

SOFTWARE ENGINEERING

Final Report

SUBMITTED IN THE PARTIAL FULFILLMENT OF THE
REQUIREMENTS OF THE COURSE:

BSCSS3001: Software Engineering

By:

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Report on work done in different milestones

- **Milestone 1** :The group identified the different users of the application in terms of the primary, secondary and tertiary users. Post the same, user stories (following SMART guidelines) were written for the different users identified earlier. 25 user stories which had the mandatory features as suggested by the project and some additional features as deemed necessary were compiled and submitted before the deadline.
- **Milestone 2** : Four storyboards (using Comicgen and Google Slides) were depicted using comic strips:
 - 2 storyboards were made from the perspective of a support agent
 - 1 storyboard was made from the perspective of a student
 - 1 storyboard was made from the perspective of a manager.

Wireframes were designed for the application using the design heuristics that were learnt in the Software Engineering course. Essential usability principles that were incorporated in our wireframe was as follows:

- Effectiveness: To ensure that users can carry out their work efficiently.
- Efficiency: Each user can effectively carry out their task in a minimal number of steps.
- Safety: Confirmation prompts to prevent any unwanted actions
- Learnability: Useful tool-tips on mouse hover
- Memorability: Easy to use, consistent interface, which helps the user to remember the same.

Some design heuristics that were followed during this phase were:

- Consistency: Layout of different pages are similar.
- Clean and Functional Design: Clutter free easy to recognize design which focuses on features and functionality, with pleasant aesthetics.
- Show Status: Students can see if support agents have viewed the ticket raised by them. Post that, on answering the ticket, the ticket is displayed as closed (which can be reopened by the student if required), again showing the status of their ticket.
- Provide Help: Useful tool-tips on mouse hover.

- **Milestone 3** : A rough project schedule was drawn upon keeping in mind the deadlines for each milestone and the amount of work that was required for the same. Sprints were planned for the different tasks. Jira was chosen as an appropriate project management tool and a Gantt Chart roadmap was plotted to keep track of the progress. Different components were designed as UML diagrams using the Star UML software to model the software system. Details of scrum meetings conducted up until this stage were presented as “minutes of the meet” in the milestone 3 submission.

- Milestone 4 : API endpoints were described in the YAML file (Using OpenAPI 3.0 specification) and the coding for the backend of the application was also commenced during this milestone. The API specification was supposed to be the first version of the backend, which we believed could be subsequently changed based on any additional requirements/dependencies.
- Milestone 5 : Extensive testing (100+ tests) was done using Pytest for the code written for the backend. Tests directly relating to user stories were documented in the Milestone 5 report using the format given in the instructions. All tests were passed. Frontend coding for the software was commenced in this milestone.
- Milestone 6 : Frontend was completed and fully integrated with the backend. Frontend-backend integration was tested manually for all the pages to ensure that the software was behaving as expected. The second version of the API documentation was completed based on the changes and new introductions to the API. Finally, a report was made for the completed project and a video demo was recorded for the working application.

Implementation Details of the Project

- **Technologies and tools used**
 - Technologies for the backend
 - Flask
 - Flask Restful (For creating API endpoints)
 - Flask SQLAlchemy
 - Pytest (Only for testing)
 - Swagger Editor (Only for API documentation)
 - Postman, Thunderclient (For checking API endpoints manually)
 - Mailgun - A Transactional email service provider is used to send relevant emails to the users
 - Technologies for the frontend
 - Vue 3 CLI
 - Javascript
 - Vue Router
 - Vuex Store
 - Bootstrap (for aesthetics and styling)
 - HTML and CSS
 - ESLint to help with debugging the frontend
 - Axios and Fetch API for requests.

