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Maximizing Efficiency and Customer Satisfaction with Modern Helpdesk Ticketing System

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Abstract: ***HelpDesk Ticketing system (HDTS) is an electronic support ticket management system for creating, managing, updating & viewing of tickets logged in to the web portal of ticketing system. Incidents in organizations & institution are difficult to track & unmanageable to work upon when used traditional method. This HelpDesk Ticketing System will track all the tickets logged into the ticketing system while providing users an efficient & simple way to raise the tickets. Also, it becomes easier for engineer to solve the issues incoming in an organization or institution. This tool becomes a centralized way of communication for any incidents. When the user raises the ticket for the incident, is then forwarded to the IT HelpDesk followed by the IT Manager & IT Engineer.***

Keywords: helpdesk, support ticket, management, ticket, incident, centralized.

I. INTRODUCTION

In the new age of Information & related technology, problems might arrive at any point of time which is unpredictable. Problems or challenges whether technical or non – technical needs to be solved for even the minute queries. In a company or an organization, handling those incidents becomes a key factor in managing all the problems, requires a good management. HelpDesk Ticketing system can be used in the organization or any institution which lets users to raise the tickets for the issue arriving while providing an option to write brief description on the same. Ticket management system is a corporate & enterprise grade problem tracking system for the organizations & institutions where the issues can be tracked logged in to the portal of ticketing system.

Each ticket in the ticketing system is assigned a unique number which can be easily identified by users, IT manger & IT engineer. With the HelpDesk Ticketing System, it becomes as easy as submitting a web form. With the help of ticketing system, the productivity in the organization will scale up. It runs on the popular & widely used database known as SQLite.

It is a software bundle package where the user raises the ticket & gets assigned to the respective agents without the need to follow traditional methods. This powerful helpdesk Ticketing system platform will help to centralize all the conversations between the users & the clients. Productivity in an organization can be easily increased by automating the things. Without having no contacts, the users can still easily raise tickets while getting solutions for the same.

HelpDesk Ticketing System can be ready to use as soon as the organization creates account for the user on the web portal. The user is notified with the help of e-mail as soon as the user raises the ticket for the issue with the unique number assigned & generated automatically by the HelpDesk Ticketing System. This ticketing system is best suitable for internal purposes with the organization having many employees. This can be implemented on any web environment with the advantage of custom support URL for a website & can be configured with e-mail address which matches with the organization's website address. This prevents unauthorized access to the user without having permissions to enter. This lets organizations run the ticketing system in an secured manner without hesitation to use.

Ticketing system saves a lot of time & effort put to solve the issue in the organization thereby reducing the cost. In this way, ticketing system plays a very vital & crucial role in any of the organization while lowering the gaps faced to solve any issue.

II. TECHNOLOGY REQUIREMENTS

1) Any web browser supporting HTML 5 with all the required features of HTML & CSS.
2) Web server to access the files of the web application.
3) An organizations domain where by entering the URL, should be redirected to the HelpDesk Ticketing System.
4) Full & complete access to send mail with enabled settings of IMAP or POP3 mail.
5) Organizations personal email ID to sign up & login to the ticketing system.
6) Python supported web environment with supported access to SQLite database.

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III. INSIDE HELPDESK TICKETING SYSTEM

Table 1. System of HelpDesk Support System:

Main Dashboard	The main dashboard consists of web page of Helpdesk Ticketing System where users can click on the options of creating a new support ticket & view/edit the existing submitted tickets. Also, the user can navigate to the login page by simply clicking on login button.
Login Page	The page gives the option to enter email ID & password to get access to the helpdesk support system. There are three aspects to the logging to the helpdesk ticketing system. It is divided as User, IT Manager, & IT engineer. All has their individual login credentials with respect to logging into the ticketing system.
Admin dashboard	The admin can view all the tickets raised by the user, on the behalf of the user & can escalate ticket to the to the suitable engineer. Admin can see the number of tickets with all the detailed information.
IT Manager dashboard	IT Manager is basically here to solve the issues incorporating in an organization which are assigned to the engineer. IT manager can manage the number of tickets assigned. Engineer can update the status as open, working, closed, hold, resolve, etc.
User Dashboard	After logging to the ticketing system, the user can raise tickets by providing all the valid information & can view the status of the ticket with the time ticket created & closed by giving solution to it.

IV. WORKING OF THE TICKETING SYSTEM

1) Creating A Ticket

The user or client can easily create a ticket by logging into the ticketing system. User needs to fill all the required details on the form of web portal. The request is then carried out by simply clicking on 'Submit' button from where the ticket details is stored in the database.

As soon as the ticket is raised, the system will automatically assign a number which also gives a confirmation via e-mail for ticket the ticket raised.

2) Responding & Assigning an E-ticket: Admin

Administrators can view all the tickets raised to provide support & take necessary steps to give resolutions.

According to the type & nature of the query, the ticket is then assigned to the IT engineer by the Administrator with the given timeframe to solve the query.

3) Responding to an E-ticket: Engineer

As soon as the engineer is assigned an query, he/she is notified with the email with all the ticket details. The engineer then changes the status of the query as 'open' & starts working on the same.

The status may change accordingly such as open, closed, working, hold & resolved. With proper solution given to the ticket raise, the status change to 'closed' & informed to the admin to proceed further check whether the given solution is as expected or not.

4) Responding to an E-ticket: User

The user is then notified with email & also can check on the ticketing system as soon as the admin checks for the given resolution and marks the ticket as closed.

Then the user can login & check the detailed description of the solution given to the problem statement.

V. FEATURES

1) E-Mail

a) User receives the conformation mail when ticket raised.

b) IT Manager also receives the mail as soon as the ticket is raised by the user.

c) IT Engineer receives the mail as soon as the IT Manager assigns the ticket to the engineer.

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2) Time—tracker: Each ticket gets tracked by the HelpDesk Ticketing System when it is raised to the resolution of the ticket.
3) Ticketing system is divided into Admin, IT Engineer & User.
4) Whether the user is work is working remotely from anywhere around the world or from the office, whenever faced any issues or challenges the user or client can simply log in to the ticketing system & raise a ticket.
5) The ticketing system automatically assigns a unique number which can be easily identified by the admins & engineers.
6) The engineers & admins can easily browse the tickets by searching the unique assigned number to the ticket.
7) HelpDesk Ticketing System support end number of users followed by admins & engineers.
8) IT Engineers can view number of dynamic charts in different forms such as pie charts, bar chart, line chart, doughnut chart, area chart & scatter chart.
9) The confirmation email is sent to the users when the ticket is raised and same is followed for the IT engineer when the admin assigns the ticket to the particular engineer.
10) Time-tracker is assigned at each & every stage to track the number of time duration required from opening of ticket to giving resolution to the ticket.
11) Detailed ticket history can be viewed in the history option of the ticket.

These many features make the ticketing system work in an organized manner.
The use case diagram shows how the journey of the ticket goes through helpdesk ticketing system.

