PROJECT REPORT

SUPPORT TICKET SYSTEM

Group 15 (21f1000205, 21f1003973, 21f1004451)

Contents: -

1. User Requirements
2. Storyboard
3. Wireframes
4. Design
5. APIs
6. Testing

User Requirements

Group-15 (21f1003973, 21f1004451, 21f1000205)

Users of the application

- Primary Users: Students, Support team
- Secondary Users: Admins
- Tertiary Users: Program coordinators, managers

User Stories

- **Students**

    1. **As a** student, **I want** to be able to log in to the application **so that** I can access the portal.
    2. **As a** student, **I want** to create, read, update, and delete my ticket **so that** I can solve my queries.
    3. **As a** student, **I want** to upvote a ticket **so that** I can support a ticket of my interest and make it get noticed.
    4. **As a** student, **I want** to get recommendations for similar tickets when I try to create new ones **so that** if I see a similar ticket already raised I can upvote.
    5. **As a** student, **I want** to get notified regarding updates on tickets that I created or upvoted **so that** I can get notified about the ticket's status and know when the ticket is resolved.
    6. **As a** student, **I want** to read FAQs **so that** i can quickly find information and answers to general questions
    7. **As a** student, **I want** separate tags for specific course-related doubts **so that** I can post my doubts in the specific course subjects
    8. **As a** student, **I want** a filter for the tickets **so that** I can view the queries based on recency and popularity
    9. **As a** student, **I want** a separate page to view all my tickets **so that** I find it easy to access all my tickets at once

10. **As a** student, **I want** to view recent/all tickets asked **so that** I can find recently added tickets.

11. **As a** student, **I want** to give feedback/mark as resolved to answer **so that** I can confirm that my query has been solved.

- **Support team**

    1. **As a** support staff, **I want** to be able to reply to queries **so that** queries can get resolved.

    2. **As a** support staff, **I want** an automated mail to be sent to students when a query is answered **so that** they get notified about the status of the query.

    3. **As a** support staff, **I want** to be able to view tickets that are related to my domain **so that** I can answer only particular queries.

    4. **As a** support staff, **I want** to be able to delete the query or flag the query **so that** the unnecessary queries should not be visible to students

    5. **As a** support staff, **I want** to be able to filter queries **so that** I can view and reply to queries on the basis of criteria.

    6. **As a** support staff, **I want** to be able to request the admin to approve queries for the FAQs section **so that** people can view the query in the FAQ.

    7. **As a** support staff, **I want** to be able to pin the query **so that** particular query should be the top

- **Admins**

    1. **As an** admin, **I want** to be able to add a member to the support staff team **so that** members can access the support staff functionality.

    2. **As an** admin, **I want** to have all the access/functionalities like the support staff, **so that** I can answer queries, and pin queries

    3. **As an** admin, **I want** to be able to approve FAQs requests, **so that** FAQs can be generated dynamically.

    4. **As an** admin, **I want** a dashboard/performance page with support staff data **so that** I can evaluate their performance.

    5. **As an** admin, **I want** to be able to set priority on FAQs **so that** FAQs can be sorted as per the priorities.

6. **As an** admin, **I want** to be able to create tags/domains, **so that** I can assign support staff the tags.
7. **As an** admin, **I want** to be able to assign particular tags/domains to support staff, **so that** they can access only those tags/domains related queries.
8. **As an** admin, **I want** to be able to pin the query **so that** particular query should be the top

Storyboard

Group-15 (21f1003973, 21f1004451, 21f1000205)

Support Staff POV

- Yoda, a member of support staff, is feeling overwhelmed by the volume of emails he receives and frustrated by the limitations of the email system. He thinks that an online ticket system will help to solve queries faster. He wants to discuss this with his Manager

Google Workspace
Ugh, so many mails to reply! It's taking forever to get through them all, and I'm worried I might miss something important. I wish there would been an online portal to answer this queries efficiently

Hello Mam, I wanted to discuss about the email system we're using to respond to student queries. I think we should develop an online support ticket system instead.

Okay, what are your reasons for wanting to make this change?

The email system can be quite slow and inefficient. Students have to wait a long time to get a response, and we can't always track which queries have been addressed and which ones are still pending. The online support ticket system would allow us to provide more personalized and efficient support to students

Alright, let's look into it further and see if we can make this happen. Thanks for bringing it to my attention.

