reopen a ticket press "R".
To go back to main menu press: "B".

Enter your value: d

-----PRINTING TICKETS-----

Ticket number: 2001
Ticket Creator: Laila
Staff ID: 1234
Email: Laila@gmail.com
Description: screen problem
Response: Screen has been fixed
Ticket status: Closed

-----
```

Reopening a ticket

```
To Display tickets press: "D".
To resolve a ticket press "S".
To reopen a ticket press "R".
To go back to main menu press: "B".

Enter your value: r
Enter the number of ticket you want to resopen: 2001

TICKET REOPENED

Tickets Created: 1
Tickets Open: 1
Tickets Closed: 0
```

Password change 1

```
* To add a ticket press: "T".
* To access the helpdesk press: "H".
* To close the program press: "C".

-----

Enter your value: t
Are you a staff member (Y/N): y
Please enter your name: john
Please enter your Staff ID: 5678
Please enter your email: john@gmail.com
Please enter description of the problem: password change
Ticket Added
```

Password change 2

-----PRINTING TICKETS-----

Ticket number: 2001
Ticket Creator: Laila
Staff ID: 1234
Email: Laila@gmail.com
Description: screen problem
Response: Screen has been fixed
Ticket status: Reopened

Ticket number: 2002
Ticket Creator: john
Staff ID: 5678
Email: john@gmail.com
Description: password change
Response: New password generated: 56joh
Ticket status: Closed

Closing the application

- * To add a ticket press: "T".
- * To access the helpdesk press: "H".
- * To close the program press: "C".

Enter your value: c
Thank you for using my amazing application :)

5-Testing:

Testing is considered very important and it needs to be done in conjugation with the development, because if it is only done after the development of the whole application has been made, a lot of errors could arise and it will take a long time to solve the problems. I regularly tested the application by working on the development stage by stage and printing the data directly to the console so that I can see that the application is working as expected. I have also tried all the commands to make sure that nothing is not working the way it should.

6-Deployment and submission:

To run Python scripts with the python command, one need to open a command-line (terminal or CMD) and type in the word python, or python3 if they have both versions, followed by the path to the script named main.py