- General technologies used
 - Github (for versioning, code management, tracking, reviewing, issues, etc)
 - Algolia Search is used in the backend and frontend to create a smooth search experience
 - Jira (for project management)
 - ComicGen (for creating comics for storyboarding)
 - Star UML (for creating UML diagrams)
- Hosting
 - Currently the application is not hosted publicly.
- Instructions to run our application
 - On Ubuntu/MAC OS:
 - Git clone the repository.
 - Change the directory to the “backend” directory inside the “Milestone-6-Final-Submission” directory using the command :
`cd ./Milestone-6-Final-Submission/Code/backend`
 - Create a Python virtual environment using the command:
`python3 -m venv "<<Name of the virtual environment">>`
 - Activate the virtual environment using the command:
`source <<Name of the virtual environment>>/bin/activate`
 - Install the requirements using the command :
`pip3 install -r requirements.txt`
 - Now, on the terminal type the following command to start the flask server:
`python3 main.py`
 - In the same “backend” directory, in a new terminal inside the virtual environment start the redis server by typing:
`redis-server`
 - Similarly, start the celery worker in the “backend” directory inside the virtual environment by typing:
`celery -A main.celery worker -l info`
 - Furthermore start the celery beat in the “backend” directory inside the virtual environment by typing:
`celery -A main.celery beat --max-interval 1 -l info`
 - For the frontend of the application, we would require node js and npm. We recommend to install the latest LTS version of Node js from the following link : <https://nodejs.org/en>
 - Once Node js is installed and npm is working, open a new terminal and change the directory to the “Code” folder inside the “Milestone-6-Final-Submission” directory which we saw earlier.

- Once inside the directory, change the directory to “frontend” by using the command: `cd ./frontend/`
 - Now, run the following command to install the necessary packages for the frontend: `npm install`.
 - After successful installation of the required packages, serve the frontend using the command: `npm run serve`
 - The frontend server would be available on the URL: `localhost:8080`
 - Please note that for the email functionality and search functionality to work, you would need API keys. In order to secure these API keys, they aren't part of the repository. You would need to request the keys from us
- On Windows:
- Git clone the repository.
 - Change the directory to the “backend” directory inside the “Milestone-6-Final-Submission” directory using the command :
`cd .\Milestone-6-Final-Submission\Code\backend`
 - Create a Python virtual environment using the command:
`python3 -m venv "<<Name of the virtual environment">>`
 - Activate the virtual environment using the command:
`.\<<Name of the virtual environment>>\Scripts\activate`
(You might have to enable `Activate.ps1` on Windows, for which you can use the command (in a single line of the terminal):
`Set-ExecutionPolicy -ExecutionPolicy RemoteSigned -Scope CurrentUser` {If you are still not able to activate your virtual environment, please visit these links to know more:
 - a. <https://docs.python.org/3/library/venv.html>
 - b. <https://stackoverflow.com/questions/18713086/virtualenv-wo-nt-activate-on-windows>
 - Install the requirements using the command :
`pip install -r requirements.txt`
 - Now, on the terminal type the following command to start the flask server:
`python main.py`
 - In the same “backend” directory, in a new terminal inside the virtual environment start the redis server by typing:
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- Once inside the directory, change the directory to “frontend” by using the command: cd .\frontend\
- Now, run the following command to install the necessary packages for the frontend: npm install.
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- The frontend server would be available on the URL: localhost:8080

Code Review, Issue Reporting and Tracking

This was completely done on GitHub.

ISSUES:

The screenshot shows the GitHub interface for the repository 'bsc-iitm / soft-engg-project-jan-2023-group-1-1'. The 'Issues' tab is selected, displaying a list of 12 closed issues. The issues are sorted by 'Closed' date. Each issue entry includes a title, a brief description, the author, the date it was closed, and the number of comments.

Issue Title	Author	Closed Date	Comments
two different references of datetime imported in api.py	2111000743	last month	1
Regarding the PyJWT structure	aryab-sudo	Mar 16	1
Regarding Body in GET requests	aryab-sudo	last month	1
Regarding autoincrement = True for ticket_id in FAQ model class	aryab-sudo	Mar 16	2
getResolutionTimes Endpoint needs a few minor corrections	2111000743	Mar 12	2
Are all tables necessary	Chirag-God-17	3 weeks ago	3
PATCH request for TicketAPI Endpoint should allow the students to give rating	aryab-sudo	Mar 12	2
Relationship of student/support agent class with ticket class	2111000743	Mar 5	1
Missing components in the first UML diagram	aryab-sudo	Mar 3	2
Repository needs restructuring to comply with project instructions	2111000743	Feb 25	3
Issues with First Wireframe on Excalidraw	Chirag-God-17	Feb 24	5

ProTip! Updated in the last three days: updated > 2023-04-12.

