

HelpDesk360 – Smart Ticketing & Support System

**Institution / Organization
(IBM)**

**Mentor/Supervisor
(MR. Jaivik panchal)**

**Submission Date:
21/7/25**

CERTIFICATE

This is to certify that the project titled "HelpDesk360 – Smart Ticketing & Support System" is the original work carried out by [Krish Panchal] under the supervision of [Mr. Jaivik Panchal], submitted in partial fulfillment of [Full Stack Developer Program] at [IBM].

Acknowledgment

I would like to express my heartfelt gratitude to my mentor [MR. Jaivik panchal], faculty members, and peers for their constant support and encouragement. I also extend sincere thanks to the institution for providing the resources and guidance to successfully complete this project.

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Abstract

ResolveHub 360 is a full-stack web application designed to streamline IT and customer support processes. The system allows customers to raise tickets for various issues (technical, general, billing), while agents and admins manage these tickets efficiently.

Why it was developed:

To improve ticket handling, response time, and support team productivity by providing a unified platform.

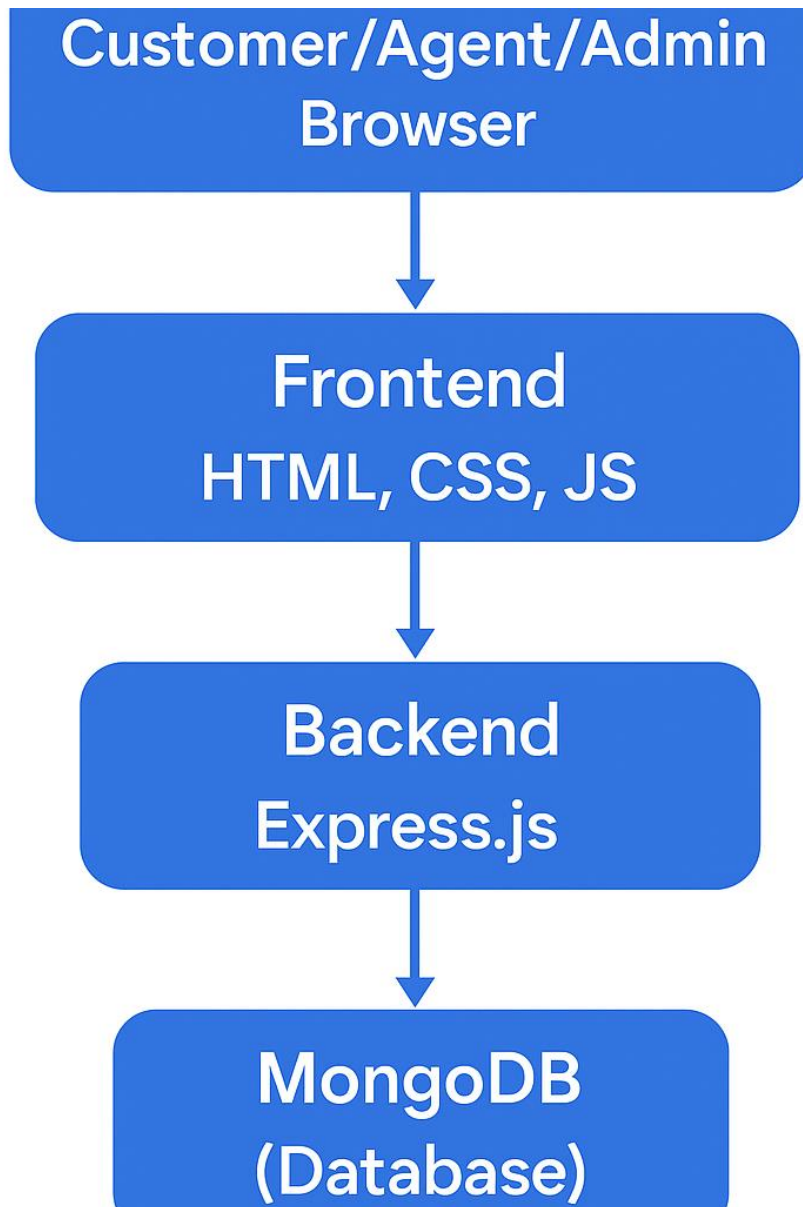
Key features:

- **Role-based access (Admin, Agent, Customer)**
- **Ticket creation, tracking, and resolution**
- **Agent assignment system**
- **Comment threads on tickets (by both agents and customers)**
- **Admin dashboard with stats and user management**

Objective

To build a web-based ticketing system for organizations to manage support requests effectively, enabling faster issue resolution and real-time communication among stakeholders.

System Architecture



Component Interaction:

- Client sends requests via Axios to backend API.
- Backend processes logic, interacts with MongoDB.
- Responses are returned and rendered in the frontend UI.