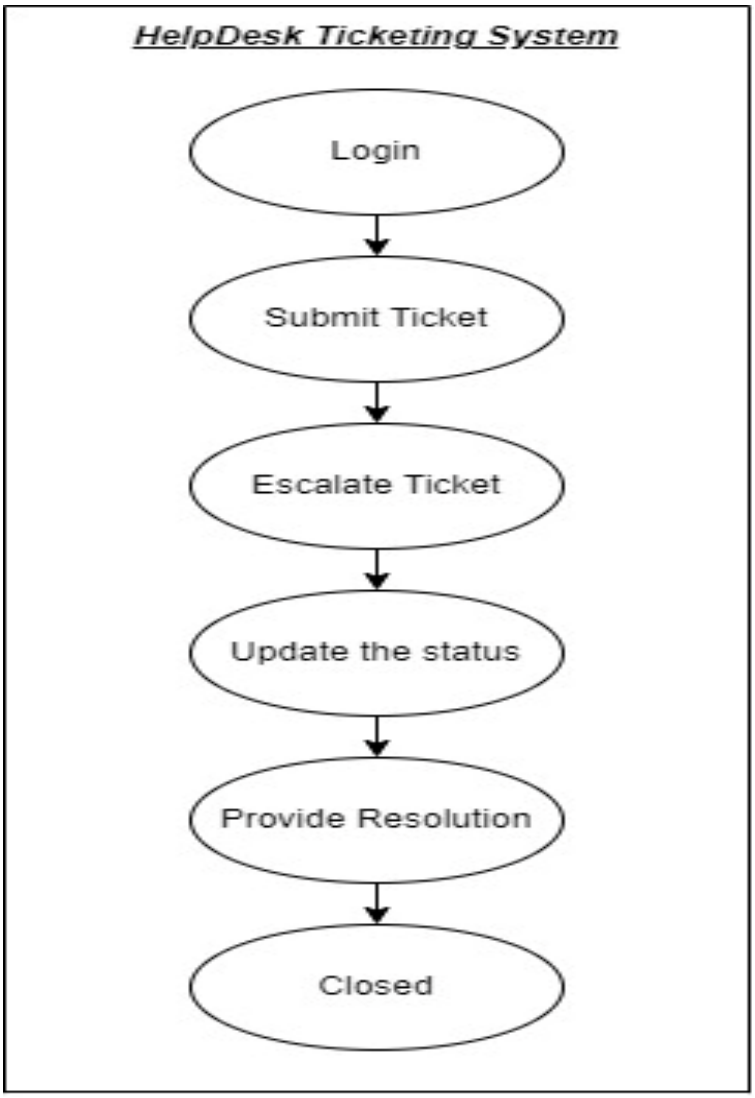


Figure 1: Class Diagram

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VI. CLASS DIAGRAM

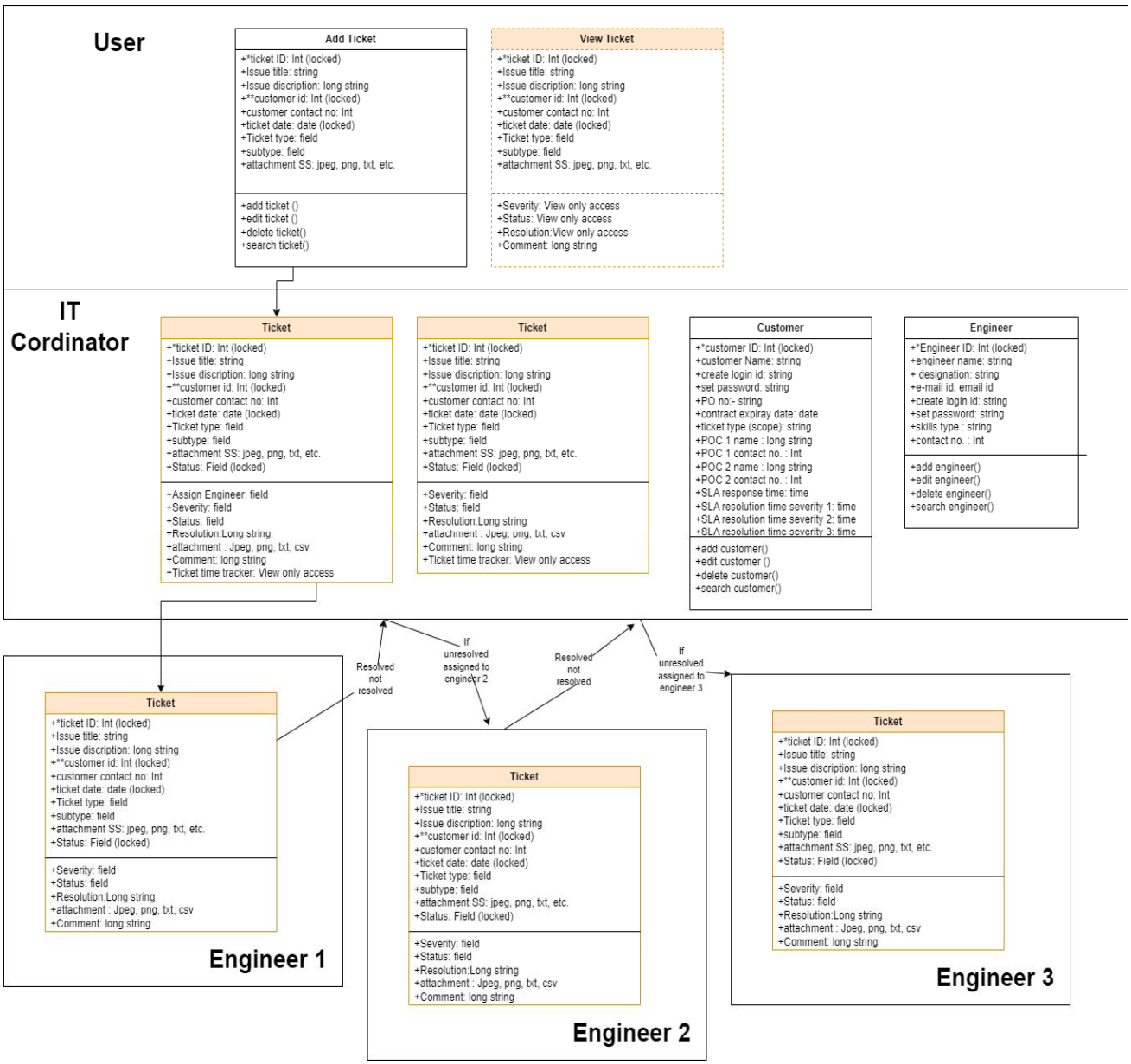


Figure 2: Class Diagram

Description of the Class Diagram:

The above diagram shows the class diagram of the HelpDesk Ticketing System. The class diagram is divided into three aspects can also be called as 3-tier architecture of the ticketing system.

Class diagram is divided into User, IT Coordinator and followed by the number of engineers. This type of architecture makes the use of ticketing system not only easier to use but also in an efficient manner.

The user raises the ticket for the incident/issues arriving. The ticket is then assigned to the IT Coordinator who checks the issue of the ticket & assigns only to the engineer who is specialized in solving the issue in that particular domain.

The engineer is then notified for the ticket assigned via e-mail. Engineer opens the ticket and the status changes to ‘open’, starts working on the assigned ticket.

After the resolution of the ticket, engineer changes the status of the ticket as closed & is notified to the IT Coordinator to check the given solution by the engineer. IT Coordinator checks for the given solution, if satisfied, then marks as closed completely & status of the ticket changes to ‘resolved’.

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VII. RESULTS

1) This ticketing system is useful in solving the user's complaints with the help of ticket.
2) It can also record the issues & problems systematically in the database, so no data is lost.
3) Ticketing system can be used for monitoring & handling problems.
4) HelpDesk Ticketing System is quite useful in solving day to day queries. Even the small & minute queries can be solved through this system

VIII. CONCLUSION

The HelpDesk Ticketing System is simple & powerful tool which takes a small place but has a very huge impact in any place. This ticketing system is written in python, Django & SQLite database.
This can be used anywhere such as organizations and institutions. It is user friendly application as well as for the coordinators & engineers.

