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# Software Engineering

Project Details  
Jan 2023

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# Problem statement - part 1

Online support ticket system for the IITM BSc degree program

The support team at the IITM BSc degree program often get overwhelmed with emails from students regarding queries and concerns. Your task is to create an online support ticketing system for the IITM BSc degree program. Students can create a support ticket for a particular concern or query. Before they create a ticket, the system should also show a list of similar tickets, and allow users to like or +1 an already existing support ticket, so that duplicates are not created. This way popular concerns or queries can be prioritised by the support team.

## Problem statement - part 2

After the support team addresses the concern, they can mark the ticket as resolved, and an appropriate notification should be sent to concerned users.

Another important feature of the ticketing system is dynamic FAQ updation. Many student concerns can be FAQs which will be useful for future students. If appropriate, the support query and response should be added to the FAQ section by support admins, and appropriately categorised, so that an updated FAQ will be readily available to students. The platform should allow users to enroll as students, support staff and admins.

Apart from these standard requirements, you can also think of other features which can add value to users.

# Problem statement - specifics

- The goal of the project is for you to come up with specific user requirements, design, interfaces, APIs etc using the knowledge, practices and tools discussed in the course lectures.
- Apart from the standard requirements, feel free to think and add other features which can add value to the users of this system.
- The focus of the submissions is not only a working model rather every deliverable listed further is equally important. The focus is on the process of developing the project and the experiences along.

# Project groups

- This will be a group project in groups of at least 2 and at most 3.
- Start forming a group.
- For notifying groups to us, google form will be made available through email.
  - Create groups and fill the form(will be sent on mail). Deadline Sunday , 5 Feb 2023
  - For the remaining students who did not form any group, we will create groups and notify

# Project Milestones.

1. End of Week **3** - User requirements.
2. End of Week **5** - User Interfaces.
3. End of Week **6** - Scheduling and design
4. End of Week **8** - API endpoints.
5. End of Week **9** - Test plan.
6. End of Week **12**- Final submission.
  - Includes Working model, and all design and planning documentation in the form of project report.

# Milestone 1 - Identify User Requirements

Deadline by the end of Week 3 **[12 Feb]**

- 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

The user stories should be in the following format:

As a [type of user],

I want [an action],

So that [a benefit/value]

# Milestone 2 - User Interfaces

Deadline by the end of Week 5 **[26 Feb]**

- Create a storyboard for the application - it can be a ppt or even a video. Embed the ppt/video in the pdf submission of this week.
- Create low-fidelity wireframes for the identified user stories.
- Apply usability design guidelines and heuristics discussed in lectures to come up with the wireframes.



# Milestone 3 - Scheduling and Design

Deadline by the end of Week 6 **[5 Mar]**

- Project Schedule - come up with a schedule of your overall project - schedule for your sprints and iterations, timings of your scrum meetings etc. Trello board, Gantt chart - specifying your tasks and contributions.
- Project Scheduling Tools - which tools are you using? E.g. Pivotal Tracker, Jira
- Design of Components - Describe different components of your system.
- Software Design - Basic class diagrams of your proposed system.
- Details/Minutes of a few scrum meetings
- Milestone 3 Pdf Report.

## Milestone 4 - API Endpoints

Deadline by the end of Week 8 **[19 Mar]**

- Description of API endpoints. [As per the problem statement]
- Submission should be as a yml file.

# Milestone 5 - Test cases, test suite of the project

Deadline by the end of Week 10 **[2 Apr]**

- Design and describe a few test cases. In the format:  
*[ Page being tested,*  
*Inputs,*  
*Expected output,*  
*Actual Output,*  
*Result- Success/Fail ]*
- Some basic unit tests(using pytest) for the python code should be part of your project.

# Milestone 6 - Final Submission

Deadline by end of Week 12 **[16 Apr]**

- Week-12 is completely focused on the project, and no new course content is released in this week.
- Complete implementation along with a working prototype expected.
- Final project report(consistent with intermediate milestone documents).
  - Detailed report on work done from Milestone 1 through Milestone 5.
  - Implementation details of your project
    - Technologies and tools used.
    - Where is your application hosted(if hosted)?
    - And instructions to run your application.
  - A section describing code review, issue reporting and tracking using screenshots.
- Recorded presentation of the working model of your system.

# Project Technology

## Flask Framework

- For consistency.
- Something that something that all of the team members know and do not face any issue with collaboration.

# Project Submission

- We use google classroom for submissions.
- For each project, a separate git repository will be provided which is to be used for all your submissions.
- The link and procedure to set up the repositories will be made available after the groups are finalized.
- It is expected that you know the basic git operations that you will use for maintaining your project files and submission files.

# Project Submission - Repository structure

- Documents for each milestone should be uploaded to a separate milestone directory as given in the template repository.
- All document files should be in the 'pdf' format(except API doc) that you upload in the milestone directories. You can use any format for your intermediate files that you use for collaborating within your teams. Except for the final submission document, put all your helping documents anywhere outside the milestone folder.
- Feel free to choose any directory structure for your code and other configuration files.

# Project evaluation

- Instructor evaluation.
- Peer evaluation .
- Github project quantitative evaluation.



# Final Submission Evaluation Points

Components evaluated in final Project Evaluation:

- i. The overall design of the project.
- ii. **Teamwork** that includes code review, issue reporting and tracking etc.
- iii. Efficient coding practices.
- iv. Consistent design through different milestones.

# Strictly No Plagiarism.

In you first submission of the project include the below declaration.

I \_\_ (Student Name) \_\_ with roll no. \_\_ (Roll\_no) \_\_ declare that, I will not use any ideas, writings, code or work that is not my own or my group's with the intention of claiming it my or my group's work. And all the work that I will submit as part of this project I will not share that outside my group with anybody directly or indirectly or upload that on any public forums on the internet.

I acknowledge that failing in any of the above constitutes as plagiarism and in that case the institute can take appropriate disciplinary action.

Sign:

Date: