



Issue Tracking System using Angular

Version Dated: 07.2024

Table of Contents

Problem Statement	3
Objective	3
Business Context	3
User Interface & Visual Designs	3
Project Plan	3
Functional Requirements	4
1. Project Layout (Landing Page)	4
2. Project Board Screen	4
3. Create Issue Screen	5
4. Create Project Screen	6
5. Object value mapping	7
API Specs	7
Non-Functional Requirements	8
Guidelines	8
Best Practices	8
Milestones and Evaluation Criteria	9



Problem Statement

Objective

Stark Industries, a giant conglomerate led by Tony Stark has collaborated with Deloitte USI to build a web application to allow customers to configure an issue tracking system. As the instance is built, the application should display in what stage the issue is.

Business Context

The Banking Management System (BMS) is a comprehensive software solution designed to facilitate the efficient management of banking operations. This system is intended to streamline the processes of a typical banking institution, enhancing the ability to manage customer accounts, process transactions, and provide financial services securely and effectively.

User Interface & Visual Designs

Please find the mockups for the application in the [Mockup link](#). Mockups are for visual representation only.

Project Plan

Mr. Stark has an official event scheduled on **Friday at 12:30 pm**, where he wants to launch the **Issue Tracker System**. The delivery is expected to be of high quality, iterative, and showing progressive enhancements without waiting for a last-minute integration. This will reduce the risk and keep Mr. Stark informed about the progress schedule instead of a last-minute surprise. There are daily checkpoints twice a day to keep track of the progress.

Deloitte's technical team has estimated the project to be doable by an experienced engineer in approximately 8 hrs. Given that the Deloitte's team is newly introduced to Angular, they are expected to take slightly longer. It's expected that they will heavily prioritize doing the important stuff to make the presentation on Friday successful.

The milestones below show the must-have features and how they should be planned for delivery. The remaining time should be used to complete the functionality and prioritized based on the business context.

QUALITY FOCUS

Even though the client doesn't mention quality, the quality focus must be there. Whatever we deliver must be delivered with excellent quality. This is important for getting continued business from Stark Industries and establishing the value Deloitte can deliver to them i.e. "High Quality delivered Quickly".

Functional Requirements

The user should land on a page with tabs containing the required fields for configuration.

Go through the [Mockup link](#).

1. Project Layout (Landing Page)

Need to design the layout according to the screen which has the following:

Component	Description
Header	<ul style="list-style-type: none">• Header: It should have company logo on the left and UI search bar on the home page, profile icon to the top right.• The search bar will filter out the issue results based on summary and description. If issue has a matching RegEx in summary/ description, only these issues will show up
Side Nav	<p>Should have navigation link which redirect user to view:</p> <ul style="list-style-type: none">• Project Board• Create Issues• Create Project
Main Content	<ul style="list-style-type: none">• Should display the content based on selection of any navigation link• By default, project board will be displayed• If there are no projects, show the message "No projects Available". Below this message, show a link "Create Project", which navigates to the Create Project page

2. Project Board Screen

Need to design the layout according to the given wireframe screen which has the following:

Component	Description
Project Details	<p>This consists of project details with the project name (as drop-down)</p> <ul style="list-style-type: none">• The first project from the API Response should be chosen by default• Project Owner should be disabled by default• Start Date and End Date should follow UI Mockups in the format dd-mm-YYYY
View Insights	<p>This consists of project details with the project name (as drop-down)</p> <ul style="list-style-type: none">• Card to show statistics:<ul style="list-style-type: none">– Total number of issues– TO-DO– Development– Testing– Completed• Status bar to show the graph according to the above statistics—to be updated dynamically based on the issue and issue-types• In the rightmost section, show team member name details