IX. SYSTEM IMPLEMENTATION

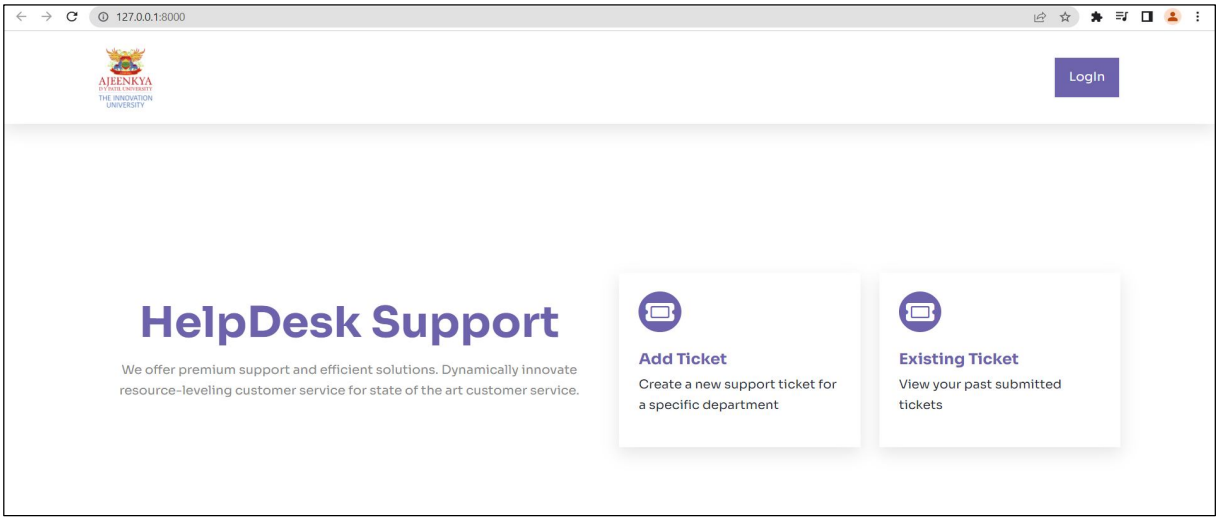


Figure 3: Homepage

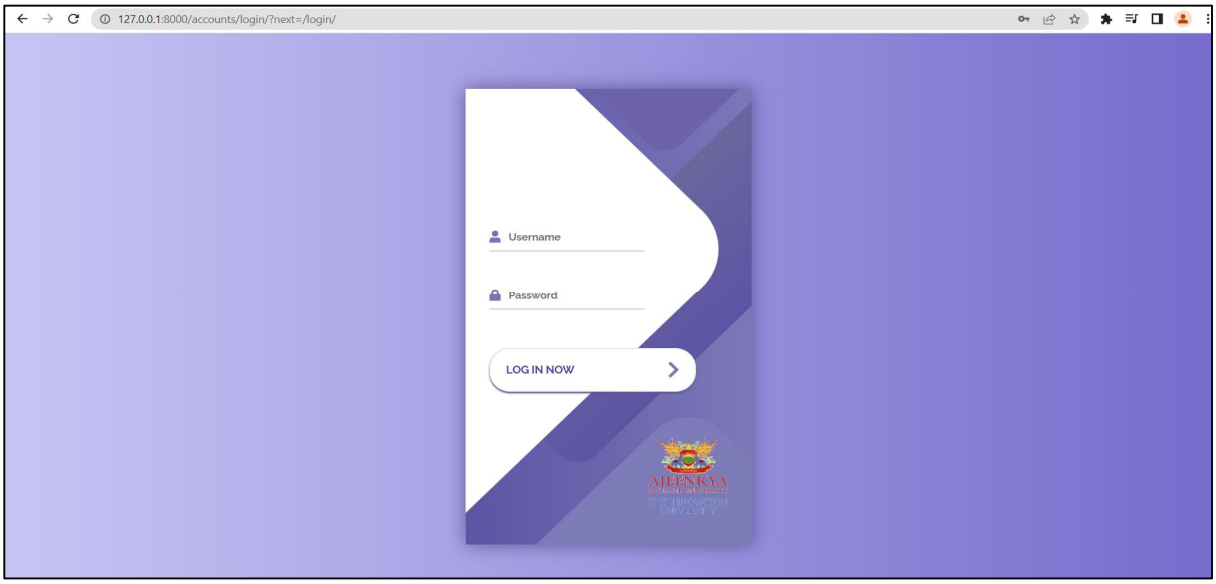


Figure 4: Login Page

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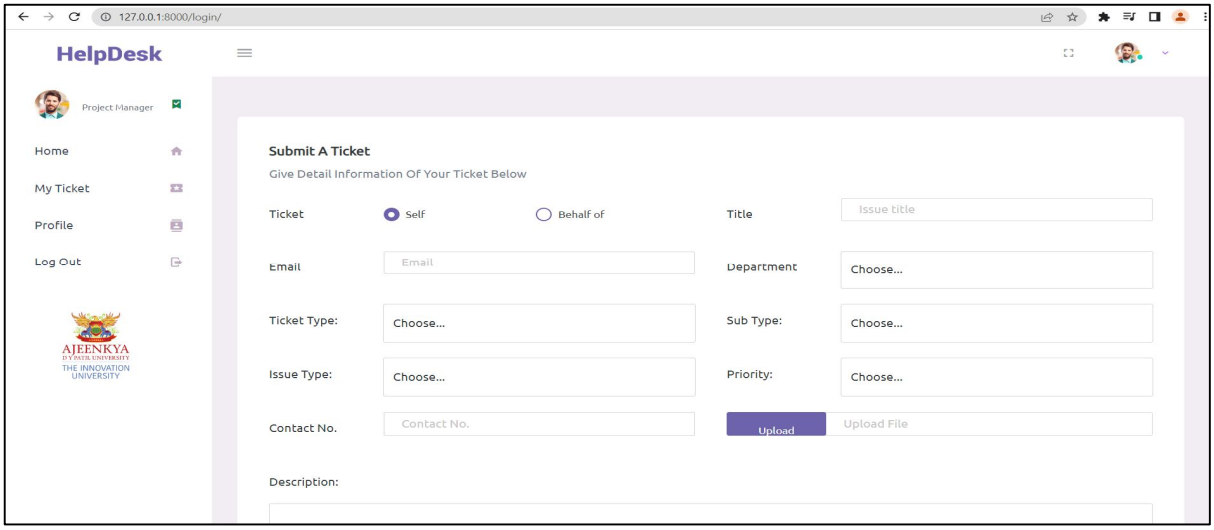


