



New Mexico State University

College of Arts and Sciences

Documentation

CS 581 - Advance Software Engineering

*User Story Management Tool*

**TEAM MEMBERS**

**SANUJ KUMAR**

**DHARMA TEJA BANDARU**

**HASAN AL-QUDAH**

**VINAY REDDY MAREDDY**

**CARL WILLIAMS**

## **Introduction:**

This tool is intended to provide an end to end tracking of work done inside the project both for individual developers and managers as well. The tracking is done mainly in the form of User stories where in managers or people in similar level in the project assign requirements to developers in the form of user stories. In software product development at industrial level user stories are a formal way of describing the tasks that are to be done by the developers. User stories describe the functioning of the system as seen by the user or from the user perspective. User stories can also be used as metrics to judge the amount of work done by the developers and count the number of man hours of work done by each individual and whole team in each time period. User stories are useful in having an interactive communication with client as well as the users so that every concern of the user can be captured and put into the project. Though user stories are high level description of task in hand people in lower chain can break them down into sub user stories so that developers can work in small chunks of works at each time. Doing this it also helps to analyze how much amount of work is done on a user story or by any given developer.

This tool is useful to both developers and people at managerial role as well wherein developers can view their user stories and sign off the parts of the user story they have accomplished so that the amount of their work is reflected in progress bar and the same can be viewed by the managers to understand the status of the project. This tool gives a transparent status of the project to all the people involved in it. User stories are helpful in acceptance tests as well wherein user can verify if all has his intentions have been properly captured and put together so that he can test it. Especially if we are following the Agile methodology it becomes even more important because here customers are more important and whatever the changes, they have at each point have to be captured.

## **Motivation for the Project:**

The team's thought was to implement something that is used at industrial level and would be meaningful to the whole team as well. We selected this idea of user story management tool as it covers the concept of user stories as well as the general flow of how the tasks are allocated/shared between the team and how the whole thing is viewed by people at higher level like people at managerial level. This tool we thought would be widely used in the industrial level when we start working. It gives us a chance to work on ever changing user stories which is the norm in the industrial level especially working in Agile models. We wanted to develop this project as a web application and hence everyone in the team would get a chance to work with client and server-based models and new technologies like Node Js, React Js, Axios etc.

## Technologies Used:

In this Project we have used **React Js** for the front end and **Node Js** for the back end. We have used **MySQL** as the database and Axios for integration process. Since NodeJS interprets the scripts directly into machine code it is easy to implement the program in an efficient manner. Also, there is abundant amount of help in the online community which has prompted us to use NodeJS. MySQL is being used vastly and most of the team members are well equipped for coding using MySQL and hence we have decided to use MySQL as our database.

For each developer we have 4 different tabs which represent the past, present, future user stories that are specific for the developer and the 4<sup>th</sup> tab includes the tasks that must be done under support testing. For individual in managerial role they have the access levels to see all the user stories and to make changes in them.

## Requirements Specifications (As user stories) :

1. As a developer, I want to see all my past, present, future user stories listing so that I can work on my user stories.
2. As a manager, I want to see all the user stories that my team worked/working/going to work on so that I can view, edit, delete (Admin Access) them.
3. As a developer, I want to see all the sub-user stories for a given user story in my listing so that I can work on individual components of the user story.
4. As a developer, I want to see all my tasks under support testing so that I can take necessary action on them.
5. As a manager, I want to see all the support testing tasks so that I can get a hang on how many tasks are completed/pending and also to allocate support testing tasks to members in my team.
6. As a developer, I will need to see the progress bar, Estimated time at which the user story would be completed
7. As a Manager, I will need a progress bar, ETA so that I can ensure that due dates are met by the team.
8. As a developer, I have to either login or register so that I can view my tasks.
9. As a Manager, I have to login so that I can see all the users stories that my team is working on.

Past ,Present, Future User Stories

**As a developer**

**I want** to see all my past, present, future user stories listing  
**so that** I can work on my user stories.

Add, Edit, View, Delete User Stories

**As a manager**

**I want** to see all the user stories that my team worked/working/going to work on  
**so that** I can add, view, edit, delete them

Sub-user Stories

**As a developer**

**I want** to see all the sub-user stories for a given user story in my listing  
**so that** I can work on individual components of the user story.