Technology Stack

- Frontend: HTML, CSS, JavaScript
- Backend: Node.js, Express.js
- Database: MongoDB (Mongoose)
- Authentication: JWT
- Tools: GitHub, Postman, VS Code

Modules/Features

- ☐ Authentication – Login/Register for Admins, Agents, Customers
- ☐ Ticketing System – Create/View/Update/Resolve tickets
- ☐ Agent Dashboard – Assigned tickets view, add comments
- ☐ Customer Dashboard – Raise tickets, view status, add comments
- ☐ Admin Dashboard – View all tickets, statistics, user management
- ☐ User Management – Block,unblock/Delete users
- ☐ Profile Section – View/Edit profile
- ☐ Live Ticket Stats – Display ticket counts (open, in-progress, resolved)

Frontend Development

- Technology: HTML, CSS, JavaScript
- Layout: Sidebar Navigation + Content Area
- UI/UX Strategy: Simple and intuitive, responsive layout
- Pages: Login, Register, Dashboards (Admin/Agent/Customer), Ticket View, Profile Page

Backend Development

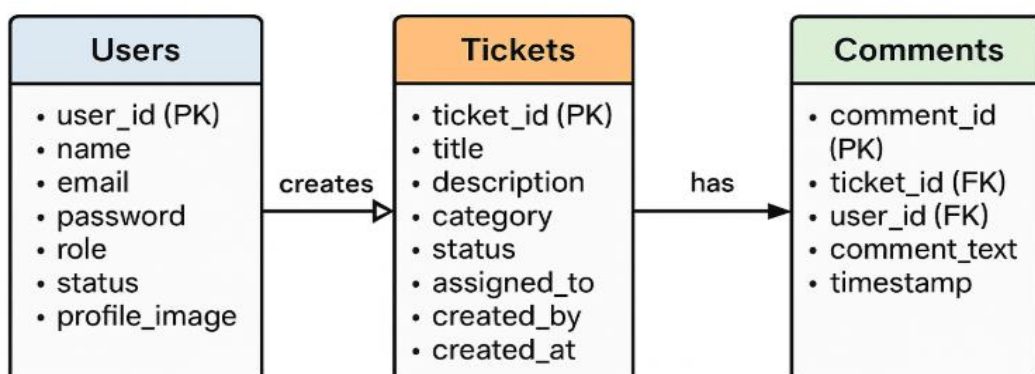
- Framework: Express.js
- API Structure: RESTful
- Routing: Separated into authRoutes, adminRoutes, agentRoutes, customerRoutes
- Controllers: Handle logic for tickets, users, comments
- Authentication: JSON Web Token (JWT), role-based access control

Database Design

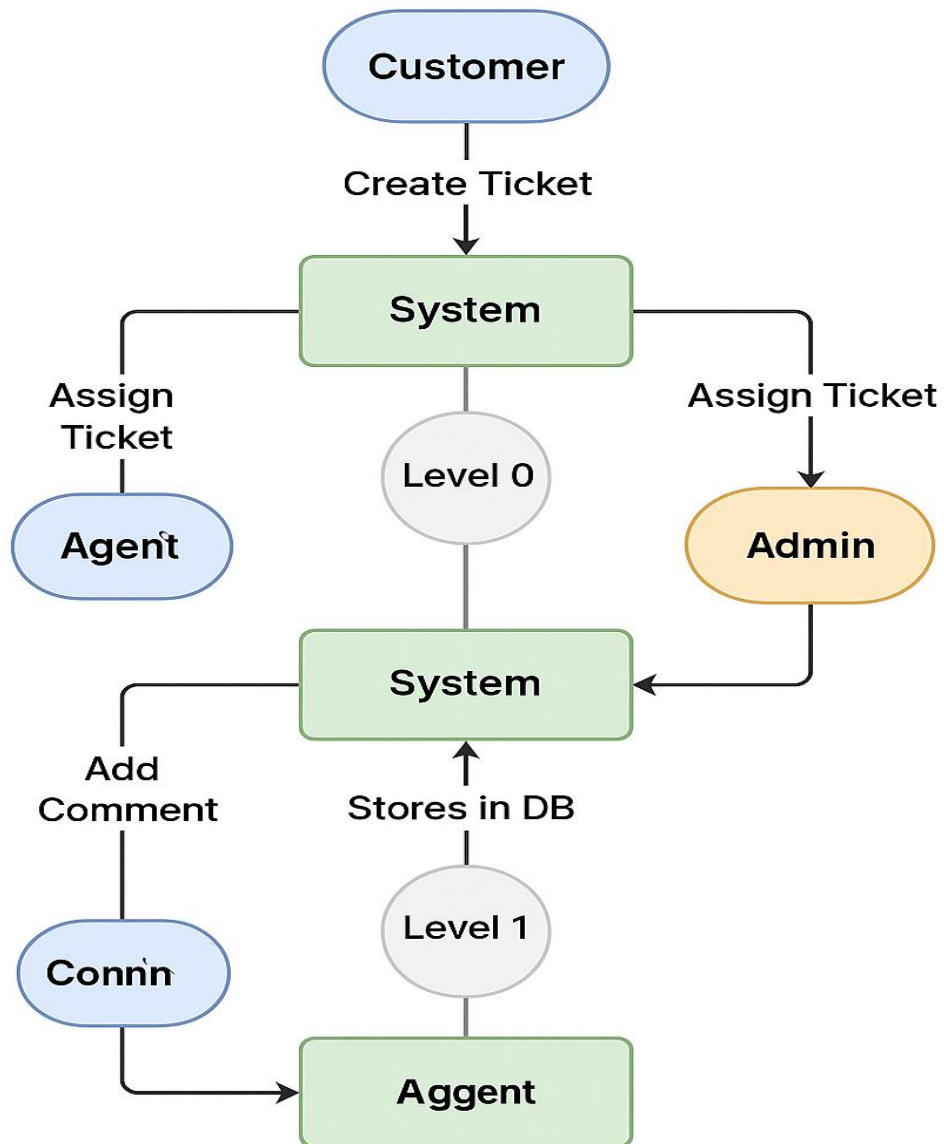
- DBMS: MongoDB
- Schema:
 - Users (role, name, email, password, status, image)
 - Tickets (title, description, category, status, createdBy)
 - Comments (ticketId, userId, comment, timestamp)