Figure 5: Ticket Creation

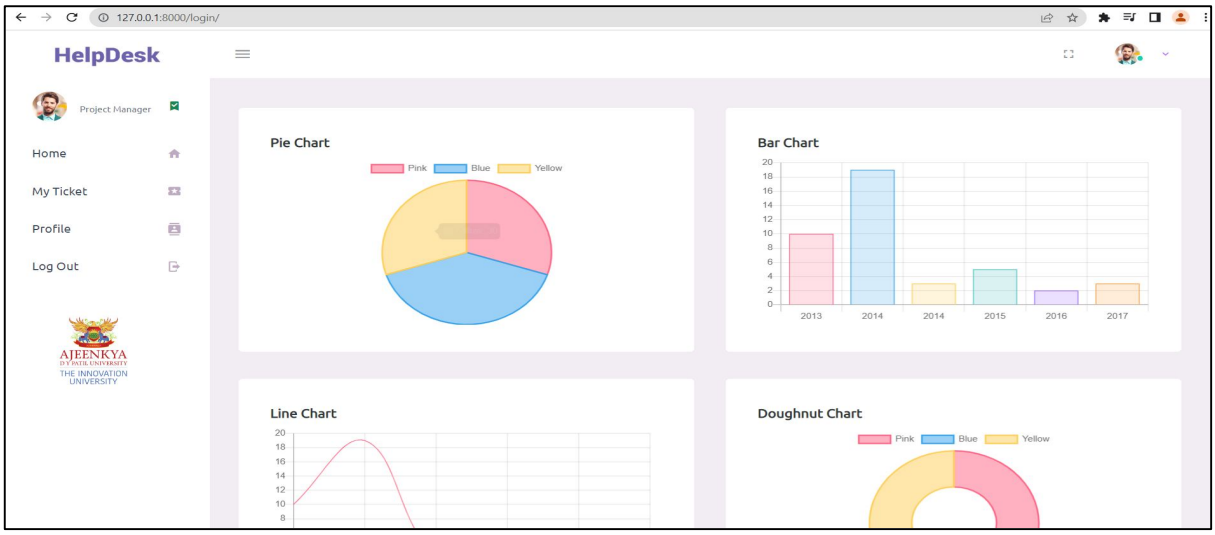


Figure 6: Graphical Illustration

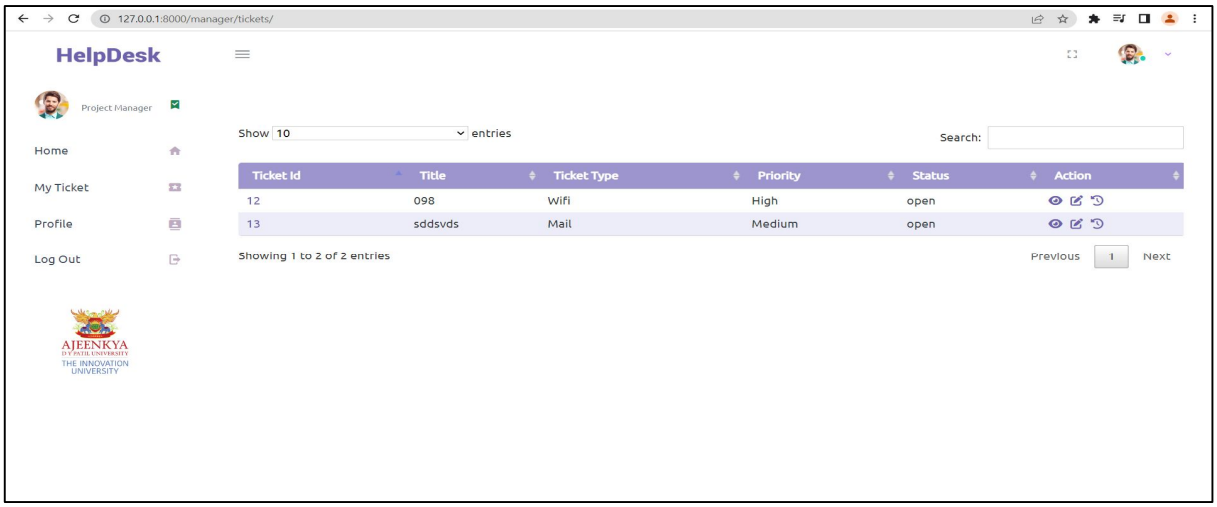


Figure 7: Tickets Section