Support Testing

**As a developer**

**I want** to see all my tasks under support testing  
**so that** I can take necessary action on them.

Pending/Completed tasks

**As a manager**

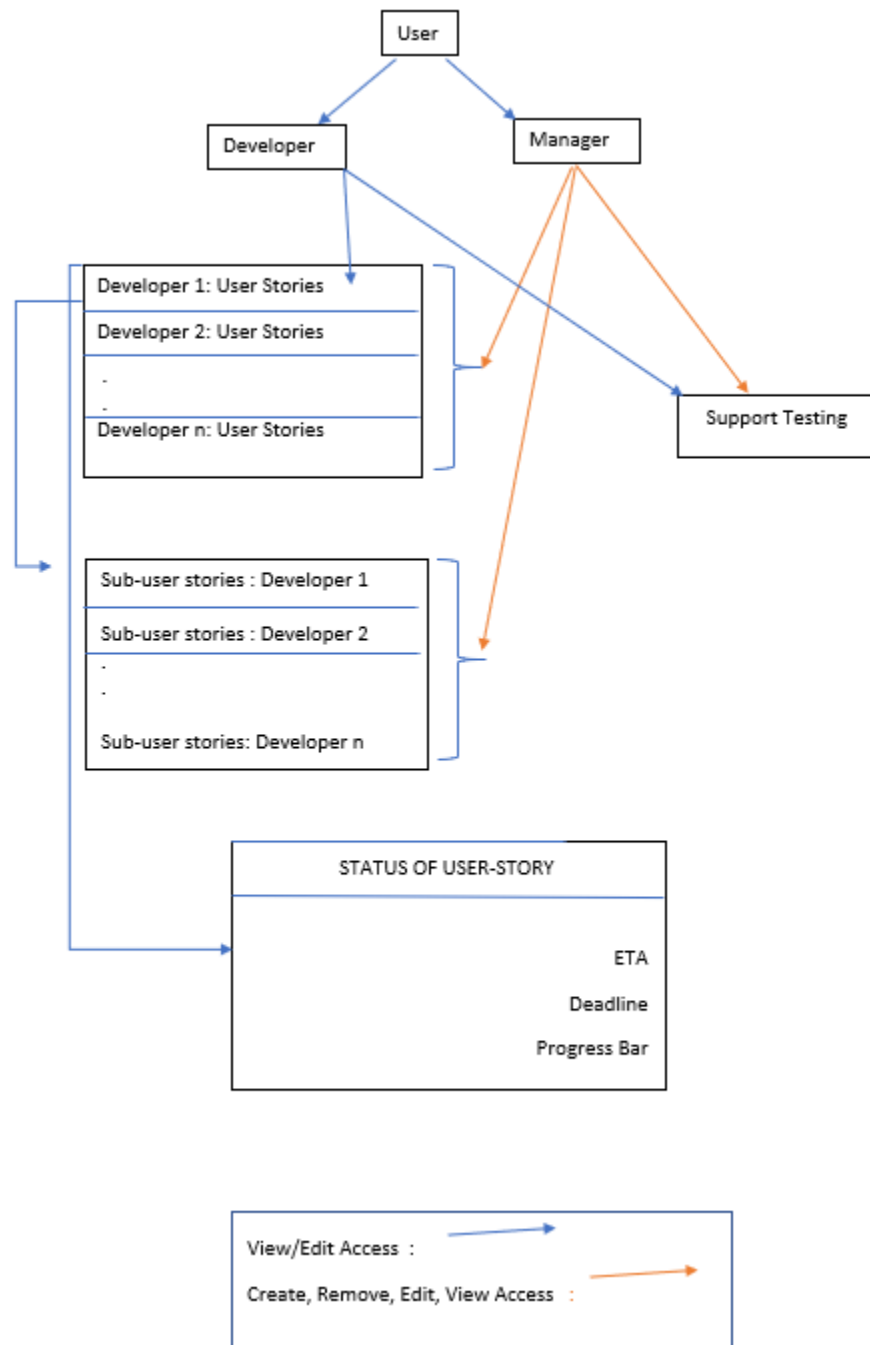
**I want** to see all the support testing tasks  
**so that** I can get a hang on how many tasks are completed/pending