Relationships:

- One-to-Many: User → Tickets
- One-to-Many: Ticket → Comments



Data Flow Diagrams



Security Measures

- Passwords hashed using bcrypt
- JWT used for secure route protection
- Input validation on forms and APIs

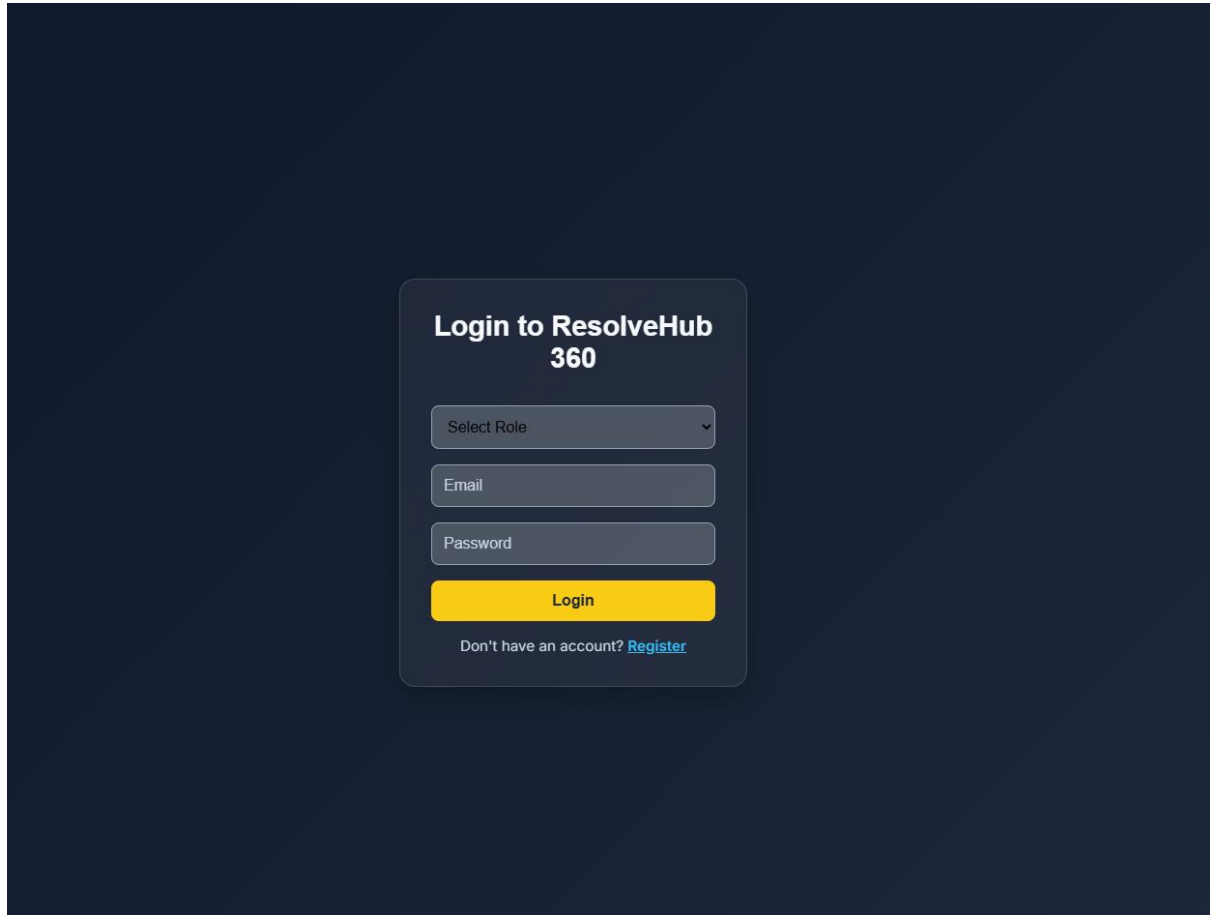
Limitations

- ☐ No email notifications on ticket updates
- ☐ Admin cannot create tickets (only view/manage)
- ☐ Basic styling (could be improved for corporate use)

Future Enhancements

- Rich-text editor for ticket description/comments
- Search and filter tickets by keyword/date
- Chat-like live support between agent and customer
- Add email/SMS notifications

Screenshots



ResolveHub 360

Dashboard

Profile

Logout

Welcome, rohit

Open2

In Progress2

Resolved4

Subject: Support Ticket

Customer: darshan (darshan7@gmail.com)

Status: in-progress

Category: technical

Description: i am facing serious technical issue with website

Comment: we are working on it your problem will be solve within 24 hours

Subject: Support Ticket

Customer: krish (krish1@gmail.com)

Status: open

Category: billing

Description: i do not receive correct bill

Comment: we will notify you about your problem in 7 working days

Subject: Support Ticket

Customer: krish (krish1@gmail.com)

Status: in-progress

Category: billing

Description: i am facing billing issues

Comment: we are working on it

Subject: Support Ticket

Customer: darshan (darshan7@gmail.com)

Status: open

Category: general

Description: i have general inquiry related website

Comment: we will notify you about your problem in 7 working days

Admin dashboard

User Management

Name	Email	Role	Status	Actions
krish	krish1@gmail.com	customer	Active	Block Delete
daksh	daksh1@gmail.com	agent	Active	Block Delete
darshan	darshan7@gmail.com	customer	Active	Block Delete
rohit	rohit45@gmail.com	admin	Active	—
roman	roman1@gmail.com	customer	Active	Block Delete

User management panel

ResolveHub 360

Dashboard

Submit Ticket

My Tickets

Profile

Logout

Submit a Support Ticket

Select Category

Describe your issue

Submit Ticket

