

# SOFTWARE MAINTENANCE AND EVOLUTION

# Project Proposal

## GROUP MEMBER

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**Team Philips**



# **Taskwise Management System**

Repository: <https://github.com/mouyuan123/Taskwise-management-system>

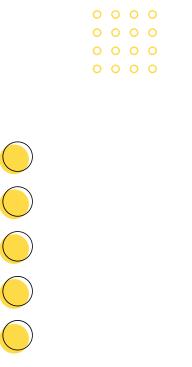
# MAIN FUNCTION

**Creation and assignment of  
projects and tasks for employees**

**A customer ticketing system**

**Employee KPI evaluation**

**A reporting module dedicated to  
top management**



# WEAKNESSES / PROBLEMS

## Input Validation

The system doesn't restrict the maximum characters a user can input.

## Documentation

The current documentations such as UML diagrams do not align with the latest version of the system.

## API Calling

Excessive API calls are made to obtain task details, project information, and user data.

## Real-Time Communication

Users have to manually refresh the page to see new notifications as there's no alert mechanism.

# COMPONENTS TO BE MAINTAINED



## Notification Component

This facilitates real-time notification alerts for users.



## Ticket Issuing Module

Allows clients to issue, view, and update tickets seamlessly.



## Task Assignment Module

Enables users to create, view, and edit tasks without redundant API calls.



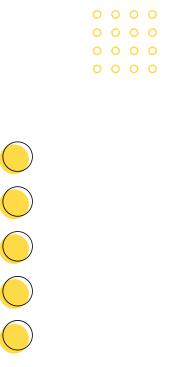
## Account Component

Provides functionality for users to modify their profile details.

• • • • •  
• • • • •  
• • • • •



# **Activities or Enhancements**



## **CORRECTIVE MAINTENANCE**

**(Wrong Output)**

### **Problem**

During the first time login of the users, they need to fill up and submit their personal details. However, they can bypass it by clicking outside of the form.

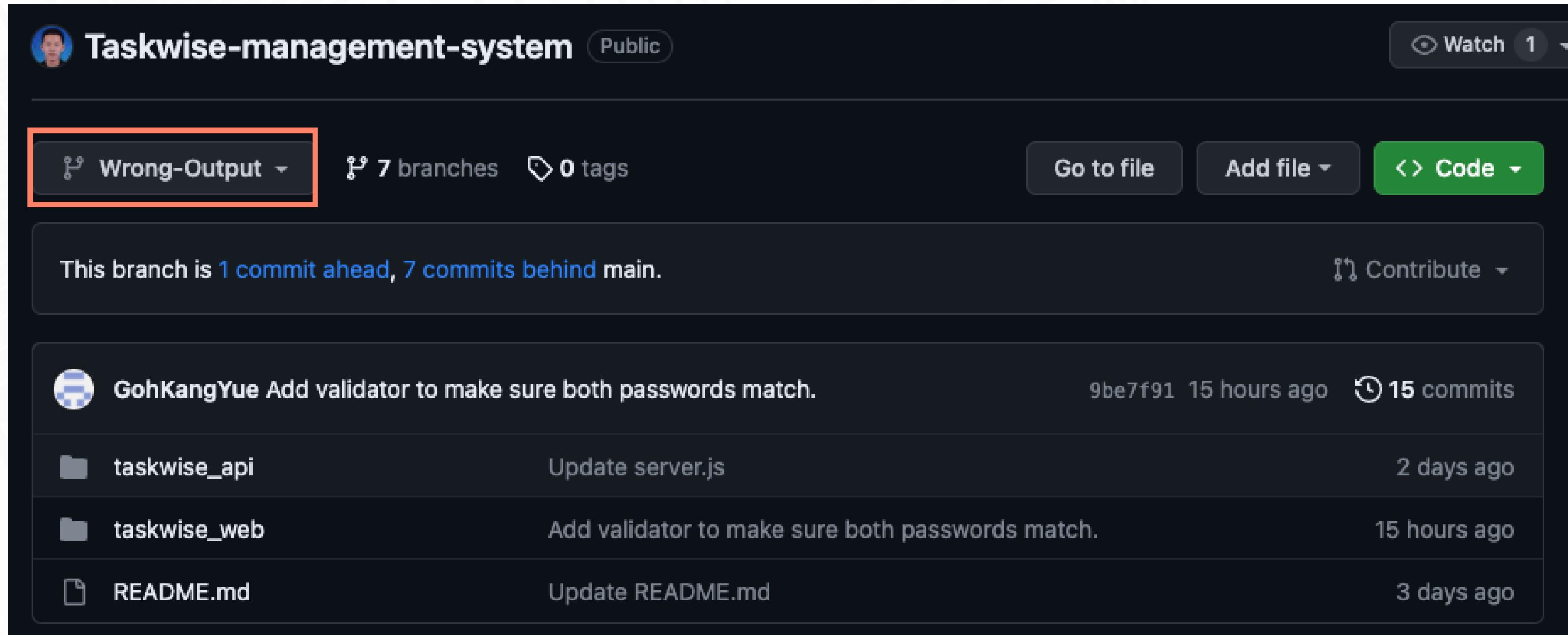
### **Solution**

- Make the “Submit” button available only when all the details are filled in correctly.
- Avoid hiding the form if the user clicks outside of the form.
- Close the form only when the user fills up and submit the form.



# CORRECTIVE MAINTENANCE

## (Wrong Output)



The screenshot shows a GitHub repository page for 'Taskwise-management-system'. The repository is public and has 7 branches and 0 tags. A branch named 'Wrong-Output' is highlighted with a red border. The main branch is 'main'. The repository has 15 commits from GohKangYue. The commits are:

- GohKangYue Add validator to make sure both passwords match. 9be7f91 15 hours ago 15 commits
- taskwise\_api Update server.js 2 days ago
- taskwise\_web Add validator to make sure both passwords match. 15 hours ago
- README.md Update README.md 3 days ago

This branch is 1 commit ahead, 7 commits behind main.