	<ul style="list-style-type: none"> • In the teammates panel, consider everyone as members and not owners • All the team members can be fetched by looking at the project owner
Filters	<p>You can have filters on 2 basis and the filtering should be done on the Front-end itself:</p> <ul style="list-style-type: none"> • Filter by assignee: Filter by the assigning name (any name of their team members) • Filter by priority: List down the issues which have the priority same as the selected one from dropdown <ul style="list-style-type: none"> – Here, priority is a multi-select option—it can have more than one priority
All Issues	<ul style="list-style-type: none"> • List down all the issues <ul style="list-style-type: none"> – Categorized into 4 manners <ul style="list-style-type: none"> ○ To-do ○ Development ○ Testing ○ Completed – The cards should be sorted by last updated date – Use Angular pipe to format & display the data on card – Each category will consist of cards belonging to above 4 categories. <ul style="list-style-type: none"> ○ Summary should not exceed in more than 1 Line & Description should not exceed more than 2 Line [use ellipsis] ○ Each card has ID title description, assignee person [U can ignore their designation for now] and priority with Color coding ○ Use static images if the image is not available for user ○ Clicking on any card will redirect us to their details page which will be a new route • Comments should be fetched separately with the API <ul style="list-style-type: none"> – On clicking on Add button, a pop-up should appear just below as per mockups, it should be a new every time add comment is clicked – Add a delete button at the end of each comment. On clicking the delete button, take users confirmation for the operation. If confirms then delete by calling the API • Click on edit and pre-populate the details in issue page <ul style="list-style-type: none"> – Validations and others to follow the same as in the issue page – On update navigate to the issue details page

3. Create Issue Screen

Need to design the layout according to screen which has the following:

Component	Description
Create Issues	<ul style="list-style-type: none"> • Form should have all the fills mentioned in Figma UI and have same look and feel <ul style="list-style-type: none"> – Summary <ul style="list-style-type: none"> ○ Type – String

- Max Length = 150
- Required
- No special characters except {-, /, |, . }
- **Type**
 - Drop-down (Refer Type in Object-Value Mapping)
 - Required
- **Project**
 - Drop-down (Refer values from Project API)
 - Required
- **Description**
 - Optional
 - Max Length = 500
- **Priority**
 - Drop-down (Refer Type in Object-Value Mapping)
 - Required
- **Assignee**
 - Required
 - Drop-down [values from Users API]
- **Tags**
 - This is a text-field
 - Max Length = 100
- **Story Point**
 - This is a numeric field
 - Only accept Prime Numbers
- **Sprint**
 - Choose as you wish
- Validations - Reactive form with all the expected form validation should be handled – with proper validation messages and dropdown should be maintained
- Buttons – Should have facility to
 - **Create a Form**
 - Only enable if form is valid
 - Disable while API request is in-progress
 - On Success, re-direct to project board
 - On Failure, show an error message from server
 - **Reset the form** – all Fields to blank

4. Create Project Screen

Component	Description
Create Form	<ul style="list-style-type: none"> • Here we Have four fields – name, owner start date, end date - Calendar to select start and end date <ul style="list-style-type: none"> – Project Name <ul style="list-style-type: none"> ○ Type – String

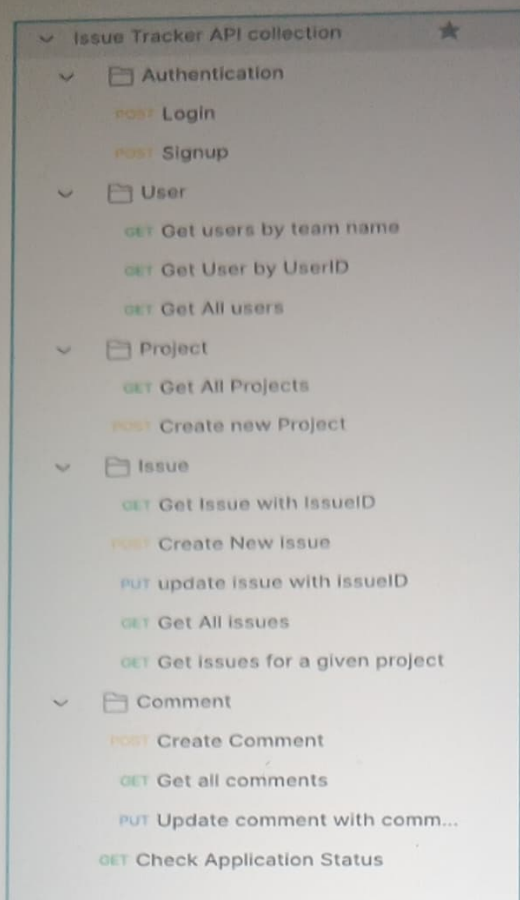
	<ul style="list-style-type: none"> ○ Max Length = 150 ○ Required ○ No special characters except { -, / , , . } – Project Owner <ul style="list-style-type: none"> ○ Required ○ Drop-down [values from Users API] – Project Start Date & End Date <ul style="list-style-type: none"> ○ Date Picker – ISO Format only ○ Optional Fields • Validations - Reactive form with all the expected form validation should be handled – with proper validation messages and dropdown should be maintained • Buttons – Should have facility to <ul style="list-style-type: none"> – Create a Form <ul style="list-style-type: none"> ○ Only enable if form is valid ○ Disable while API request is in-progress ○ On Success, re-direct to project board ○ On Failure, show an error message from server – Reset the form – all Fields to blank
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5. Object Value Mapping

Component	Description
Status	<ul style="list-style-type: none"> • 1 => To-Do • 2 => Development • 3 => Testing • 4 => Completed
Priority	<ul style="list-style-type: none"> • 1 => LOW • 2 => MEDIUM • 3 => HIGH
Type	<ul style="list-style-type: none"> • 1 => BUG • 2 => TASK • 3 => STORY

API Specs

List of API endpoints to be consumed:



Non-Functional Requirements

- The application should have low latency and high throughput.
- The application and data should be secured by Authentication.
- System should be scalable and maintainable.

Guidelines

- Make use of best coding practices.
- Develop the application so that it facilitates the easy plugging of other related modules like getting real-time updates and targeted notifications in case of status changes, in-issue commenting, etc. while scaling the application later.
- You can make assumptions and incorporate additional features or functionalities.
- A simple but working prototype is preferred over a non-working but good-looking application.
- The screenshots provided in this document are intended to help you understand and can be used as a reference to build the application.
- Add relevant comments for proper documentation.
- There would be a heavy focus on code quality and robustness of code in general.

Best Practices

- Follow consistent angular coding styles with proper naming conventions.
- Ensure use of heavy type scripting. Avoid using 'any'.

- Use ES6 features.
- Build reusable components.
- Add comments for each variable and method.

Milestones and Evaluation Criteria

S. No.	Details
Milestone 1	<ul style="list-style-type: none"> • App should be up and running after deployment with boilerplate code • Design the abstract layout for all the desktop views - project board, create issues, create project, view insights, issue details i.e., header, left navigation, right section • Header and left navigation should be static • Nav bar with connected links • All pages should be connected
Milestone 2	<ul style="list-style-type: none"> • Build project board screen with static data (excluding API integration) <ul style="list-style-type: none"> ◦ Project details and status section • Filter by assignee should be working
Milestone 3	<ul style="list-style-type: none"> • Build create issue and create project screen • Add validation in both the screens as mentioned in functional requirements
Milestone 4	Build issue details screen with static data
Milestone 5	Build project insights with static data
Milestone 6	<ul style="list-style-type: none"> • Integrate all the required APIs in project board screen • Align all the issues as per the status after fetching the response from the API • Should be able to change project and view the issues linked to the project as per the design • Project board screen should be pixel perfect
Milestone 7	<ul style="list-style-type: none"> • Integrate all the required APIs in create issues and create project screen • Handle redirection to project board screen after successfully creating issues or project • Populate new added data in project board after redirecting from create issues or create project screen • Create issues and create project screen should be pixel perfect
Milestone 8	<ul style="list-style-type: none"> • Integrate all the required APIs in issue details screen • Should be able to edit status and assignee • Link issue card (project board) to issue details • Issue details screen should be pixel perfect
Milestone 9	<ul style="list-style-type: none"> • Integrate all the required APIs in View insights screens • Display Numeric presentation and progress bar data as per the functional requirements • Link the project board screen to view insights screen

	<ul style="list-style-type: none"> • View insights screen should be pixel perfect
Milestone 10	<ul style="list-style-type: none"> • Implement edit and add comments functionality in issue details screens • Implement redirection from edit issue details to issue details after successfully editing the data • Populate updated data in issue details after successfully editing the details
Milestone 11	<ul style="list-style-type: none"> • Implement search by assignee and filter by priority in project board screen • Sort all issue cards by last updated dates
Milestone 12	<p>Stretch goal</p> <ul style="list-style-type: none"> • Handle errors and display the error message while adding/editing - project, issues
Milestone 13	Push the build to your GitHub repository
Technical Interview	Discussion of Assumptions, Functionalities, and Validations



PROJECT BOARD

CREATE ISSUES

CREATE PROJECT

Project Details

VIEW INSIGHTS

Project Name

HU 22.0 Angular Track

Project Owner

Pushpa Raj

Start Date : 31-01-2022

End Date : 31-01-2022

Select

Filter Assignee

Select

Filter Priority

TO DO

DEVELOPMENT

TESTING

COMPLETED

ID: HU220001

31-01-2022

Lorem Ipsum

Lorem Ipsum is simply dummy text of the printing and typesetting industry.