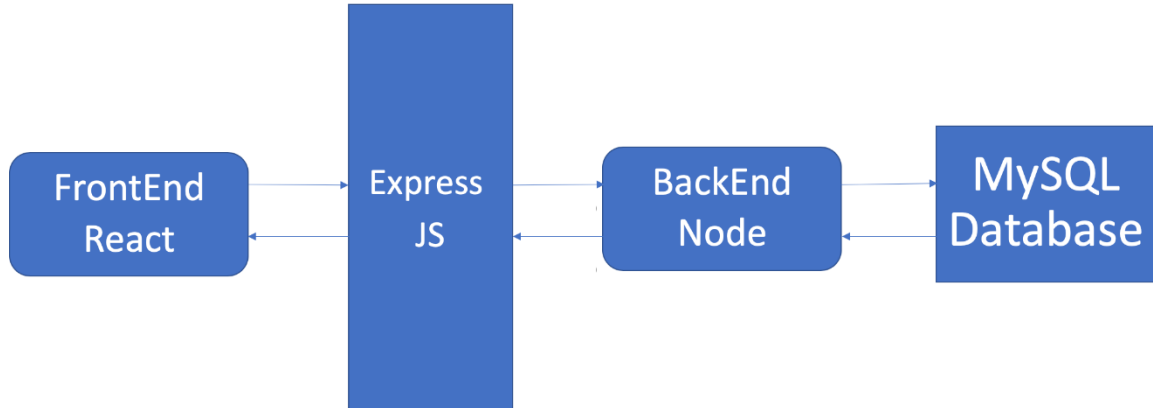
Report - Status, Progress , ETA

**As a developer**

**I will** need to see progress bar, deadlines, Estimated time  
**at which** the user story would be completed at my speed

### Architecture Diagram:





### **Project Outline Followed:**

- 1) Discuss on all the requirements that we need do as a part of the project and discuss what requirements would suit the tool.
- 2) Discuss about the technologies we need to use as a part of the project.
- 3) Design tabular schema for the project.
- 4) Design user login and register modules and integrate backend and front-end codes.
- 5) Design all the requirements as decided by the team i.e. both the front and back end components. Also, we have altered the table schema to meet the requirements. We have used **Axios** for integration.
- 6) Performed manual testing on all individual modules and integrated them so that we have an incremental model at each interval of 2 weeks.

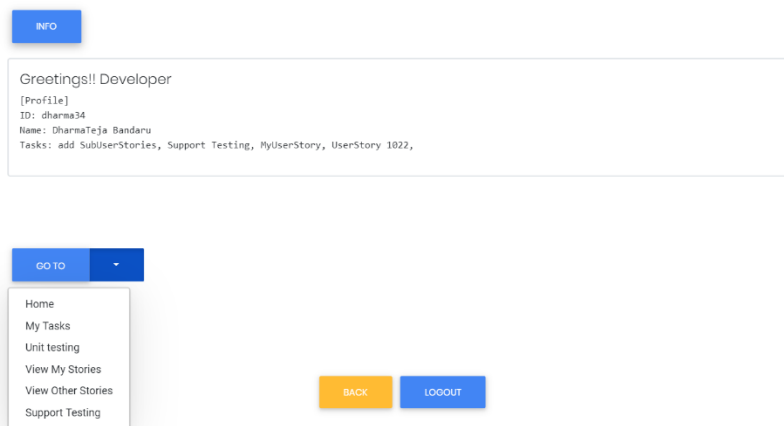
### **Features of Tool:**

- 1) User if a developer or manager can either login into the tool or register if he is not used the tool previously.
- 2) User( developer) can view his details and then navigate to a page where he can view his past, present and future user stories.
- 3) User ( developer) can view all the tasks listed to him under support testing.
- 4) When manager is logged in, he can view, edit, delete user stories of all developers.
- 5) Manager has authority to assign support testing stories to each developer.