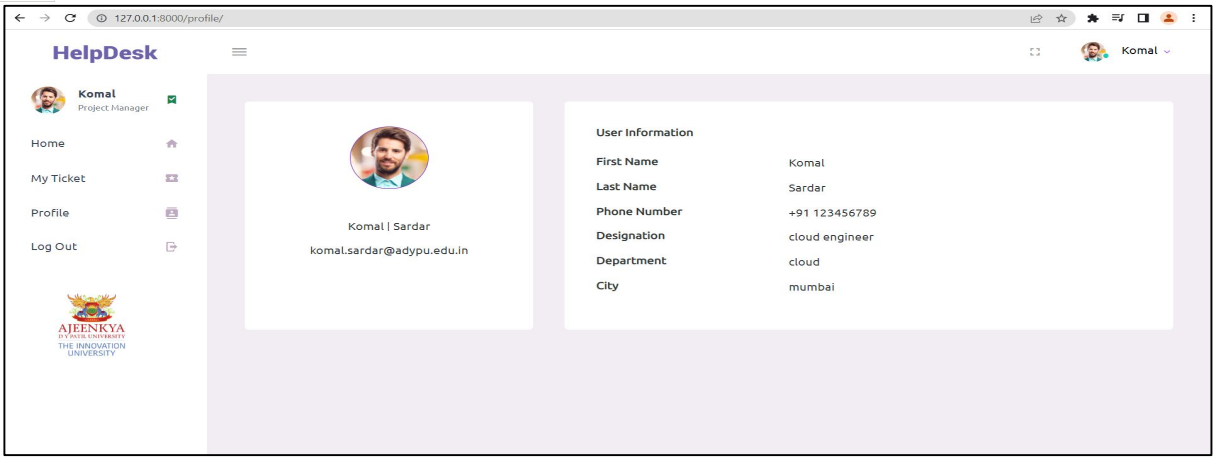


Figure 8: Profile Details

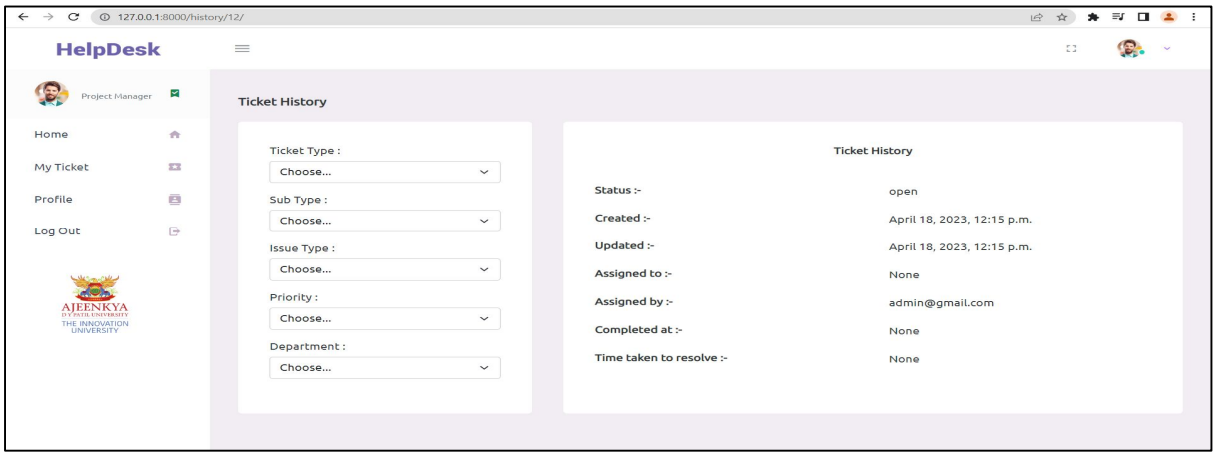


Figure 9: Ticket History / Status