Pull Requests:

Pull requests
 Actions
 Projects
 Wiki
 Security
 Insights

Filters ▾

ispr is:closed

Labels 11

Milestones 0

New pull request

✕ Clear current search query, filters, and sorts

<input type="checkbox"/> 2 Open ✓ 40 Closed	Author ▾ Label ▾ Projects ▾ Milestones ▾ Reviews ▾ Assignee ▾ Sort ▾
<div style="display: flex; justify-content: space-between; align-items: baseline;"> <div> Update openapi.yaml #54 by 21f1000743 was merged 20 hours ago • Approved </div> <div> 5</div> </div>	
<div style="display: flex; justify-content: space-between; align-items: baseline;"> <div> Update openapi.yaml #53 by 21f1000743 was merged 2 days ago • Approved </div> <div> 3</div> </div>	
<div style="display: flex; justify-content: space-between; align-items: baseline;"> <div> amin frontend corrections #52 by Chirag-Goel-17 was merged 3 days ago </div> <div></div> </div>	
<div style="display: flex; justify-content: space-between; align-items: baseline;"> <div> Chirag frontend #51 by Chirag-Goel-17 was closed 3 days ago </div> <div></div> </div>	
<div style="display: flex; justify-content: space-between; align-items: baseline;"> <div> Flagged Post tracking #50 by aryab-sudo was merged 4 days ago </div> <div></div> </div>	
<div style="display: flex; justify-content: space-between; align-items: baseline;"> <div> Arya frontend 2 #49 by aryab-sudo was merged 4 days ago </div> <div> 2</div> </div>	
<div style="display: flex; justify-content: space-between; align-items: baseline;"> <div> buttons display #48 by Chirag-Goel-17 was merged last week </div> <div></div> </div>	
<div style="display: flex; justify-content: space-between; align-items: baseline;"> <div> support agent view #46 by Chirag-Goel-17 was merged last week </div> <div> 3</div> </div>	
<div style="display: flex; justify-content: space-between; align-items: baseline;"> <div> Responses of tickets #45 by Chirag-Goel-17 was merged 2 weeks ago </div> <div></div> </div>	
<div style="display: flex; justify-content: space-between; align-items: baseline;"> <div> Student Dashboard basic #44 by Chirag-Goel-17 was merged 3 weeks ago </div> <div></div> </div>	
<div style="display: flex; justify-content: space-between; align-items: baseline;"> <div> login component and change password component #43 by Chirag-Goel-17 was merged 3 weeks ago </div> <div></div> </div>	
<div style="display: flex; justify-content: space-between; align-items: baseline;"> <div> Update test_arya.py #42 by aryab-sudo was merged 3 weeks ago </div> <div></div> </div>	
<div style="display: flex; justify-content: space-between; align-items: baseline;"> <div> Updates in API, Main,test_arya #41 by aryab-sudo was merged 3 weeks ago </div> <div></div> </div>	
<div style="display: flex; justify-content: space-between; align-items: baseline;"> <div> Update test_arya.py #40 by aryab-sudo was merged 3 weeks ago </div> <div></div> </div>	
<div style="display: flex; justify-content: space-between; align-items: baseline;"> <div> Arya pytest #39 by aryab-sudo was merged 3 weeks ago </div> <div></div> </div>	
<div style="display: flex; justify-content: space-between; align-items: baseline;"> <div> Tests for ResponseAPI by response_id #38 by aryab-sudo was merged 3 weeks ago </div> <div></div> </div>	
<div style="display: flex; justify-content: space-between; align-items: baseline;"> <div> Arya pytest #37 by aryab-sudo was merged 3 weeks ago </div> <div></div> </div>	
<div style="display: flex; justify-content: space-between; align-items: baseline;"> <div> Arya pytest #36 by aryab-sudo was merged 3 weeks ago </div> <div></div> </div>	
<div style="display: flex; justify-content: space-between; align-items: baseline;"> <div> User class test & Delete Api correctionm #35 by Chirag-Goel-17 was merged last month </div> <div></div> </div>	

Code Reviews

Update openapi.yaml #54

[Merged](#) aryab-sudo merged 3 commits into `main` from `varun_yaml_doc` yesterday

Conversation 5

Commits 3

Checks 0

Files changed 1

+158 -1

21f1000743 commented 2 days ago

Added missing documentation

Update openapi.yaml 354f568

21f1000743 requested review from aryab-sudo and Chirag-Goel-17 2 days ago

Chirag-Goel-17 reviewed 2 days ago

Intermediate Work/Code/backend/openapi.yaml Outdated

Hide resolved

1328 + application/json:

1329 + schema:

1330 + required:

1331 + - category

Chirag-Goel-17 2 days ago

Required attributes should be ticket_id and response

21f1000743 2 days ago

That's a good spot. Will fix it in my next commit

Chirag-Goel-17 2 days ago

👍👍

Reply...