# CORRECTIVE MAINTENANCE

## (Wrong Output)

Commits

Wrong-Output ▾

- o- Commits on Nov 16, 2023
  - Add validator to make sure both passwords match.  
GohKangYue committed 16 hours ago
- o- Commits on Nov 14, 2023
  - Merge pull request #13 from mouyuan123/mouyuan123-patch-1 ...  
mouyuan123 committed 2 days ago
  - Update server.js  
mouyuan123 committed 2 days ago
  - Merge pull request #12 from mouyuan123/mouyuan123-patch-1 ...  
mouyuan123 committed 2 days ago
  - Update server.js  
mouyuan123 committed 2 days ago
- o- Commits on Nov 13, 2023
  - Update validator.ts  
mouyuan123 committed 3 days ago
  - Update layout.component.ts  
mouyuan123 committed 3 days ago
  - Update update-user-detail.component.html  
mouyuan123 committed 3 days ago
  - Update app.js  
mouyuan123 committed 3 days ago
  - Update middleware.js  
mouyuan123 committed 3 days ago



# CORRECTIVE MAINTENANCE

## (Wrong Output)



### Add Password Validator to Password and Confirm Password Field

Commit

Add validator to make sure both passwords match.

Wrong-Output

GohKangYue committed 18 hours ago

1 parent 919e7d1 commit 9be7f91

Showing 1 changed file with 23 additions and 3 deletions.

taskwise\_web/src/app/utils/validator.ts

```
@@ -1,6 +1,28 @@
1 import { AbstractControl, FormGroup, ValidationErrors, ValidatorFn } from
  "@angular/forms";
2 import { ROLE } from "./const";
3
4 + // ADD THIS VALIDATOR
5 + //? Check for More Than one field each time (Check on common ancestor control:
  FormGroup)
6 + /* Validators for making sure both passwords match to update the password*/
7 + export function MatchPassword(): ValidatorFn{
8 +   return (formGroup: FormGroup): ValidationErrors | null => {
9 +     const password = formGroup.get('password').value;
10 +    const confirmPassword = formGroup.get('confirmPassword').value;
11 +    if(!password || !confirmPassword) return null;
12 +    if(password.length === 0 || confirmPassword.length === 0) return null;
13 +    if(password !== confirmPassword){
14 +      return{
15 +        // Name of the error
16 +        InvalidPassword: {
17 +          // Contents of the error (JSON Format)
18 +          message: 'Passwords doesn\'t match',
19 +        }
20 +      }
21 +    }
22 +  }
23 +}
24 +
```



# CORRECTIVE MAINTENANCE

## (Wrong Output)



### Add Password Validator to Password and Confirm Password Field

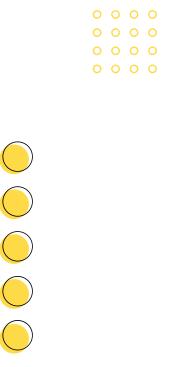
Showing 1 changed file with 23 additions and 3 deletions.

Split Unified

```
12 +     if(password.length === 0 || confirmPassword.length === 0) return null;
13 +     if(password !== confirmPassword){
14 +         return{
15 +             // Name of the error
16 +             InvalidPassword: {
17 +                 // Contents of the error (JSON Format)
18 +                 message: 'Passwords doesn\'t match',
19 +             }
20 +         }
21 +     }
22 +     return null;
23 + }
24 +
25 + */ Validators for making `joining_date` required if registering "ENGINEER || MANAGER" user */
26 export function isJoiningDateRequired(): ValidatorFn{
27     return (formGroup: FormGroup): ValidationErrors | null => {
28         /* Validators for making `joining_date` required if registering "ENGINEER || MANAGER" user */
29         export const atLeastOneFieldValidator: ValidatorFn = (control: FormGroup): ValidationErrors | null => {
30             const days = control.get('day').value;
31             const hours = control.get('hour').value;
32             const minutes = control.get('minute').value;
33             return days || hours || minutes ? null : { 'atLeastOneRequired': true };
34         }
35         return days || hours || minutes ? null : { 'atLeastOneRequired': true };
36     }
37 }
```

The code block shows a diff between two versions of a file. The top section adds a password validation logic. The bottom section removes the logic for validating the 'joining\_date' field and instead adds a validator for at least one of the time fields ('day', 'hour', 'minute'). Lines 24-31 are deleted, and lines 36-51 are added.





## **CORRECTIVE MAINTENANCE**

**(Absence of real-time requirements)**

### **Problem**

Whenever an user receives a notification, there's no alert displayed and the user needs to reload the page to see the latest notification.

### **Solution**

Implement real-time features to receive real-time notification.





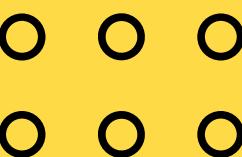
# CORRECTIVE MAINTENANCE

(Absence of real-time requirements)

Real-Time-Noti... ▾ 8 branches 0 tags Go to file Add file ▾ Code ▾

This branch is 6 commits ahead, 11 commits behind main. Contribute ▾

Author	Commit Message	Date	Commits
mouyuan123	4. Manage Connection between Real-Time Feature with Notification M...	yesterday	16 commits
	taskwise_api	2 days ago	
	taskwise_web	yesterday	
	README.md	2 days ago	





# CORRECTIVE MAINTENANCE

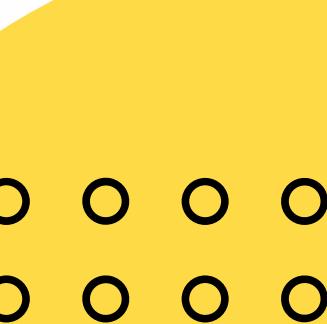
(Absence of real-time requirements)

Commits

Real-Time-Noti... ▾

- o- Commits on Nov 15, 2023
  - 4. Manage Connection between Real-Time Feature with Notification Modu... ...  
mouyuan123 committed yesterday
- o- Commits on Nov 14, 2023
  - 3. Build the Real-Time Connection at the Frontend  
mouyuan123 committed 2 days ago
  - 2. Set Up API for Real-Time Feature  
mouyuan123 committed 2 days ago
  - Update server.js  
mouyuan123 committed 2 days ago
  - Remove .env file that is exposed to public accidentally  
mouyuan123 committed 2 days ago
  - 1. Create Service to Manage Real-Time Notification  
mouyuan123 committed 2 days ago





# CORRECTIVE MAINTENANCE

## (Absence of real-time requirements)

```
      raise,
```

56 -         /* Tell all clients except of the "Initiator" (user logout just now) that he/she is offline (socket.broadcast.emit()) 57 -         socket.broadcast.emit('userOffline', removedUser._id); 58 -         //? Broadcast the list of "online" user 59 -         socket.emit('onlineUser', online_user.map(user => ({ name: user.name, _id: user._id }))); 60 -     } 61 - ); 62 - ); 63 - 64 -@@ -65,9 +74,12 @@ module.exports = { 65 - 66 -    sendNotification: function(notification, user_id) { 67 -        if(isUserOnline(user_id)){ 68 -            const formattedNotification = notificationTransform(notification, user_id); 69 -            //? Real-time emission of the notification to the relevant "ONLINE" user 70 -            io.to(getUser(user_id).socket_id).emit('notification', formattedNotification); 71 -        } 72 -    } 73 -}; 74 - 75 -    sendNotification: function(notification, user_id) { 76 -        if(isUserOnline(user_id)){ 77 -            const user = getUser(user_id); 78 -            if(user.socket_id.length > 0){ 79 -                const formattedNotification = notificationTransform(notification, user_id); 80 -                //? Real-time emission of the notification to the relevant "ONLINE" user 81 -                user.socket_id.forEach(socketId => io.to(socketId).emit('notification', formattedNotification)); 82 -            } 83 -        } 84 -    } 85 -}; 86 - 87 -
---



# CORRECTIVE MAINTENANCE

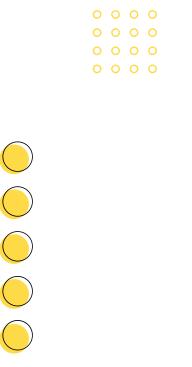
## (Absence of real-time requirements)

Showing 1 changed file with 35 additions and 1 deletion.

Split Unified

```
7 + const API_URL = environment.API_URL;
8 +
9 + export type OnlineUser = {
10 +   _id: string;
11 +   name: string;
12 + }
13
14 @Injectable({
15   providedIn: 'root'
16 })
17 +
18 export class RealTimeService {
19 + private socket;
20 + observable: Observable<string>;
21 + online_users: BehaviorSubject<OnlineUser[]>;
22 + online_users$: Observable<OnlineUser[]>;
23 +
24 + constructor() {
25 +   this.online_users = new BehaviorSubject<OnlineUser[]>([]);
26 +   this.online_users$ = this.online_users.asObservable();
27 +   this.socket = io(API_URL);
28 +   //? Broadcast the current online user
29 +   this.socket.on('onlineUser', (data: OnlineUser[]) => this.online_users.next(data));
30 + }
31 +
32 + //? Receive the real-time notification to the relevant user who's online
33 + onNewNotification(): any{
34 +   return new Observable<NotificationGetDTO | undefined>(observer => {
35 +     this.socket.on('notification', (data: NotificationGetDTO | undefined) => { observer.next(data); });
36 +   })
37 + }
38
39 + //? Emit active user to the server
40 + registerActiveUser(name: string, user_id: string): any{
41 +   this.socket.emit('newUser', { username: name, user_id });
42 + }
```





## PREVENTIVE MAINTENANCE

### Problem

When the users fill in the forms, the system doesn't validate the value of each field before submitting the form. (E.g., negative value for estimated completion time of a task).

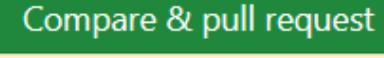
### Solution

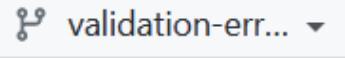
Validate each field of a form to make sure all the users' inputs are logical. Prompts error message whenever the inputs are invalid.

# PREVENTIVE MAINTENANCE

 Taskwise-management-system Public

 validation-error had recent pushes 16 minutes ago



 validation-err... ▾  7 branches  0 tags

 Go to file  Add file ▾  Code ▾

This branch is 3 commits ahead, 7 commits behind main.



 G3M1N199 Add whitespace and max length field validators 8f65350 16 minutes ago  17 commits

 taskwise\_api Update server.js 2 days ago

 taskwise\_web Add whitespace and max length field validators 16 minutes ago

 README.md Update README.md 3 days ago

 About

No description, website, or topics provided.

 Readme

 Activity

 0 stars

 1 watching

 0 forks

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 Releases

No releases published

[Create a new release](#)

# PREVENTIVE MAINTENANCE

## Commits

validation-err... ▾

### -o Commits on Nov 16, 2023

Add whitespace and max length field validators

G3M1N199 committed 8 minutes ago

8f65350  

Add negative time and whitespace validators

G3M1N199 committed 2 hours ago

12e3b8c  

Validate for whitespace

G3M1N199 committed 2 hours ago

a9b6345  

# PREVENTIVE MAINTENANCE

Showing 1 changed file with 11 additions and 2 deletions.

taskwise\_web/src/app/modules/account/add-user/add-user.component.html

```
@@ -23,7 +23,12 @@ <h3 class="fw-bolder m-0">Add User</h3>
23     <div *ngIf="userRole == ROLE.CLIENT" class="row mb-6">
24         <label class="col-lg-4 col-form-label fw-bold fs-6">Company</label>
25         <div class="col-lg-8 fv-row">
26             -             <input formControlName="company_name" type="text" class="form-control form-control-lg form-control-solid" placeholder="Please enter company / organization name" name="email"/>
27         </div>
28     </div>
29     <div class="row mb-6">
@@ -35,7 +40,11 @@ <h3 class="fw-bolder m-0">Add User</h3>
35         <div class="row mb-6">
36             <label class="col-lg-4 col-form-label required fw-bold fs-6">Name</label>
37             <div class="col-lg-8 fv-row">
38             -                 <input formControlName="name" type="text" class="form-control form-control-lg form-control-solid" placeholder="Please enter name..." name="name" />
39         </div>
40     </div>
41     <!-- Select Joining Date of the Engineer -->
42
43
44
45
46
47
48
49
50
```



# PREVENTIVE MAINTENANCE

Showing 1 changed file with 14 additions and 1 deletion.

Split Unified

```
taskwise_web/src/app/utils/validator.ts
```

@@ -21,11 +21,24 @@ export function isJoiningDateRequired(): ValidatorFn{  
 21 }  
 22 }  
 23  
 24 + export const noNegativeTimeValidator: ValidatorFn = (control: FormGroup): ValidationErrors | null => {  
 25 + const days = control.get('day').value;  
 26 + const hours = control.get('hour').value;  
 27 + const minutes = control.get('minute').value;  
 28 + return days >= 0 && hours >= 0 && minutes >= 0 ? null : { 'negativeTimeValue': true };  
 29 + }  
 30  
 31 export const atLeastOneFieldValidator: ValidatorFn = (control: FormGroup): ValidationErrors | null =>  
 32 {  
 33 const days = control.get('day').value;  
 34 const hours = control.get('hour').value;  
 35 const minutes = control.get('minute').value;  
 36 return days || hours || minutes ? null : { 'atLeastOneRequired': true };  
 37 +  
 38 + //? Customized to check for ONLY ONE field each time  
 39 + // Custom validator for checking if the name contains only whitespace  
 40 + export function noWhitespaceValidator(control: AbstractControl): ValidationErrors | null {  
 41 + if((control.value || '').length == 0) return null;  
 42 + const ContainsWhiteSpaceOnly = (control.value || '').trim().length === 0;  
 43 + return ContainsWhiteSpaceOnly ? { 'ContainsWhiteSpaceOnly': true } : null;  
 44 + }





# PREVENTIVE MAINTENANCE

Showing 1 changed file with 12 additions and 2 deletions.

Split Unified

```
@@ -5,6 +5,7 @@ import { AuthService } from '../../../../../auth';
 5 import { MessageService } from 'primeng/api';
 6 import { ROLE } from 'src/app/utils/const';
 7 import { ToastAlertService } from 'src/app/Services/toast-alert.service';
 8
 9 @Component({
10   selector: 'app-add-user',
11
12
13 @@ -47,7 +48,11 @@ export class AddUserComponent implements OnInit, OnDestroy {
14   ],
15   name: [
16     '',
17     Validators.compose([Validators.required])
18   ],
19   email: [
20     '',
21
22
23 @@ -67,7 +72,12 @@ export class AddUserComponent implements OnInit, OnDestroy {
24   ],
25   ],
26   joining_date: [''],
27   company_name: ['']
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51 + Validators.compose([
52 + Validators.required,
53 + Validators.maxLength(100), //https://stackoverflow.com/questions/30485/what-is-a-reasonable-
54 + noWhitespaceValidator,
55 + ])
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75 + company_name: [
76 + '',
77 + Validators.compose([
78 + noWhitespaceValidator,
79 + ])
80 ])
```





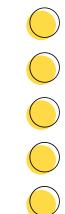
# ENHANCIVE MAINTENANCE

## Problem

Redundant frontend and backend code to serve similar purpose of requirements.  
(E.g., Repeated APIs call to get data of a project/task/ticket)

## Solution

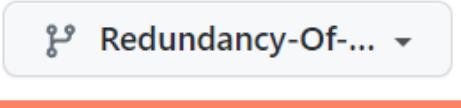
1. Implement 3 layers of APIs in the backend code.
  - Authentication middleware – Validate user and check his/her role.
  - Expected API call – Invoke different controllers based on the user's requirement from frontend and returns different set of results based on their role.
  - Decorator middleware – By utilizing the concept of Decorator Design pattern, we will add new behaviors to the results (if necessary) based on the users' need before returning it.
2. Delete redundant frontend codes and backend codes.



# ENHANCIVE MAINTENANCE

Authentication middleware – Validate user and check his/her role.

 Taskwise-management-system Public

 Redundancy-Of... ▾  7 branches  0 tags  Go to file Add file ▾  Code ▾

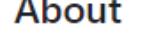
This branch is 3 commits ahead, 7 commits behind main. 

 **jylim1001** Delete redundant codes for isAuthorized function 59f5ea5 5 hours ago  17 commits

 taskwise\_api  Delete redundant codes for isAuthorized function 5 hours ago

 taskwise\_web  Update validator.ts 3 days ago

 README.md  Update README.md 3 days ago

 About  
No description, website, or topics provided.

 Readme

 Activity

 0 stars

 1 watching

 0 forks

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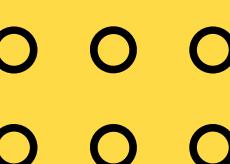
# ENHANCIVE MAINTENANCE

Commits

Redundancy-Of... ▾

- Commits on Nov 16, 2023
  - Delete redundant codes for isAuthorized function**  
jylim1001 committed 1 minute ago Copy 59f5ea5 🔗
  - Add a new function to ensure authorized access based on its validity.**  
jylim1001 committed 50 minutes ago Copy a32eeb2 🔗
  - // imports isAuthorized function from the './utils/middleware' module**  
jylim1001 committed 1 hour ago Copy 80e3c4e 🔗





# ENHANCIVE MAINTENANCE

## Commit

// imports isAuthorized function from the './utils/middleware' module

[Browse files](#)

Redundancy-Of-Frontend-And-Backend-Code

jylim1001 committed 11 minutes ago

1 parent 919e7d1 commit 80e3c4e

Showing 1 changed file with 2 additions and 0 deletions.

[Split](#) [Unified](#)

taskwise\_api/app.js

...

@@ -23,6 +23,8 @@ const { job } = require('./utils/job-schedule');

23 var corsOptions = { origin: true };

24

25 // Middleware

26 app.use(cors(corsOptions));

27

23

24 var corsOptions = { origin: true };

25

26 + // imports isAuthorized function from the './utils/middleware' module

27 + const { isAuthorized } = require('./utils/middleware');

28

29 // Middleware

30 app.use(cors(corsOptions));

# ENHANCIVE MAINTENANCE

Showing 1 changed file with 25 additions and 1 deletion.

taskwise\_api/utils/middleware.js

```
@@ -14,8 +14,32 @@ const { transformUnreadChat, getWorkingHourPerMonth, transformToFixedDouble } =
14  require('dotenv').config()
15
16
17 -
18 // MIDDLEWARE
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
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41
42
43
44
45
```

The code block shows a diff of a single file, middleware.js. The left side shows the original code with a red background for deleted lines (17-18). The right side shows the updated code with a green background for added lines (17-45). A red box highlights the new authorization logic starting at line 18. The code implements JWT verification and session expiration handling.

```
@@ -14,8 +14,32 @@ const { transformUnreadChat, getWorkingHourPerMonth, transformToFixedDouble } =
14  require('dotenv').config()
15
16
17 // MIDDLEWARE
18 + exports.isAuthorized = (req, res, next) => {
19 +   // Header names in Express are auto-converted to 'lowercase' (from `HttpInterceptors` of frontend)
20 +   let token = req.headers['x-access-token'] || req.headers['authorization'];
21 +
22 +   // Remove Bearer from string
23 +   token = token.replace(/^Bearer\s+/, "");
24 +
25 +   if (token) {
26 +     jwt.verify(token, 'secretKey', (err, decoded) =>
27 +     {
28 +       if (err) {
29 +         // Unauthorized access is blocked and returned to the frontend
30 +         return res.status(401).json({ message: "Unauthorized Access Found" });
31 +       }
32 +       // The token is valid and safe (Append the `user role` through this middleware)
33 +       req.user = decoded.user;
34 +       //? next() => Move on to the next middleware to process the request
35 +       next();
36 +     });
37 +   }
38 +   else {
39 +     return res.status(401).json({ message: "Session Expired. Please Login Again." });
40 +   }
41 + }
42 +
43 + exports.checkResetPasswordLinkActive = async(req, res, next) => {
44 +   try{
45 +     const jwtToken = req.params.token;
```



# ENHANCIVE MAINTENANCE



Reduce unnecessary codes and api calling which increase payload

Showing 4 changed files with 17 additions and 18 deletions.

Split Unified

taskwise\_api/routes/project.route.js

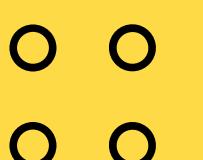
```
@@ -30,11 +30,11 @@ router.get('/getProject/:projectId', [ projectController.getProjectById, middleware.isAuthorized, middleware.checkRole ], projectController.paginateProject);
 30 router.get('/allProjects', projectController.getAllProject);
 31
 32 /* Get projects when user.role == "MANAGER"
 33 - router.get('/paginate', [ middleware.isAuthorized, middleware.checkRole ], projectController.paginateProject);
 34 /* Get projects of a specific "CLIENT || ENGINEER"
 35 - router.get('/paginate/:user_id', [ middleware.isAuthorized, middleware.checkRole ], projectController.paginateProject);
 36 /* "MANAGER" view the list of projects of a "CLIENT"
 37 - router.get('/viewClientProject/:user_id', [ middleware.isAuthorized, projectController.paginateProject ]);
 38
 39 router.get('/projectsForTask', projectController.getProjectsForTaskSelection);
 40
```

taskwise\_api/routes/task.route.js

```
@@ -21,9 +21,9 @@ router.get('/allTasks', taskController.getAllTask);
 21 /* Paginate tasks for "Project" page
 22 router.get('/paginate', [ taskController.paginateTask, middleware.countNumOfTicket ]);
 23 /* Get task of a specific "ENGINEER"
 24 - router.get('/paginate/:_id', [ middleware.checkRole, taskController.paginateTask, middleware.countNumOfTicket ]);
 25 //For flutter temp
 26 - router.get('/paginate/:_id', [ middleware.checkRole, taskController.paginateTask, middleware.countNumOfTicket ]);
 27
 28 /* Get task of a specific project in "Project-Details" page
 29 router.get('/taskOfProjectPaginate/:_id', [ taskController.paginateTask, middleware.countNumOfTicket ]);
```

taskwise\_api/routes/task.route.js

```
20
 21 /* Paginate tasks for "Project" page
 22 router.get('/paginate', [ taskController.paginateTask, middleware.countNumOfTicket ]);
 23 /* Get task of a specific "ENGINEER"
 24 + router.get('/paginate/:_id', [ taskController.paginateTask, middleware.countNumOfTicket ]);
 25 //For flutter temp
 26 + router.get('/paginate/:_id', [ taskController.paginateTask, middleware.countNumOfTicket ]);
 27
 28 /* Get task of a specific project in "Project-Details" page
 29 router.get('/taskOfProjectPaginate/:_id', [ taskController.paginateTask, middleware.countNumOfTicket ]);
```



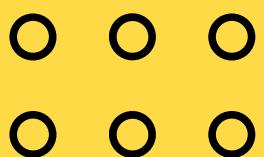
# REFORMATIVE MAINTENANCE

## Problem

Since the UML diagrams are not consistent with the system implementation, this will burden those who read the documentations of higher-level abstraction to know the design and implementation of the system.

## Solution

- Do reverse engineering to update the UML documentation / designs based on the implementations.
- Prepare an intuitive user manual relevant to each use case to make the users more understanding of the system.



# REFORMATIVE MAINTENANCE

The screenshot shows a GitHub repository page for 'Taskwise-management-system'. The repository is public and has 7 branches and 0 tags. The 'Code' tab is selected. A branch named 'houren-reforma...' is highlighted with a red box. The main content area displays a list of commits from 'zihui218' and 'sabb120'. The commits include updates to Documentation, taskwise\_api, taskwise\_web, README.md, and System Analysis & Design. The repository has 0 stars, 1 watching, 0 forks, and 21 commits. The 'About' section notes that there is no description, website, or topics provided. The 'Languages' section shows a breakdown: HTML (43.1%), TypeScript (28.4%), SCSS (17.8%), JavaScript (10.3%), and CSS (0.4%).

mouyuan123 / Taskwise-management-system

Type ⌥ to search

Code Issues 6 Pull requests Actions Projects 1 Security Insights

houren-reforma... 7 branches 0 tags

This branch is up to date with main.

zihui218 Merge pull request #15 from mouyuan123/zihui218-patch-2 ... sabb120 18 hours ago 21 commits

Documentation Add files via upload 19 hours ago

taskwise\_api Documentation Update server.js 2 days ago

taskwise\_web Update validator.ts 3 days ago

README.md Update README.md 3 days ago

System Analysis & Design Create System Analysis & Design 19 hours ago

README.md

## Taskwise-management-system

TaskWise Management System is a multi-faceted management tool designed specifically for SMEs. It emphasizes strategic decision-making, acknowledging that effective task management within an SME involves a careful balance of various factors. Tasks are primarily derived from the SME's top management objectives and customer interactions. These tasks are then assigned to employees, considering individual capabilities, experience, and existing workloads.

A unique feature of TaskWise is its sophisticated performance assessment system. It evaluates employees based on their success in task completion, customer reviews, and adherence to the service level agreement's specified

About

No description, website, or topics provided.

Readme

Activity

0 stars

1 watching

0 forks

Report repository

Releases

No releases published

Create a new release

Packages

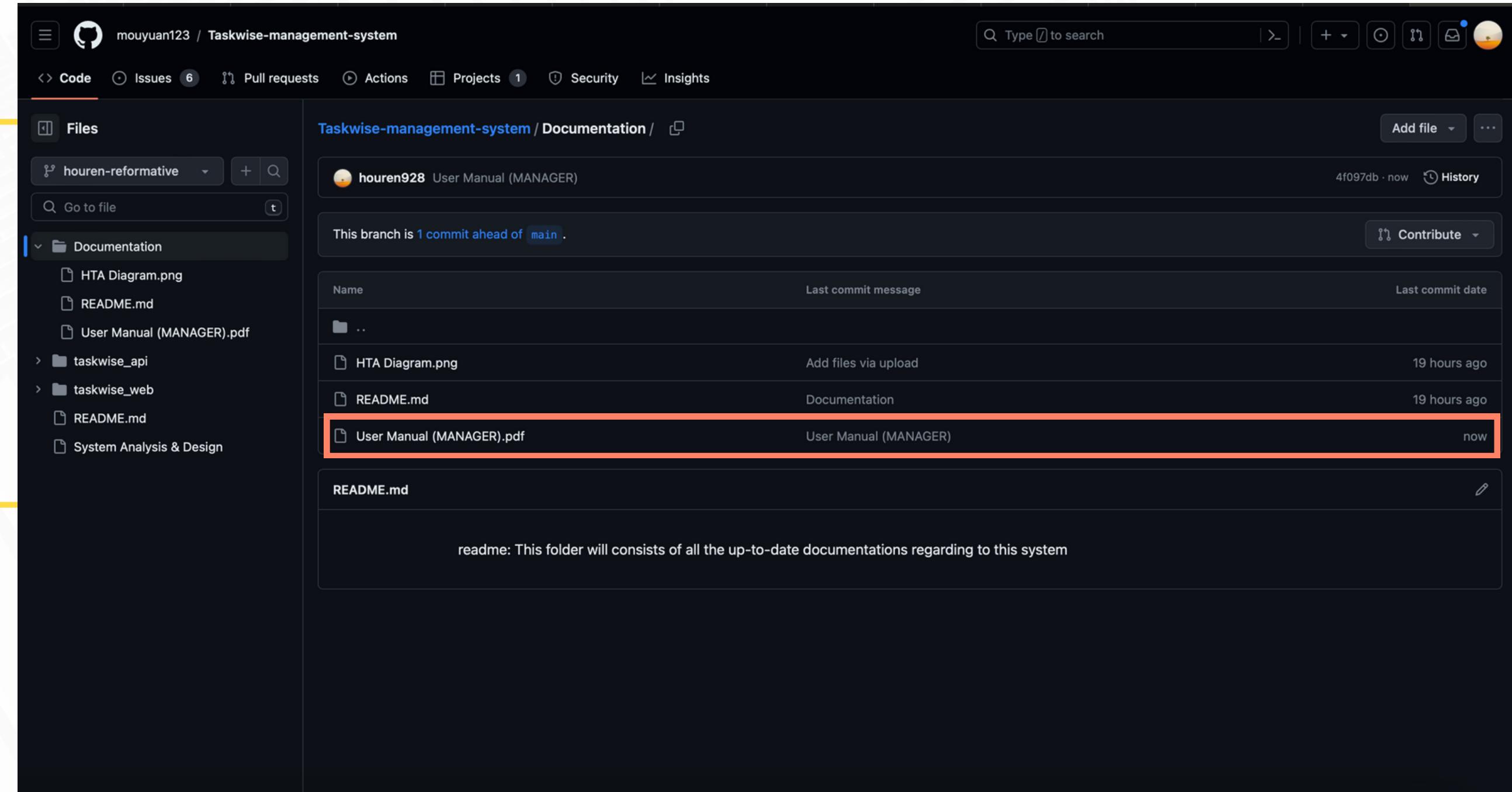
No packages published

Publish your first package

Languages

Language	Percentage
HTML	43.1%
TypeScript	28.4%
SCSS	17.8%
JavaScript	10.3%
CSS	0.4%

# REFORMATIVE MAINTENANCE



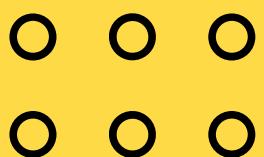
# USER MANUAL



Taskwise Management System

User Manual (Web Application)

MANAGER



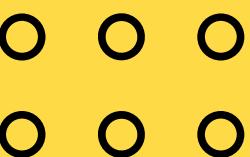
# ADAPTIVE MAINTENANCE

## **Problem**

The current UML diagrams are out-of-date.

## **Solution**

Replace the out-of-date documentations with up-to-date documentations based on the outcomes of the reformative activity.





# ADAPTIVE MAINTENANCE

mouyuan123 / Taskwise-management-system

Type / to search

Code Issues 6 Pull requests Actions Projects 1 Security Insights

Taskwise-management-system Public Watch 1 Fork 0 Star 0

zihui218-adap... 6 branches 0 tags Go to file Add file ▾ Code

This branch is 2 commits ahead of main. Contribute ▾

zihui218 Add files via upload ... 41757f5 1 minute ago 23 commits

Documentation Add files via upload 1 minute ago

taskwise\_api Update server.js 2 days ago

taskwise\_web Update validator.ts 3 days ago

README.md Update README.md 3 days ago

About  
No description, website, or topics provided.

Readme Activity 0 stars 1 watching 0 forks Report repository

Releases  
No releases published Create a new release



# ADAPTIVE MAINTENANCE

mouyuan123 / Taskwise-management-system

Type / to search

Code Issues 6 Pull requests Actions Projects 1 Security Insights

Files

zihui218-adaptive Add file ...

Go to file t

Documentation

- HTA Diagram.png
- README.md
- UML Diagram (Taskwise) - Use ...

taskwise\_api

taskwise\_web

README.md

Taskwise-management-system / Documentation /

Add file ...

zihui218 Add files via upload 41757f5 · 2 minutes ago History

This branch is 2 commits ahead of main. Contribute

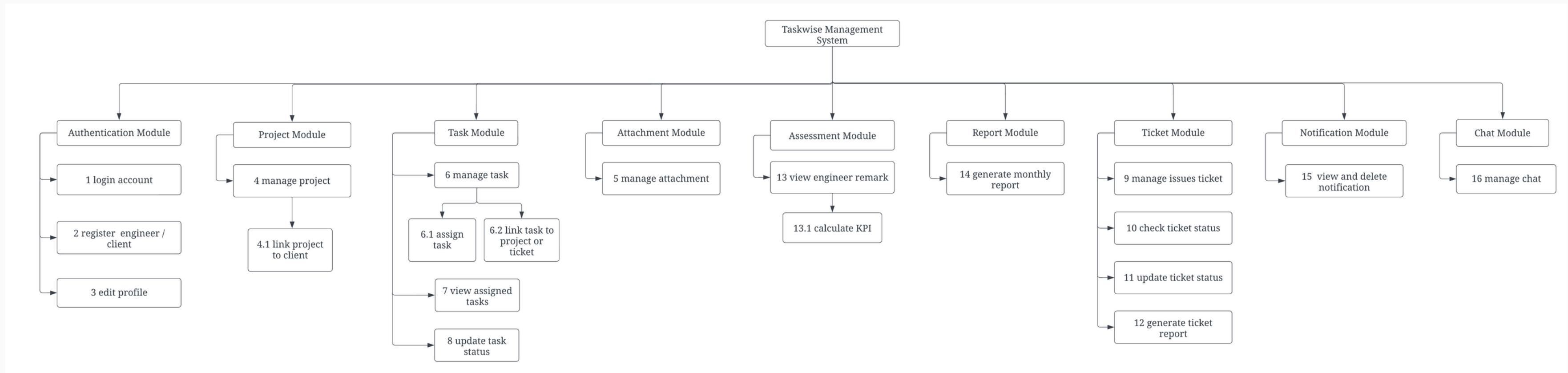
Name	Last commit message	Last commit date
..		
HTA Diagram.png	Add files via upload	17 hours ago
README.md	Documentation	17 hours ago
UML Diagram (Taskwise) - Use Case Diagram...	Add files via upload	2 minutes ago

README.md

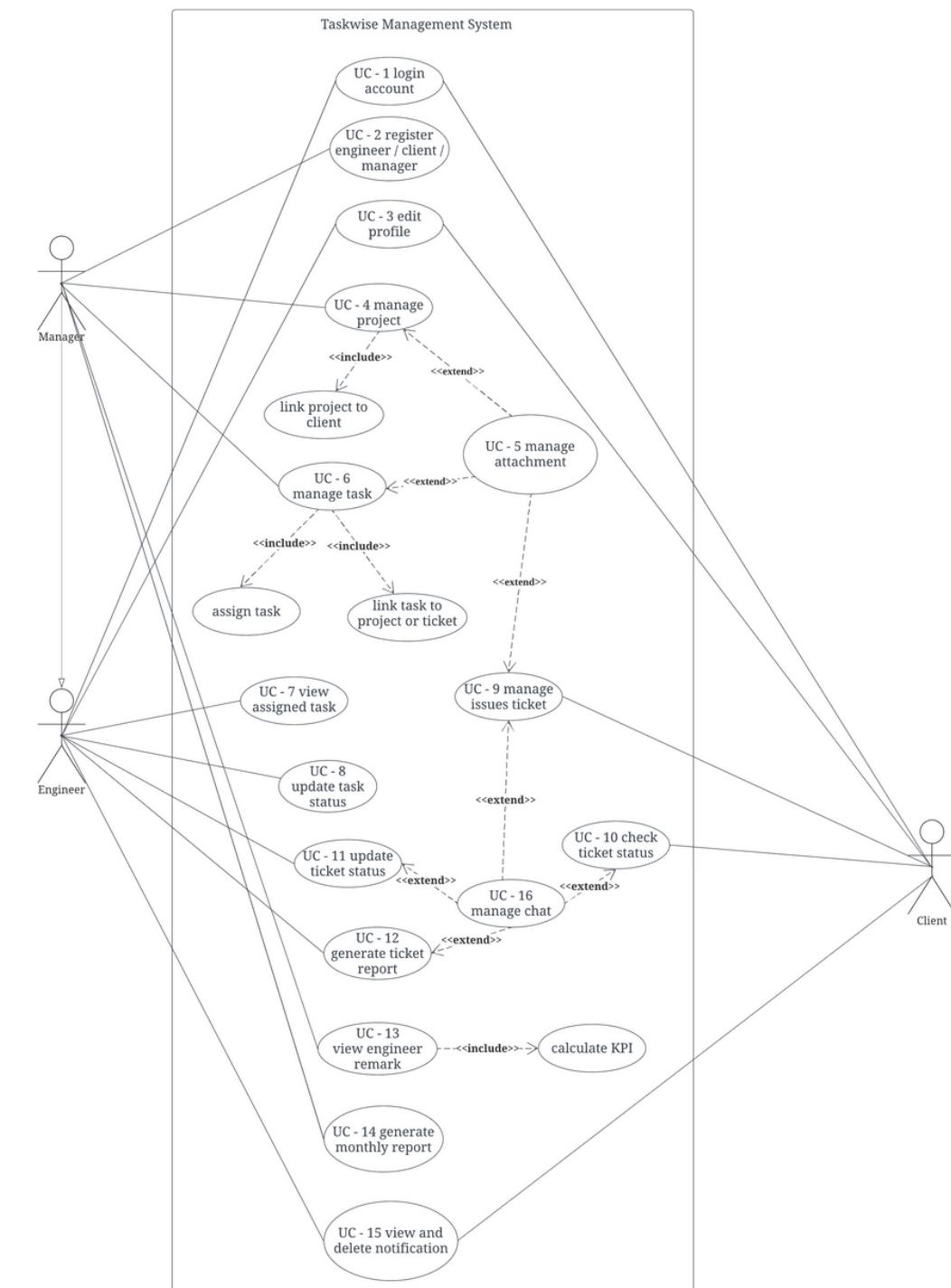
readme: This folder will consists of all the up-to-date documentations regarding to this system



# ADAPTIVE MAINTENANCE



# ADAPTIVE MAINTENANCE





# ADAPTIVE MAINTENANCE

mouyuan123 / Taskwise-management-system

Type ⌘ to search

Code Issues 6 Pull requests Actions Projects 1 Security Insights

## Comparing changes

Choose two branches to see what's changed or to start a new pull request. If you need to, you can also compare across forks or learn more about diff comparisons.

base: main ▾ ← compare: zhihui218-adaptive ✓ Able to merge. These branches can be automatically merged.

Discuss and review the changes in this comparison with others. [Learn about pull requests](#) Create pull request

2 commits 2 files changed 1 contributor

Commits on Nov 15, 2023

Delete System Analysis & Design  
zhihui218 committed 17 hours ago Verified cd8cdfe

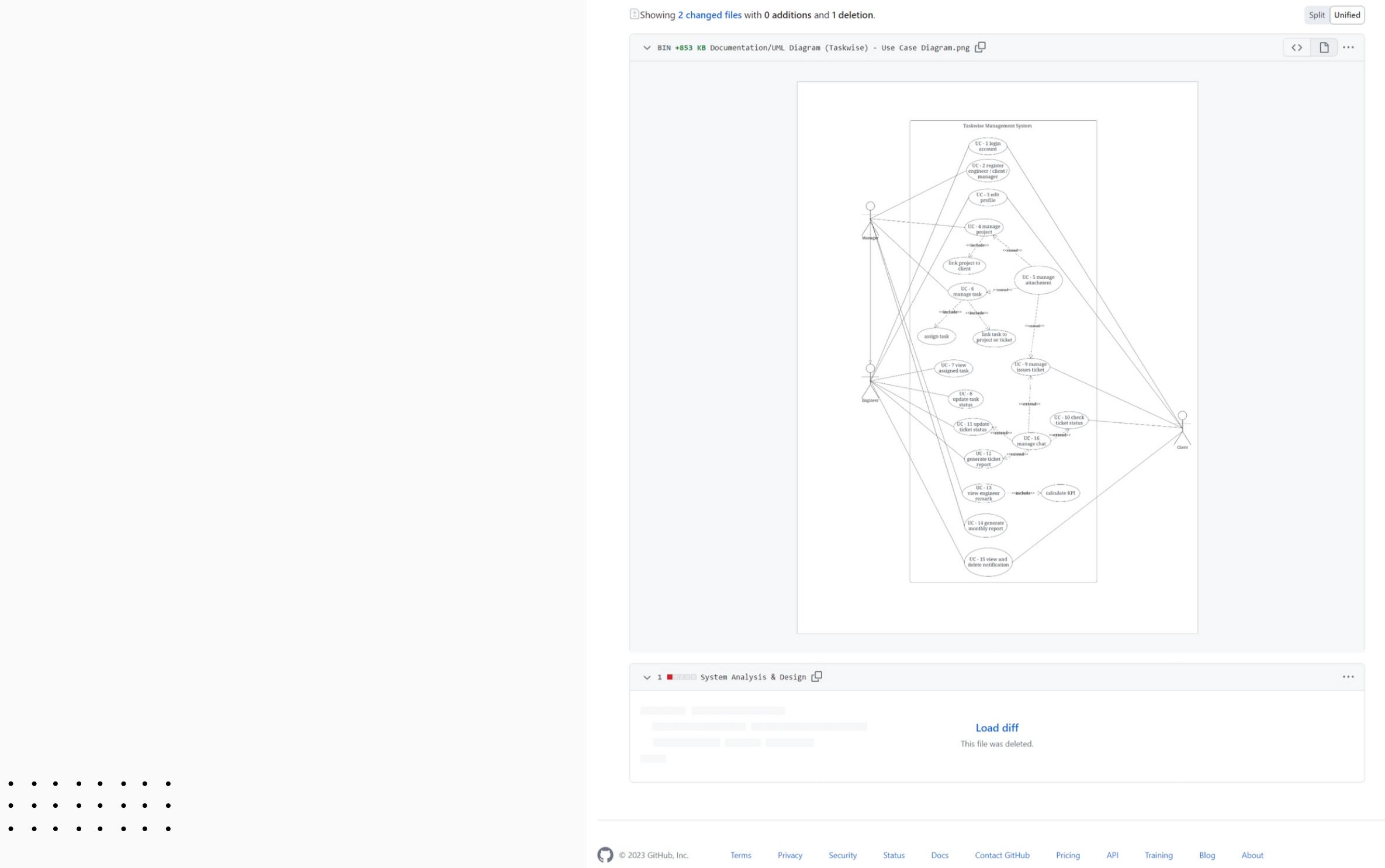
Commits on Nov 16, 2023

Add files via upload ...  
zhihui218 committed 1 minute ago Verified 41757f5

Showing 2 changed files with 0 additions and 1 deletion.

BIN +853 KB Documentation/UML Diagram (Taskwise) - Use Case Diagram.png

# ADAPTIVE MAINTENANCE



# **Screenshot of Kanban Board**

# KANBAN BOARD

WIF3005 Software Maintenance and Evolution

Dashboard + New View

Filter by keyword or by field

Discard Save

To Do 6

This item hasn't been started

- Taskwise-management-system #5  
Corrective maintenance (Wrong output)
- Taskwise-management-system #6  
Corrective Maintenance (Absence of real-time requirements)
- Taskwise-management-system #7  
Preventive maintenance
- Taskwise-management-system #11  
Enhancive Maintenance
- Taskwise-management-system #9  
Reformative Maintenance
- Taskwise-management-system #10  
Adaptive Maintenance

In Progress 8

This is actively being worked on

- Draft  
Make changes to code
- Draft  
Proposed change request
- Draft  
Review change and approve/reject change
- Draft  
Create workflow (CI file)
- Draft  
Merge file
- Draft  
Baseline (code, branch, etc)
- Draft  
Update dashboard

Done 12

This has been completed

- Draft  
Reformative Maintenance - Create User Manual for Manager Role
- Draft  
Enhancive Maintenance - Implement first layer: Authentication Middleware
- Draft  
Corrective Maintenance (Wrong-Output) - Add Password Validator to Password and Confirm Password Field
- Draft  
Corrective Maintenance (Absence of real-time requirements) - Set up the API connection for real-time feature
- Draft  
Corrective Maintenance (Absence of real-time requirements) - Establish connection between frontend and the server

Corrective Maintenance (Intentional)

To correct failures: processing failures (e.g., wrong output) and performance failures (e.g., absence of real-time requirements).

Preventive Maintenance

To prevent problems

+ Add item

# **Screenshot of Existing Issues**

# ISSUES

Code Issues 6 Pull requests Actions Projects 1 Security Insights

Filters ▾  Labels 9 Milestones 0 New issue

<input type="checkbox"/>	<input checked="" type="radio"/> 6 Open	<input checked="" type="checkbox"/> 0 Closed	Author ▾	Label ▾	Projects ▾	Milestones ▾	Assignee ▾	Sort ▾
<input type="checkbox"/>	<input checked="" type="radio"/>	Enhancive Maintenance	#11 opened 3 days ago by GohKangYue					
<input type="checkbox"/>	<input checked="" type="radio"/>	Adaptive Maintenance	#10 opened 3 days ago by GohKangYue					
<input type="checkbox"/>	<input checked="" type="radio"/>	Reformative Maintenance	#9 opened 3 days ago by GohKangYue					
<input type="checkbox"/>	<input checked="" type="radio"/>	Preventive maintenance	#7 opened 3 days ago by GohKangYue					
<input type="checkbox"/>	<input checked="" type="radio"/>	Corrective Maintenance (Absence of real-time requirements)	#6 opened 3 days ago by GohKangYue					
<input type="checkbox"/>	<input checked="" type="radio"/>	Corrective maintenance (Wrong output)	#5 opened 3 days ago by GohKangYue					

# **Screenshot of GitHub Insight**

# INSIGHT



# **Screenshot of Branches Created**

# BRANCHES

Search branches... Overview Yours Active Stale All branches New branch

## Active branches

houren-reformative	Updated 1 minute ago by houren928	0   1	New pull request
validation-error	Updated 17 minutes ago by G3M1N199	7   3	New pull request
zihui218-adaptive	Updated 1 hour ago by zihui218	0   2	New pull request
Redundancy-Of-Frontend-And-Backend-Code	Updated 4 hours ago by jylim1001	7   3	New pull request
Wrong-Output	Updated 15 hours ago by GohKangYue	7   1	New pull request
Real-Time-Notifications	Updated yesterday by mouyuan123	11   6	New pull request



# THANK YOU



Presentation by Philips