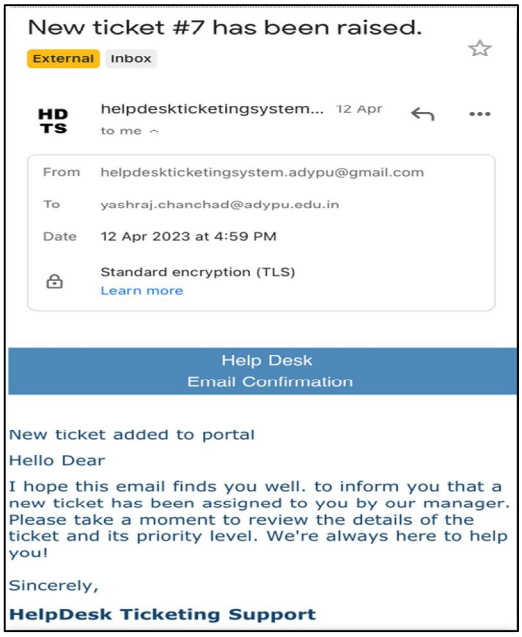
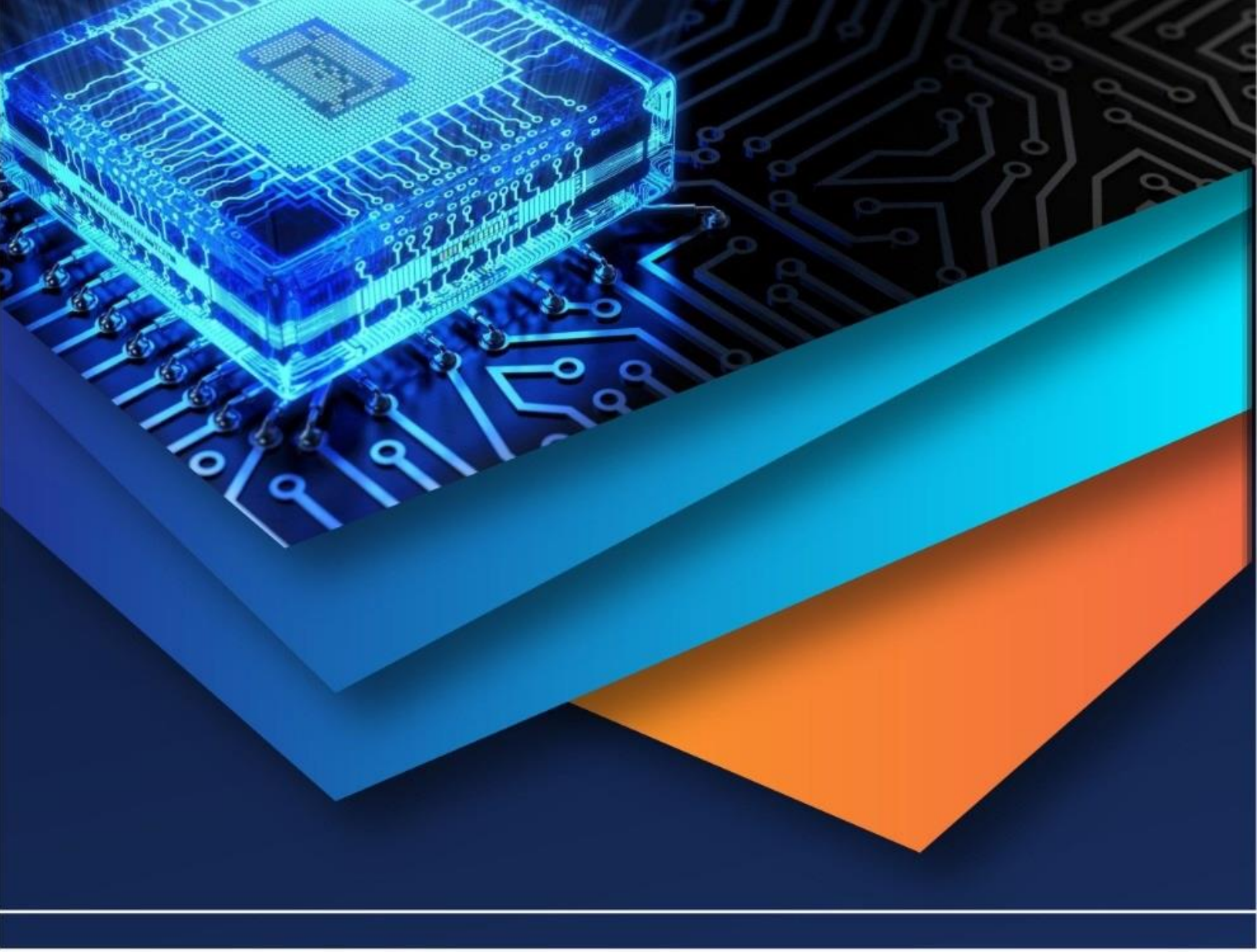


Figure 9: Email Confirmation

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