User POV

- Grogu, a student of IITM Online Degree, is studying in her room. She is facing issue while login, She wants to get in touch with support team to solve her problem

Why is this happening again? I just want to be able to access my course without any problems

I really need some guidance. Let me ask my doubt to support team
App's name
Home
FAQs
Type of view -> Student
Filter#
Filter#
Filter#
Filter#
Filter#
#ticket id - Type123
29 feb 2023, 8:53 pm
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#ticket id - Type123

Hi, I'm having trouble accessing my online course. Every time I try to log in, I get an error message.

Logo
App's name
Home
FAQs
Type of view -> Support Staff
User
Filter#
Filter#
Filter#
Filter#
Filter#
#ticket id - Type123
29 feb 2023, 8.53 pm
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#ticket id - Type123
29 feb 2023, 8.53 pm
Great, another opportunity to help a student and make a positive impact!

Hi, I'm sorry to hear you're having trouble accessing your course. Can you give me some more details about the error message you're seeing?

Sure, it says "invalid credentials" when I try to log in.

Okay, let me check your account and escalate this issue to our technical team. They will look into it and get back to you as soon as possible.

Thank you for your help.

You're welcome. We're always here to help. Have a great day.

I'm glad that I reached out for help instead of struggling with the problem on my own. I feel more confident in my ability to navigate the portal now that I have received support and guidance.

Wirefames

Group 15 (21f1003973, 21f1004451, 21f1000205)

Student’s View

Logo

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Sign in with Google

Logo **App's name** **Home** FAQs Type of view -> Student User

Filter# Filter# Filter# Filter# Filter#

#ticket id - Type123 29 feb 2023, 8.53 pm

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#ticket id - Type123 29 feb 2023, 8.5

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Logo **App's name** Home **FAQs** Type of view -> Student User

Filter# Filter# Filter# Filter# Filter#

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Settings

About Me #other options

#pic

#Name

#email

#type_of_user

#joining_date

#other_details

Support Staff’s View

Logo **App's name** **Home** FAQs Type of view -> Support Staff User

Filter# Filter# Filter# Filter# Filter#

#ticket id - Type123 29 feb 2023, 8.53 pm

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Logo **App's name** Home **FAQs** Type of view -> Support Staff User

Filter# Filter# Filter# Filter# Filter#

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Settings

About Me #other options

#pic

#Name

#email

#type_of_user

#joining_date

#other_details

Admin’s View

Logo **App's name** **Home** FAQs Staff Type of view -> Admin User

Filter# Filter# Filter# Filter# Filter#

#ticket id - Type123 29 feb 2023, 8.53 pm

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Logo **App's name** Home **FAQs** Staff Type of view -> Admin User

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Logo **App's name** Home FAQs **Staff** Type of view -> Admin User

Filter# Filter#

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#details

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Settings

About Me #other options

#pic

#Name

#email

#type_of_user

#joining_date

#other_details

Milestone - 3

BSCSS3001: Software Engineering

Group-15 (21f1003973, 21f1004451, 21f1000205)

Indian Institute of Technology, Madras
March, 2023

Design of Components

- Student's View
    - Authentication of User
    - Creating Tickets
    - Updating tickets and status to resolved
    - Deleting tickets
    - view dashboard with recent/all tickets
    - read FAQs
    - Notifications for created and subscribed tickets
    - Profile Settings page

- Staff's View
    - Authentication of Staff
    - Reply to tickets raised by students
    - Pinning ticket to top
    - Request admin to add FAQ
    - Flag/Delete a ticket

- Admin's view
    - Authentication of Admin
    - Manage members in support staff
    - Manage FAQ requests sent by support staff
    - Add/Delete/Reorder FAQs
    - Dashboard/Performance Page of support staff
    - Pinning ticket to top
    - Add tags for support staff and students
    - Celery task for notifying unresolved tickets after 48 hours