Unresolve conversation 21f1000743 marked this conversation as resolved.

Update openapi.yaml 9897b82

aryab-sudo requested changes yesterday

aryab-sudo left a comment

1. ResponseAPI_by_ticket has a patch request which is currently missing.

2. ResponseAPI_by_responseID doesn't have a delete request. This should be in a separate class called ResponseAPI_by_responseID_delete

3.

Update openapi.yaml 69f154d

21f1000743 requested a review from aryab-sudo yesterday

Reviewers

Chirag-Goel-17

aryab-sudo

Assignees

No one—assign yourself

Labels

None yet

Projects

None yet

Milestone

No milestone

Development

Successfully merging this pull request may close these issues.



None yet

Notifications



Unsubscribe

3 participants

Lock conversation

  Update openapi.yaml

69f154d

  21f1000743 requested a review from **aryab-sudo** yesterday




21f1000743 commented yesterday


Author ...

I've updated the document as per your review. Please see if the changes are okay



 **aryab-sudo** approved these changes yesterday

[View reviewed changes](#)

  **aryab-sudo** merged commit **ecd111f** into `main` yesterday

[Revert](#)



Pull request successfully merged and closed

[Delete branch](#)

You're all set—the `varun_yaml_doc` branch can be safely deleted.

Update openapi.yaml #53

Edit <> Code

Merged Chirag-Goel-17 merged 2 commits into `main` from `yaml` 2 days ago

Conversation 3 Commits 2 Checks 0 Files changed 1 +72 -2

21f1000743 commented 2 days ago

No description provided.

Update openapi.yaml ce4d55

21f1000743 requested review from aryab-sudo and Chirag-Goel-17 2 days ago

aryab-sudo requested changes 2 days ago [View reviewed changes](#)

aryab-sudo left a comment

flaggedPostAPI now also returns two booleans `is_approved` and `is_rejected` in the JSON body which needs to be incorporated in the documentation

Updated yaml as per reviews bd4922a

21f1000743 requested review from aryab-sudo and Chirag-Goel-17 and removed request for Chirag-Goel-17 2 days ago

aryab-sudo approved these changes 2 days ago [View reviewed changes](#)

aryab-sudo left a comment

Yes, the `flaggedPostAPI` is now properly documented

Chirag-Goel-17 approved these changes 2 days ago [View reviewed changes](#)

Chirag-Goel-17 left a comment

I concur , flagpost api looks to be properly documented

Chirag-Goel-17 merged commit 841af5c into `main` 2 days ago

Revert

21f1000743 deleted the `yaml` branch 2 days ago

Restore branch

Reviewers

- aryab-sudo ✓
- Chirag-Goel-17 ✓

Assignees

No one—assign yourself

Labels

None yet

Projects

None yet

Milestone

No milestone

Development

Successfully merging this pull request may close these issues.

None yet

Notifications [Customize](#)

[Unsubscribe](#)

You're receiving notifications because you modified the open/close state.

3 participants

[Lock conversation](#)

Chirag-Goel-17 requested review from 21f1000743 6 minutes ago

21f1000743 reviewed 6 minutes ago

View reviewed changes

Intermediate Work/Code/frontend/src/components/DashboardSupportAgentComponent.vue

Hide resolved

91 + },
92 + sort_time() {
93 + this.tickets.sort((a, b) => {
94 + return new Date(b.created_at) - new Date(a.created_at);

21f1000743 7 minutes ago

...

Check the logic for sorting. Doesn't seem to work

😊

Chirag-Goel-17 5 minutes ago

Author

...

yeah sure

😊

Chirag-Goel-17 now

Author

...

yeah it should be creation_date

😊

Reply...

Unresolve conversation

Chirag-Goel-17 marked this conversation as resolved.

Chirag-Goel-17 reviewed 2 minutes ago

View reviewed changes

Intermediate Work/Code/frontend/src/components/ManageFlaggedPosts.vue

Hide resolved

23 + </div>
24 +

25 + <div class="row">
26 + <button class="btn btn-danger" @click="rejectFlag(t.ticket_id)"> Reject </b

Chirag-Goel-17 2 minutes ago

...

Check css for this component its not aligned with accept button

😊

aryab-sudo now

Author

...

Yes this will be corrected in the next commit.

😊

Reply...

Unresolve conversation

Chirag-Goel-17 marked this conversation as resolved.