Customer submitting ticket

ResolveHub 360

Dashboard

Submit Ticket

My Tickets

Profile

Logout

My Support Tickets

Support Ticket

Status: open

Category: billing

Description: i do not receive correct bill

Comment: we will notify you about your problem in 7 working days

Support Ticket

Status: in-progress

Category: billing

Description: i am facing billing issues

Comment: we are working on it

Support Ticket

Status: resolved

Category: technical

Description: i am facing some technical issues with website

Comment: your issue is solved

Support Ticket

Status: resolved

Category: billing

Description: billing issue

Comment: your issue is solved

Ticket submitted by customer

ResolveHub 360

Dashboard

Profile

Logout

Welcome, daksh!

Manage assigned support tickets and respond efficiently.

Support Ticket

From: darshan (darshan7@gmail.com)

Category: technical

Description: i am facing serious technical issue with website

Status:

In Progress

Comment:

we are working on it your problem will be solve within 24 hours

Update

Support Ticket

From: krish (krish1@gmail.com)

Category: billing

Description: i do not receive correct bill

Status:

Open

Comment:

we will notify you about your problem in 7 working days

Update

Support Ticket

From: krish (krish1@gmail.com)

Category: billing

Description: i am facing billing issues

Status:

In Progress

Comment:

we are working on it

Update

Agent dashboard

Annexures

Code Snippet:

```
// Example: JWT authentication middleware
function authMiddleware(req, res, next) {
  const token = req.headers.authorization?.split(" ")[1];
  if (!token) return res.status(401).send("Access
denied");
  try {
    const decoded = jwt.verify(token,
process.env.JWT_SECRET);
    req.user = decoded;
    next();
  } catch {
    res.status(400).send("Invalid token");
  }
}
```

GitHub Repository:

<https://github.com/krish007-git/My-Final-IBM-Project.git>

References

- ☐ [Mongoose Documentation](#)
- ☐ [Express.js Documentation](#)
- ☐ [JWT](#)
- ☐ [MDN Web Docs \(HTML/CSS/JS\)](#)