Class Diagram

Sprint Schedule

- Sprint 1: Milestone-1
  - Date: 13/02/2023 - 19/02/2023
    - Identify users of the application - primary, secondary and tertiary users.
    - Write user stories for the requirements, based on the SMART guidelines discussed in the lectures
- Sprint 2: Milestone-2
  - Date: 20/02/2023 - 26/02/2023
    - Create a storyboard for the application
    - Create low-fidelity wireframes for the identified user stories
- Sprint 3: Milestone-3
  - Date: 27/02/2023 - 05/03/2023
    - JIRA Roadmap
    - Design Of Components
    - Software Design-UML Class Diagrams
- Sprint 4: Milestone-4
  - Date: 06/03/2023 - 19/03/2023
    - Developing API Endpoints
    - Developing Frontend
    - YML File For APIs
- Sprint 5: Milestone-5
  - Date: 20/03/2023 - 02/04/2023
    - Integrating APIs to Frontend
    - Design and describe a few test cases
    - Code Review
- Sprint 6: Milestone-6
  - Date: 03/04/2023 - 16/04/2023
    - Recorded presentation of the working model of your system.
    - Testing of the whole system
    - Detailed report on work done

SCRUM Meetings Schedule and Minutes

SCRUM Meetings: Every Wednesday, Saturday and Sunday 10:00PM –11:00PM

Minutes from Sprint 1 SCRUM Meetings:
Identified and discussed the different types of users (primary, secondary, and tertiary). Discussed User Stories and applied SMART Guidelines to refine the User Stories.

Minutes from Sprint 2 SCRUM Meetings:
Discussed about the Storyboard and Wireframes, how many stories should be there and screens for wireframes

Minutes from Sprint 3 SCRUM Meetings:
Discussed the complete workflow and plan the execution of the project. Also discussed about the design of components and class diagrams

Projects / SE Group 15
SG1 Sprint 3
0 days remaining
Complete sprint
PH
Epic
GROUP BY
None
Insights
TO DO
IN PROGRESS 1 ISSUE
DONE 2 ISSUES
Software Design-UML Class Diagrams
MILESTONE-3
SG1-13
JIRA Roadmap
MILESTONE-3
SG1-11
Design Of Components
MILESTONE-3
SG1-12

MILESTONE – 4

REQUIREMENTS AND APIs:

We had the following Requirements for the APIs

alembic==1.10.2

amqp==5.1.1

aniso8601==9.0.1

async-timeout==4.0.2

billiard==3.6.4.0

cachetools==5.3.0

celery==5.2.7

certifi==2022.12.7

cffi==1.15.1

charset-normalizer==3.1.0

click==8.1.3

click-didyoumean==0.3.0

click-plugins==1.1.1

click-repl==0.2.0

colorama==0.4.6

cryptography==40.0.1

Flask==2.2.3

Flask-Cors==3.0.10

Flask-Migrate==4.0.4

Flask-RESTful==0.3.9

Flask-SQLAlchemy==3.0.3

google-api-core==2.11.0

google-api-python-client==2.85.0

google-auth==2.17.3

google-auth-httplib2==0.1.0

google-auth-oauthlib==1.0.0

googleapis-common-protos==1.59.0

greenlet==2.0.2

httplib2==0.22.0

idna==3.4

itsdangerous==2.1.2

Jinja2==3.1.2

jwt==1.3.1

kombu==5.2.4

Mako==1.2.4

MarkupSafe==2.1.2

oauthlib==3.2.2

prompt-toolkit==3.0.38

protobuf==4.22.3

pyasn1==0.4.8

pyasn1-modules==0.2.8

pycparser==2.21

PyJWT==2.6.0

pyparsing==3.0.9

pytz==2023.3

redis==4.5.4

requests==2.28.2

requests-oauthlib==1.3.1

rsa==4.9

six==1.16.0

SQLAlchemy==2.0.8

typing_extensions==4.5.0

uritemplate==4.1.1

urllib3==1.26.15

vine==5.0.0

wcwidth==0.2.6

Werkzeug==2.2.3

We have also used Flask, Flask Restful, SQL, sqlite3, db, celery, celery beats, redis, jwt and google python module to send emails.

MILESTONE – 5

Testing is an essential part of software development that involves running a program or a module with the aim of finding errors or bugs in it. There are several types of testing, such as unit testing, integration testing, system testing, and acceptance testing.

Pytest is a popular testing framework in Python that simplifies the process of writing and executing tests. It provides a range of useful features, including test discovery, fixtures, parametrization, and test reporting.

We have used Pytest library from Python to test our project. An example test script is showed below.

```
import json
from main import app

def test_login():
    data = {
        "obj_data": {
            "user": {
                "displayName": "Test Name",
                "photoURL": "photo URL",
                "email": "test@example.com",
                "uid": "exampleuid"
            }
        }
    }
    response = app.test_client().post("/api/login", json=json.dumps(data))
    json_response = response.get_json()
    assert json_response is None
```