Ravi Jain

Priority
HIGH

ID: HU220003

31-01-2022

Lorem Ipsum

Lorem Ipsum is simply dummy text of the printing and typesetting industry.



Himanshu Singh

Priority
LOW

ID: HU220004

31-01-2022

Lorem Ipsum

Lorem Ipsum is simply dummy text of the printing and typesetting industry.



Komal Sharma

Priority
HIGH

ID: HU220007

31-01-2022

Lorem Ipsum

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Rajesh Singh

Priority
MEDIUM

ID: HU220002

31-01-2022

Lorem Ipsum

Lorem Ipsum is simply dummy text of the printing and typesetting industry.



Anjali Gupta

Priority
MEDIUM

ID: HU220005

31-01-2022

Lorem Ipsum

Lorem Ipsum is simply dummy text of the printing and typesetting industry.



Manish K

Priority
MEDIUM

ID: HU220008

31-01-2022

Lorem Ipsum

Lorem Ipsum is simply dummy text of the printing and typesetting industry.



Kavita Agrawal

Priority
LOW

ID: HU220006

31-01-2022

Lorem Ipsum

Lorem Ipsum is simply dummy text of the printing and typesetting industry.



Jatin Jain

Priority
HIGH



PROJECT BOARD

CREATE ISSUES

CREATE PROJECT

Create User Stories/ Tasks/ Bugs

Summary

Add Summary

Type

Select

Project

Select

Description

Write description

Priority

Select

Assignee

Select

Tags

Select

Sprint

Select

Story Points

0, 1, 2...

RESET

CREATE



PROJECT BOARD

CREATE ISSUES

CREATE PROJECT

Create Project

Project Name

Owner

Project Start Date

Project End Date

RESET

CREATE



PROJECT BOARD

CREATE ISSUES

CREATE PROJECT

Project Board / Issue Details


HU 22.0 Angular Track

Lorem Ipsum is simply dummy text of the printing and typesetting industry.



Description :

Lorem Ipsum is simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of type and scrambled it to make a type specimen book.

Details

Type :  Bug

Sprint : CW_21

Tags : Priority : 

Story Points : 3

Comments Add Comment

Lorem ipsum is simply dummy text of the printing and typesetting industry.

Posted on: 31-01-2022

Added by: Pushpa Raj

Lorem ipsum is simply dummy text of the printing and typesetting industry.

Posted on: 31-01-2022

Added by: Pushpa Raj

EDIT ISSUE

Status

To do

Assignee




Ravi Jain

Created On: 31-01-2022


Last Updated: 31-01-2022 | 4:30 PM

Details

Type :  Bug

Sprint : CW_21

Tags :  ANGULAR

Priority :  HIGH

Story Points : 3

Comments Add Comment

Write comment

POST

CANCEL

Lorem ipsum is simply dummy text of the printing and typesetting industry.

Posted on: 31-01-2022

Added by: Pushpa Raj



PROJECT BOARD

CREATE ISSUES

CREATE PROJECT

Project Board / View Insights

HU 22.0 Angular Track

Total Number of Issues: 08

TO DO

2

DEVELOPMENT

1

TESTING

3

COMPLETED

2

Status Bar



TO DO

DEVELOPMENT

TESTING

COMPLETED

Team Members

9 Members



Pushpa Raj

Engineering Management Master

Owner



Komal Sharma

Frontend Engineer

Member



Jatin Jain

Frontend Engineer

Member



Anjali Gupta

Frontend Engineer

Member



Rajesh Singh

Frontend Engineer

Member



Sneha Bapat

Frontend Engineer

Member



Kavita Agrawal

Frontend Engineer

Member



Manish K

Frontend Engineer

Member



Ravi Jain

Frontend Engineer

Member



Himanshu Singh

Frontend Engineer

Member