WPI SuiteRM

Requirements Management User Manual

Team 4: Dragon Sparkles

“To develop a requirements management tool which is lightweight and user friendly, and facilitates collaboration and organization for team projects”

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About WPI Suite Requirements manager

WPI Suite Requirements Manager is a tool for college computer science students and professors. Students can use the tool to manage the tasks assigned to them by their professors and organize them into iterations. Professors can use WPI Suite Requirements Manager to delegate projects to teams in the form of tasks, or requirements, indicating the priority of each requirement. For the list of full functionality, see the table of contents.

WPI Suite Requirements Manager was designed by Wonderproducts Inc, and was implemented by team Dragon Sparkles.

Wonder Products Inc. Stakeholders

Russel T. Customer, President and CEO
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Coach

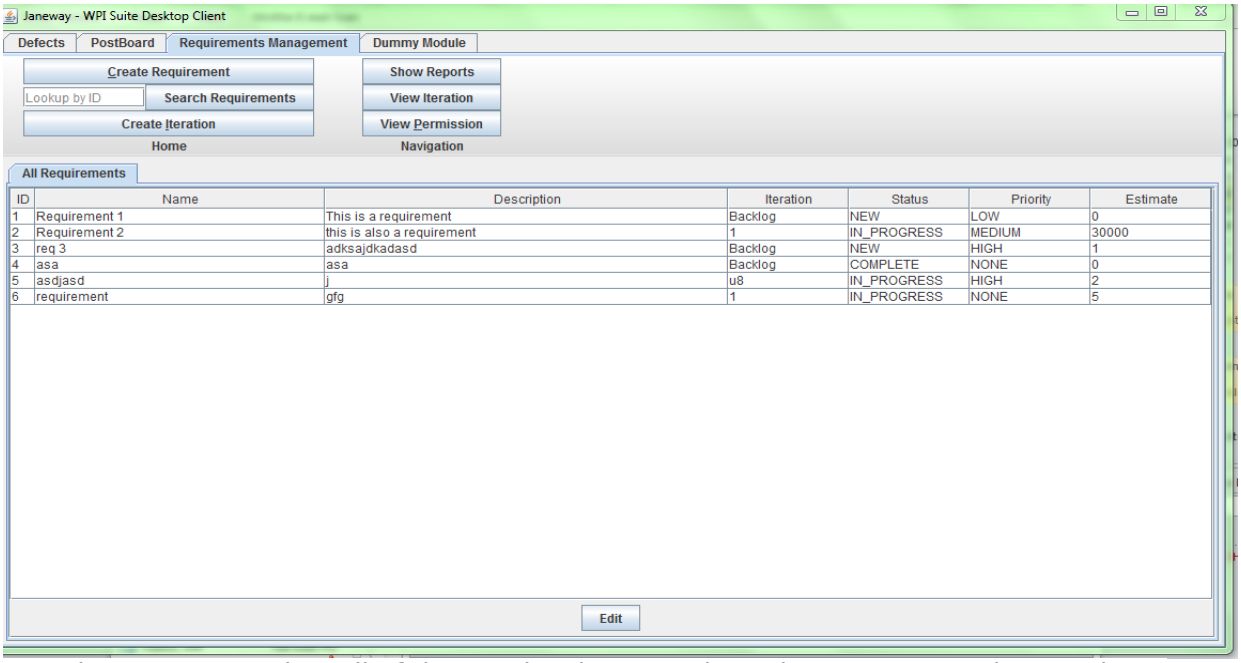
Andrew Hurle

General Use

These are features that every user has access to when using WPI suite.

View all Requirements Navigation

When you first open WPI Suite Requirements Manager, you will be greeted by this screen:



From here, you can view all of the previously created requirements assuming you have permissions to do so. To return to this tab from another tab, click the tab icon “All Requirements” and you will be brought back.