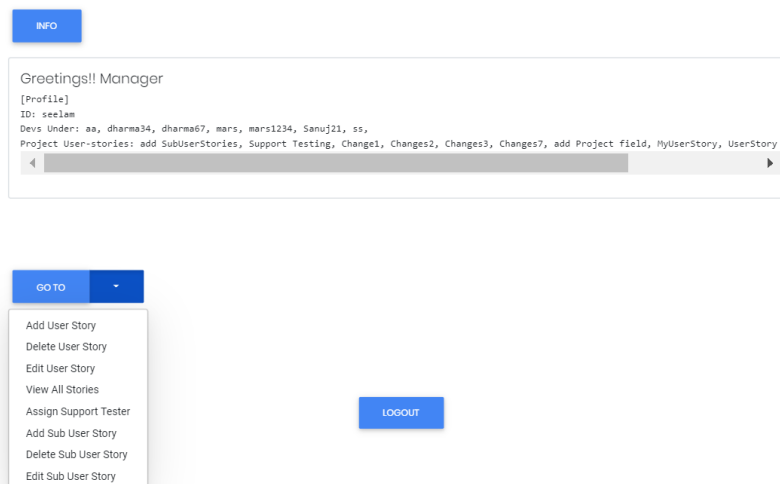
- 6) Developers will be able to see all the sub user stories for each user story and he can also view the amount of progress he has done in each user stories.
- 7) There is a progress bar to see how much work is done and there is ETA.
- 8) Manager will also be able to see all the sub user stories if he wants to make any changes and if he wants to see and progress bars.

## Design

### Dashboard - User



### Dashboard – Developer



## User Stories (Past, Present, Future) - Developer

100

ID: 10 > 11.00

User Story - UserStory 1022

As a user ...10 I want to... 1022 So that I....10

SUB-USER STORIES --

medium

Analyzed

Coded

Tested

☒ Analysis

☒ Coding

☒ Testing

50/50 50/50

ID: 11 > 12.00

User Story - Hello User

As I So

SUB-USER STORIES --

high

☒ Analysis

☐ Coding

☐ Testing

50/50 50/50

ID: 12 > 2.00

User Story - How are you

As I So ...

SUB-USER STORIES --

medium

☒ Analysis

☒ Coding

☐ Testing

Status

PAST

PRESENT

FUTURE

SUPPORT TESTING

Project ID: 1 ETC: 140.00  
Manager : seelam % Completion 82.03

Status

PAST

PRESENT

FUTURE

SUPPORT TESTING

Project ID: 1 ETC: 140.00  
Manager : seelam % Completion 82.03

HOME

BACK

LOGOUT

HOME

BACK

LOGOUT

ID: 1 > 15.00

User Story - add SubUserStories

As a developer I want to add subuserstories So that we can select different subuserstories for any given userstories

ANALYSIS: COMPLETED

medium

ID: 2 > 15.00

User Story - Support Testing

As a developer I want a feature supportTesting So that I can do support testing 25% of my time

ANALYSIS: COMPLETED

high

ID: 8 > 9.00

User Story - MyUserStory

As a user...8 I expect...8 So that ...8

ANALYSIS: COMPLETED

low

ID: 10 > 11.00

User Story - UserStory 1022

As a user ...10 I want to... 1022 So that I....10

ANALYSIS: COMPLETED

medium

Status

PAST

PRESENT

FUTURE

SUPPORT TESTING

Project ID: 1 ETC: 140.00  
Manager : seelam % Completion 82.03

HOME

BACK

LOGOUT



## Testing

### Test Case 1 :

|                        |  |
|------------------------|--|
| Performed On           | Signup Module  |
| User Story description | As a user he should be to signup so that he can start working on user stories                            |
| Acceptance Criteria    | When a user tries to sign up validate if his username is already present and throw an error accordingly. |
| Priority Level         | High   |
| Actual Test Result     | <i>success</i>   |
| Expected Test Result   | User if present error should be thrown else user should be entered into the database                     |
| Comments               | Signup module will be released once the testing is done  |

### Test Case 2 :

|                        |   |
|------------------------|---|
| Performed On           | Sign In Module  |
| User Story description | As a user I want to sign so that I can check my user stories.   |
| Acceptance Criteria    | When user tries to login his username and password should be validated, and if user exists should be directed to his user stories else an error message.  |
| Priority Level         | High  |
| Actual Test Result     | <i>success.</i>   |
| Expected Test Result   | User's username and password have to be validated and if the user exists in the user table then he has to be shown his user stories else error message showing invalid credentials or no existing user message has to be displayed. |
| Comments               | User story 1 will be released once the testing is done  |

|              |              |
|--------------|--------------|
| Performed On | User Story 1 |
|--------------|--------------|

|                        |  |
|------------------------|--|
| User Story description | As a developer, I want to see all my past, present, future user stories listing so that I can work on my user stories. |
| Acceptance Criteria    | As a user he should be able to view the listing of his user stories  |
| Priority Level         | High   |
| Actual Test Result     | <i>success</i>   |
| Expected Test Result   | User if he is logged in if he has to have a view of all his user stories.  |
| Comments               | User story 1 will be released once the testing is done   |

**Test Case 3 :**

**Test Case 4:**

|                        |  |
|------------------------|--|
| Performed On           | User Story 1   |
| User Story description | As a developer, I want to see all my past, present, future user stories listing so that I can work on my user stories.   |
| Acceptance Criteria    | As a developer, he should not be able to edit his user stories since he does not have access                             |
| Priority Level         | High   |
| Actual Test Result     | <i>success</i>   |
| Expected Test Result   | User must not be able to edit the user story and he should only have view access. All the fields should be non-editable. |
| Comments               | User story 1 will be released once the testing is done   |

|              |              |
|--------------|--------------|
| Performed On | User Story 2 |
|--------------|--------------|

|                        |   |
|------------------------|---|
| User Story description | As a manager, I want to see all the user stories that my team worked/working/going to work on so that I can view, edit, delete (Admin Access) them. |
| Acceptance Criteria    | As a user If he is a manager he has to have access to all user stories in database of all developers under him.                                     |
| Priority Level         | High  |
| Actual Test Result     | <i>success</i>  |
| Expected Test Result   | User as a manager once logged in should be able to view all the user stories.   |
| Comments               | User story 2 will be released once the testing is done  |

**Test Case 5:**

**Test Case 6:**

|                        |   |
|------------------------|---|
| Performed On           | User Story 1  |
| User Story description | As a manager, I want to see all the user stories that my team worked/working/going to work on so that I can view, edit, delete (Admin Access) them. |
| Acceptance Criteria    | As a manager, he should have access to edit user stories of all developers and also to add new user stories.  |
| Priority Level         | High  |
| Actual Test Result     | <i>success</i>  |
| Expected Test Result   | Manager must be able to add new user stories and edit already existing ones.  |
| Comments               | User story 2 will be released once the testing is done  |

**Test Case 7:**

|                        |  |
|------------------------|--|
| Performed On           | User Story 3   |
| User Story description | As a developer, I want to see all the sub-user stories for a given user story in my listing so that I can work on individual components of the user story. |
| Acceptance Criteria    | Developer has to have access to view all his sub user stories for every user story assigned to him. He should not have again any edit accesses.            |
| Priority Level         | Moderate   |
| Actual Test Result     | <i>success</i>   |
| Expected Test Result   | Developer should be able to view all his sub user stories but not edit them.   |
| Comments               | User story 3 will be released once the testing is done   |

**Test Case 8:**

|                        |  |
|------------------------|--|
| Performed On           | User Story 4   |
| User Story description | As a developer, I want to see all my tasks under support testing so that I can take necessary action on them.  |
| Acceptance Criteria    | Developer should be able to view all the tasks assigned to him under support testing.  |
| Priority Level         | Moderate   |
| Actual Test Result     | <i>success</i>   |
| Expected Test Result   | Developer should view all the user stories that are assigned to him under support testing. He should also be able to view the support testing status of the tasks done by him. |
| Comments               | User story 4 will be released once the testing is done   |

**Test Case 9:**

|                        |   |
|------------------------|---|
| Performed On           | User Story 5  |
| User Story description | As a manager, I want to see all the support testing tasks so that I can get a hang on how many tasks are completed/pending. |
| Acceptance Criteria    | Manager has to view all the support testing tasks to check the status   |
| Priority Level         | Moderate  |
| Actual Test Result     | <i>success</i>  |
| Expected Test Result   | Manager view should contain al the support testing tasks irrespective of the developers.                                    |
| Comments               | User story 5 will be released once the testing is done  |

**Test Case 10:**

|                        |  |
|------------------------|--|
| Performed On           | User Story 6   |
| User Story description | As a developer, I will need to see the progress bar, deadlines, Estimated time at which the user story would be completed at my speed.                   |
| Acceptance Criteria    | Developer should be to view the progress bars deadlines and estimated time in which the project can be completed   |
| Priority Level         | High   |
| Actual Test Result     | <i>success</i>   |
| Expected Test Result   | Developer view should have the provision to view all the details like deadlines, status or progress bar and estimated time of completion of the project. |
| Comments               | User story 6 will be released once the testing is done   |

**Test Case 11:**

|                        |   |
|------------------------|---|
| Performed On           | User Story 7  |
| User Story description | As a Manager, I will need a progress bar, deadlines so that I can ensure that due dates are met by the team.                |
| Acceptance Criteria    | Manager view should contain details like deadlines, status or progress bar and estimated time of completion of the project. |
| Priority Level         | High  |
| Actual Test Result     | <i>success</i>  |
| Expected Test Result   | Manager view should contain all the details for submission details of the user story like progress bars, deadlines etc.     |
| Comments               | User story 7 will be released once the testing is done  |

**Test Case 12:**

|                        |   |
|------------------------|---|
| Performed On           | User Story 8  |
| User Story description | As a developer, I will need to have a provision to make comments for user stories and sub-user stories so that I can mention any comments if I have any issues. |
| Acceptance Criteria    | Developer should have a provision to give comments on his own user stories and sub user stories so that they can be viewed by higher authorities                |
| Priority Level         | Low   |
| Actual Test Result     | <i>success</i>  |
| Expected Test Result   | Developer should be able to log comments and the comments have to saved as well for further response.   |
| Comments               | User story 8 will be released once the testing is done  |

**Test Case 13:**

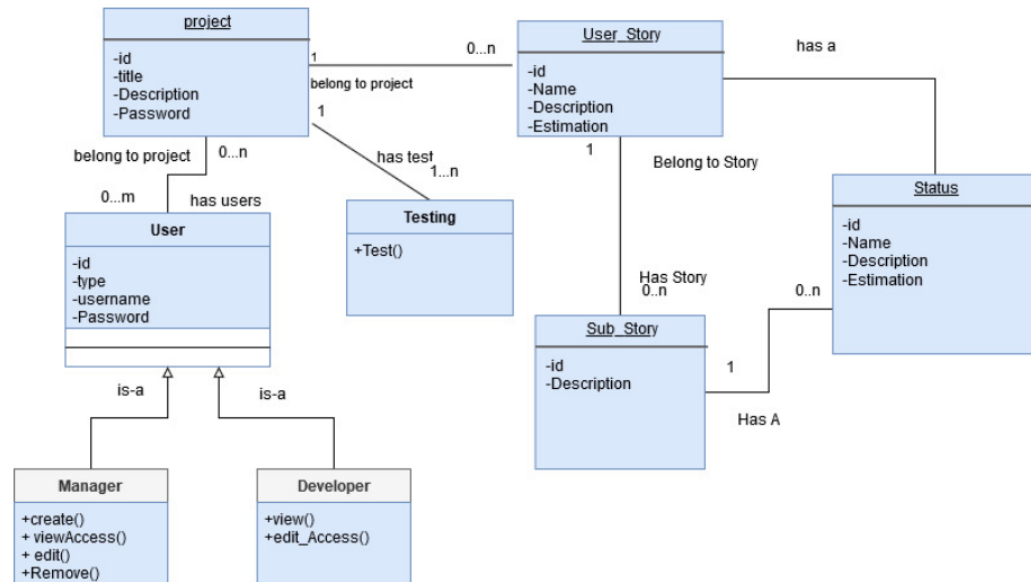
| Performed On           | User Story 9  |
|------------------------|---|
| User Story description | As a manager, I will need to have access and provision to see the comments made by all developers in the team so that I can help them out in their issues and collaborate with other teams. |
| Acceptance Criteria    | Manager view should contain access to read all the comments made by his developers and provision to re comment on them.   |
| Priority Level         | Low   |
| Actual Test Result     | <i>success</i>  |
| Expected Test Result   | Manager should be able to view the comments and he should be able to comment back if he wants to write anything back to developer.  |
| Comments               | User story 9 will be released once the testing is done  |

**Test Case 14:**

| Performed On           | Session Module  |
|------------------------|---|
| User Story description | When a user logs in, his information has to be saved because he information will be used until he logs out.       |
| Acceptance Criteria    | Username and password details should be stored until his session expires  |
| Priority Level         | Moderate  |
| Actual Test Result     | <i>success</i>  |
| Expected Test Result   | User details should be saved until he clicks log out. If he clicks log out then his credentials can be discarded. |
| Comments               | User story 8 will be released once the testing is done  |

## Class Diagram:

class diagram for user story



## Tool Description:

### Logged in as a Developer:

First you must register yourself as a user as a developer. Now he has to login as a developer to enter the tool. Once he logs in he will be directed to greetings page. In that page when we click on home it takes me back to login page. If you click on **my tasks**, then you can see all the tasks listed for them. There are tabs in which you can view your **past, present, future** user stories. You can also **view all** your **support stories**. When you click on a user story you will be able to see the sub user stories. If it is present user story, then you should have already completed the analysis work else it would be in future work. If the testing part is completed, then they will be pushed into the past user stories. The progress you made on user story is measured based on the number of sub user stories done by him for that user story along with the flag values of analysis and testing incrementing 10% each. **View my user stories** tab will allow you view all the user stories that you have. When you click on **view other stories** you will be given a chance to select the user and then when you click on submit you can view the user stories of that user selected. When you click on support testing tab then all the support testing tasks will be popped up. You can click on "mark as complete" button to complete sub user story. There is a status bar so that you can check the progress made. When you click on Logout button you will be directed to login page.



### **Logged in as a Manager:**

First you have register yourself as a manager. Then you should login yourself so automatically you will be noted as manager based on the role you have. Since you have registered yourself as manager you will have all privileges. After logging in you will be directed to a greetings page where you will can view information of your developers. If you click on **add user story**, then you if you add the details then you can add the user story and assign it a developer. You can **delete a user story** by giving the ID for that story. You can **edit the user story details** by selecting user story and entering what details you want to edit. By clicking on the view all stories since he is a manager, he can **view all the user stories** that **his team i.e. all the developers** have at that time. By clicking on **assign support tester**, he can assign the already completed user story to other developer to support test it and that user story will be shown to developer when logs under his support testing tasks.

The only constraint for this tool is that this tool operates on a local server.

We have placed the testing document for the user stories done by us in **the GitHub wiki page**.

### **Team Organization and Tasks Sharing:**

Our team consists of 5 members namely Sanuj Kumar, Dharma Teja Bandaru, Hasan Al-Qudah, Vinay Reddy Mareddy, Carl Williams. We have divided the work equally between us. We worked on Agile basis for the project developing increments of work for every limited set of time period. The main issues we had during the project where to fix up our requirements, Integrate the module for front end and back end. We have also done testing for our tool and the results look promising.

**Front end** – Sanuj Kumar & Hasan Al – Qudah.

**Back end** – Vinay Reddy Mareddy & Dharma Teja Bandaru.

**Testing** – The whole team.

### **Conclusion:**

User story management tool is comprehensive tool when used in full strength can be very helpful even at industrial level. We have tried and implemented most of the requirements which we thought that the tool should really have. Some of the highlighting features we have included in this tool are concept of user stories and sub user stories, concept of support testing, Progress bars and ETA, different views for developers and managers. We as a team have learnt how to work as team and complete the requirements in short turn arounds. We think that this tool that we have in hand now has the potential to turn into a real time tool if worked upon even more.