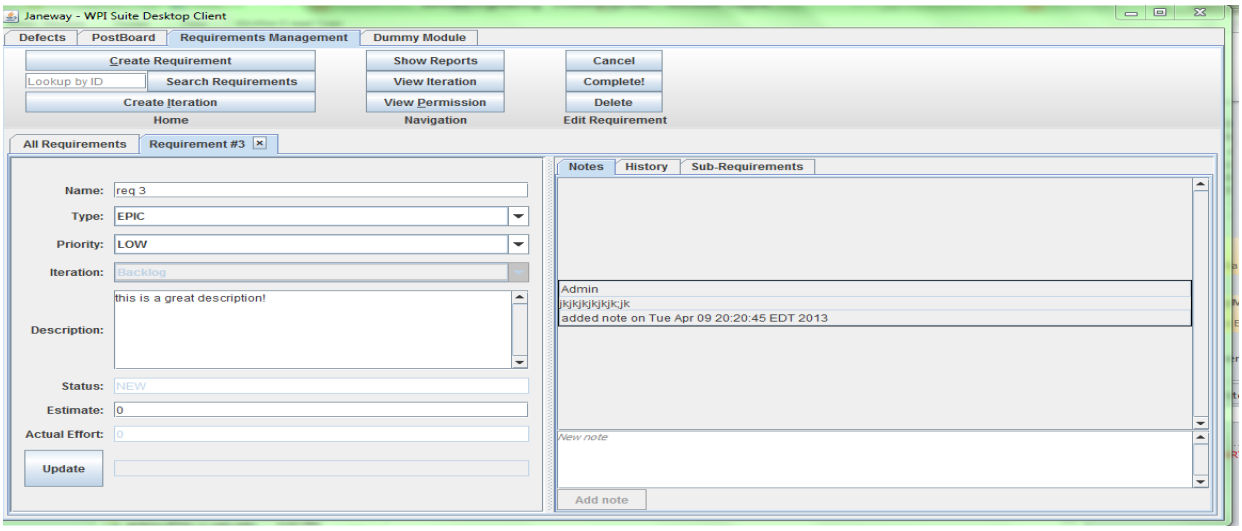
Note that any requirements that have been deleted will not show up on the “All Requirements” view.

View and Edit an Existing Requirement

Users with the right permissions (as assigned by the Project Manager) can view and edit a requirement in WPI Suite Requirements Manager.

You can view an existing requirement and the notes associated with it through multiple avenues.
To view a requirement in full from the “All Requirements” view. Double click the requirement’s name in the requirements list. A new tab will pop up. Another way is to access a requirement’s Edit view is by typing that requirement into the text box to the right of “Search Requirements” and searching for it. This is handy if you have many requirements in your project.

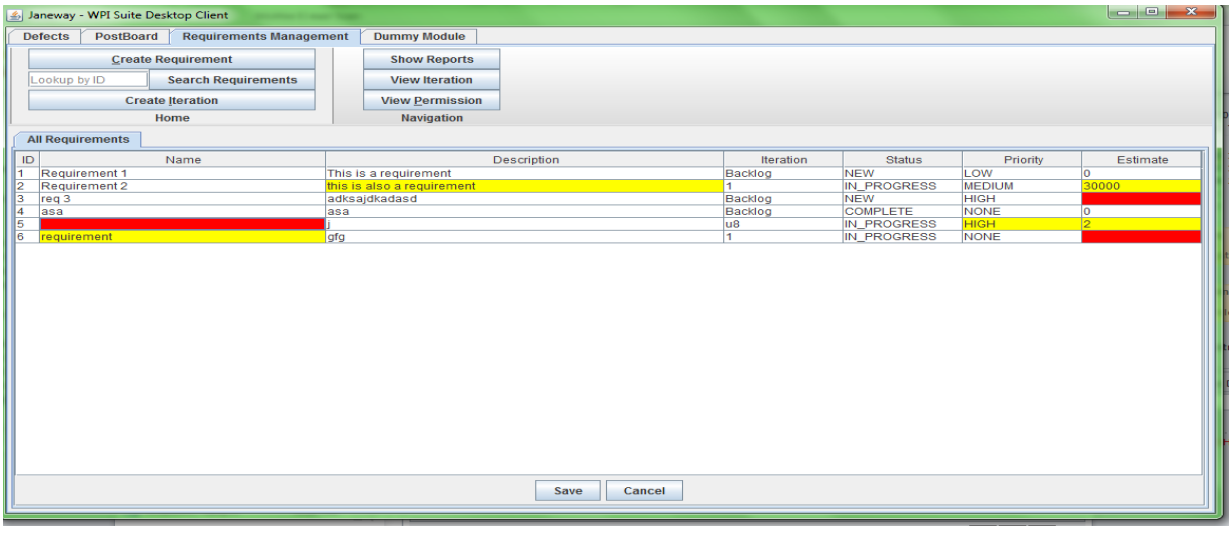
If the project manager has not assigned you permissions yet, then you can only view the requirement, but if you have permissions in full, then you can edit the requirement fields as shown below:



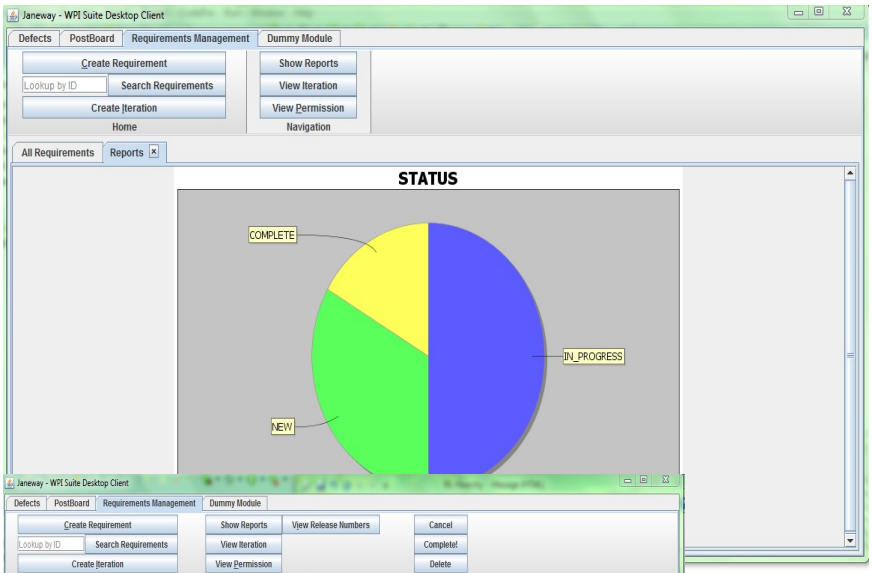
From the edit view, you can edit the requirement's name, type, description, estimate and actual effort. You can also add a note on the right hand side of the screen which will be saved with the requirement for every time you open the requirement again to view.

Editing Multiple Requirements at Once

For the purpose of being able to edit multiple requirements at once, there is also an "edit" button at the bottom of the "All Requirements" view. Once you click this button, you will have the ability to edit the fields on that view. Any changes you make on this view must be legal (i.e. You cannot leave the field blank and it must be of a valid value type) and any illegal changes will be highlighted red and will not be saved. The changes you have made will be highlighted yellow until you click the "Save" button at the bottom where the values will be stored and it will return to the original un-editable view.

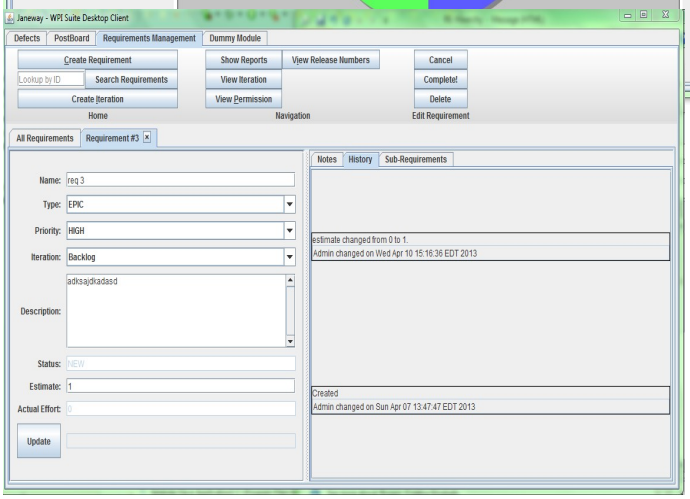


Pie & Bar Charts



Users can comparatively view the number of requirements with a particular status, iteration or member assigned to it. To access the Pie Chart,

Transaction log



Changes make by users to any requirement are tracked in the Transaction Log. Users can access this transaction log by double-clicking on the requirement from the “All Requirements” view to open it in edit mode, and then changing the tab on the right hand side from ‘Notes’ to ‘History’. Each log will track which object was modified, who made the change, what field was changed, when the change was made, the previous value and the new value.

Project Manager

Below are functionalities that the Project Manager will have access to. These abilities stack on top of functionalities in the general use section

Add an iteration to the current project

The project manager is able to add an iteration to a project so that requirements can be assigned for completion during that iteration. The development team is able to begin working on the requirements once the iteration is in progress.

To add an iteration, the project manager selects the “add iteration” tab. Once in that tab, a name, start date, and end date are able to be entered and selected. The start date must be before the end date and the time period selected cannot overlap another existing iteration, but one iteration may have its start date the same as another iteration’s end date. Iterations also cannot be named the same as any other existing iteration. Once all fields are appropriately filled in, the iteration is added and requirements may be added to it.

Edit Requirements

Change a requirement’s status

Requirements go through a sequence of states that correspond to the status of the requirement. A team member can change the status by editing the requirement. When the requirement is first created, its status is automatically “New.” Once the requirement is assigned to an iteration, its status becomes “In Progress.” When the iteration is removed or ends, any “In Progress” requirements are moved to the backlog and their statuses become “Open.” When the requirement is then assigned to an iteration from the backlog, its status goes back to “In Progress.” Once a requirement is finished and the customer accepts it, its status goes to “Complete.” Once in this state, the requirement can no longer be edited. Its status can be returned to “Open” or “In Progress,” however, and it can again be editable. A requirement in any status can be changed to “Deleted,” where it is also unable to be edited, aside from changing its status to “Open,” “In Progress,” or “Complete.”

Enter a requirement estimate

The estimate for a requirement can be entered so that it can be prioritized and scheduled by the customer. The team working on the project will have an agreed upon unit that they will provide. To enter a requirement’s estimate, double click on the requirement and go to the “Estimate” field. A positive integer value must be entered in order to update the requirement.

Estimate Several Requirements

There is also the option to estimate several requirements at once. To do this, go into the “List All Requirements” view so that all requirements are visible at once. Click the “Edit” button at the bottom of the panel and you will see that the fields will

become editable within the table. From there you can enter the estimates for several requirements at once, with the same positive-integer-value rule applying.

Schedule a requirement for an iteration

Scheduling requirement to be completed in an iteration is crucial to the development of the product. This allows the team to view the requirements that they need to accomplish and the time period it needs to happen during.

To schedule a requirement, you must be in the "Edit" view. To do this, go to the "View All Requirements" view and double click on the particular requirement to be scheduled. Once there, use the drop down menu to select the desired iteration you'd like to assign the task to. The iteration must be a current iteration (today is within the iteration's dates) or a future iteration. Once an iteration is selected, click the "Update" button and the requirement will now be scheduled for that iteration. That particular requirement's estimated effort will be added to the iteration's total estimated effort.
Note: You can only add a requirement to a current iteration. Make sure that an iteration has been created with today before the end date.

Assign requirements management permissions to users

The project manager is also able to assign permissions to a team member, which indicates what privileges that member has for working with the requirements in the WPISuiteRM module.

There are three permission levels: None, Update, and Administer. "None" allows the team member to only see the requirements for the project, but do nothing else. "Update" allows the team member to update the actual effort (if he/she is assigned to the iteration which that requirement is assigned to), add and edit notes, add and edit acceptance tests, and add and edit tasks. "Administer" allows the team member to do everything previously specified, as well as schedule and change the state of the requirement.

Assuming the project manager has the proper permissions to update user permissions, he/she is able to enter an existing team member's user name and choose a permission level from the drop down menu. When "Update" is clicked, the user's permissions are updated and appear. All changes made to the permissions will appear in the transaction log with the old permission, new permission, and who made the change.

Development Team Member

Any member of the Development team will have access to these features depending on their permissions level as set by the PM. Here is a technical explanation of how to use the Requirements Manager, whereas the same requirements under customer provide an explanation as to the overview of the requirement and use for a customer.

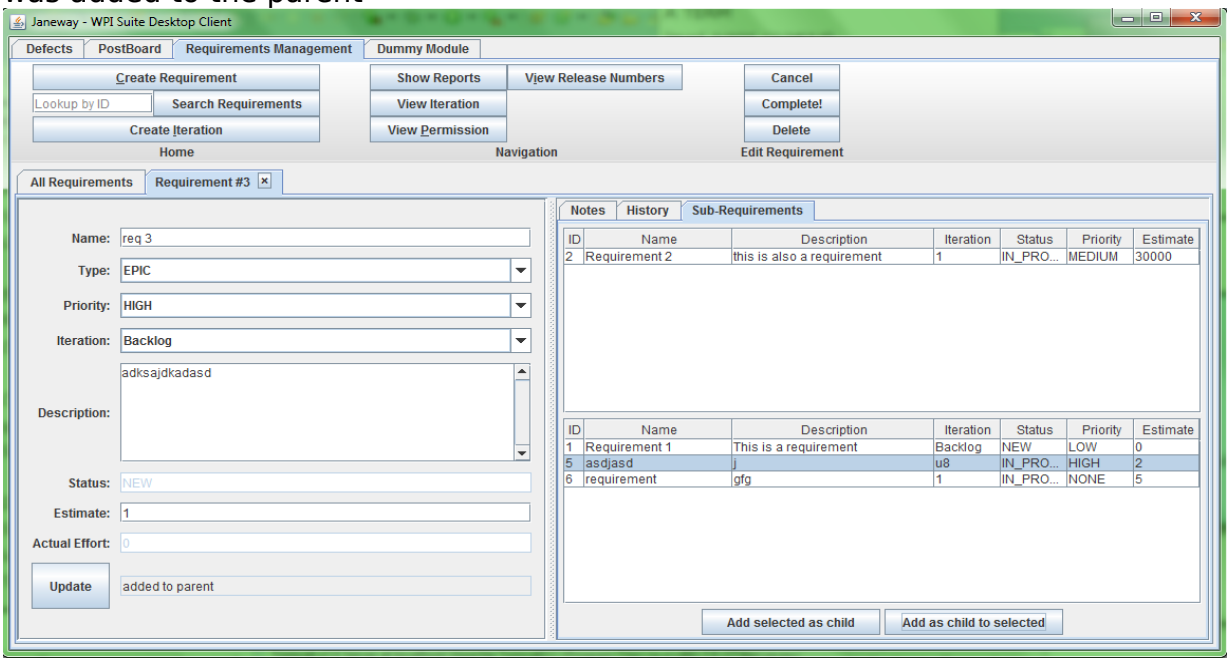
Add a note to a requirement

A team member is able to add a note to a requirement. This allows him/her to provide details that are not included in the basic description of the requirement, such as a decision made during a conversation, an insight, or a design decision. After a note is added, it will appear with any other notes associated with the requirement and anyone viewing the user story will be able to see it (along with all other notes). A transaction log record will also be added to the requirement indication who added the note.

To add a note, go into the "Edit Requirement" view. On the bottom right, there is a text field that a note can be entered into. Once complete, the "Update" button can be clicked and the note will appear with any other notes.

Sub Requirements

The top view is whatever children the requirement has. The bottom is a list of the rest of the requirements. When you add a requirement as a child to the selected requirement in this view, then the box near the update button lets you know that it was added to the parent



Attach an existing requirement as a sub-requirement to a requirement

When in the "Edit Requirement" view for the particular requirement that is to become the parent can select the "Add Existing Child Requirement" button. The desired child requirement can then be selected and it is added to the set of sub-requirements for the current requirement.

Split a Requirement

A requirement can be split into smaller requirements to make them easier the schedule or assign. To do this, a requirement whose status is "New," "Open," or "In Progress" must be selected and the user must have the proper permissions to update it. The user would then

select the “Add Child” button and enter the name and description for the new requirement, as would be done when creating a regular new requirement. The requirement is then created and associated with the original requirement as a sub-requirement. It inherits all other information from the “parent” requirement, such as the iteration, release, type, and status.

Acceptance Tests

As a team member I want to add an acceptance test to a requirement. If I am a customer, this is a high-level acceptance test. If I am a member of the development team I may be adding a more detailed and explicit test.

Scenario:

Given that I am editing a add test,
When I choose "add test",
And add a test nam,
And add the text of a test,
And select "Update",
Then the acceptance test is added to the collection of unit tests associated with the user story,
And the test status is blank,
And a history transaction is added to the requirement's history indicating that I added the test.

Details:

- Tests have a status field that may be blank, Passed, or Failed. Initially, it is blank.
- The name of the test must be non-blank and up to 100 characters long.

Customer

Creating a Requirement

The user has the ability to create a requirement that specifies a specific feature that the user wants the system under development to have. This allows for the creation of correct marketing materials while ensuring that the detailed requirements and tasks support the planned features. Once a requirement is saved, it becomes part of the current project, is assigned a unique **ID** number, the **Status** is set to "NEW", a **transaction** is entered into the requirement's history, or **Transaction Log**, and the requirement is now available for retrieval/**viewing** and **editing**.

How to Create a Requirement

1.) Click the "New Requirement" button at the top of the window
2.) Enter a **Name**, **Description**, and any **optional fields**
3.) Click the Save button

- **Fields:**
  - **Name:** This is the name of your requirement. It can be up to 100 characters long but cannot be left blank
  - **Iteration**: This is the time period that the requirement will take during. See **Creating an Iteration** for more details
  - **Description:** This tells the user a summary of the specifications for your requirement. It is virtually unlimited in size but cannot be left blank
  - **ID**: This is a string of characters that is unique to each requirement. This makes it easier to reference
  - **Status**: The status is the state the requirement is currently in. It can be **Edited** once the requirement has been created. See **Changing a Requirement's Status** for more details
  - **Optional Fields:** This includes the **Release Number**, **Type of Requirement**, and **Priority**
    - **Release Number:** This is one of the optional fields. If it is entered, it must be one of the release numbers in the current project. If the project already has a current release, the requirement's default release number is the same as this. This may be overridden, including the option to not have a release number at all.
    - **Priority:** This is one of the optional fields. It is by default blank, or the user can decide to set it to High, Medium, or Low. See **Setting the Priority** section for more details.
- **Transaction**: Each time a change is made (whether it is creating a requirement or editing any of its fields), a record is added to the requirement's **Transaction Log**. See the **Transaction Log** section for more details.
- **Transaction Log**: This is a complete record of all changes ("transactions") that have been made to a particular requirement. See the **Transaction Log** section for more details.

- **Viewing:** Once a requirement has been created, it can be retrieved and viewed from the **All Requirements** view. See the **Viewing All Requirements** section.
- **Editing:** Once a requirement has been created, it is available for editing. Double clicking on a specific requirement allows editing of all fields the user has **permission** to edit. Highlighting several requirements, clicking on the "Edit" button, and changing the fields will allow the editing of multiple requirements. For more information, see the **Permissions**, **Editing a Requirement**, and **Editing Multiple Requirements** sections.

Details:

- Requirements may contain other requirements. These are sub-requirements that must be satisfied (completed) in order for the containing requirement to be considered satisfied. Initially, this is an empty set.
- Requirements may also contain notes. How these are use is up to the end user. Initially, a requirement has an empty set of notes.
- Requirements may be scheduled for an iteration. By default, the iteration is empty.
- Requirements have an actual effort value associated with them. This value is initially zero.
- Requirements may be assigned to zero or more team members. Initially, this is an empty set.
- Requirements have a estimate associated with it. This is a non-negative integer value. Initially, the value is zero.
- Requirements have development tasks associated with them. Initially, this is an empty set.
- Requirements have acceptance tests associated with them. Initially this is an empty set.
- Requirements have attachments associated with them. An attachment can be any file such as an image, archive, and so on.
- Requirements have a history (log) associated with them. Each history / log record indicates a change to the requirement. All log records have a timestamp, user who performed the action, and text indication the action.

Delete a requirement

The project manager may want to remove a requirement from the system because it is no longer needed or is a mistake. To accomplish this, the user must first have the proper permissions. The requirement cannot be deleted if it has any sub-requirements, if there are any open tasks associated with it, or if its status is "In Progress." The user can select "Delete," and the requirement's status will then be changed to "Deleted." No other changes can be made to the requirement unless its status is changed back to "Open" or "In Progress." The deletion will be recorded in the transaction log, showing who deleted it.

Close a requirement that has no sub-requirements

As a customer, I want to accept that a requirement has been completed so that the team gets credit for completing the work. When I do this, the requirement is considered complete. Typically, this will be because the team has demonstrated than any acceptance tests pass or

that they have tested the system for the correctness according to the requirement and demonstrated to me that the requirement is complete.
Given that I am viewing a requirement,
And I have privileges to change its status,
When I change the requirement to complete,
And select "update",
Then the requirement's status will be Complete,
And no other changes can be made to the requirement unless it is to delete it or re-open it,
And a history transaction will be created indicating that I closed the requirement.
If the requirement has any open tasks, they will be closed.

Unschedule Requirement

The project manager or customer may want to unscheduled a requirement at some point in time. This, in essence, means that the requirement is moved to the backlog to ensure that the schedule is kept up to date.

To do this, go to the “Edit Requirement” view and select “Backlog” from the iteration’s drop down menu. The requirement is removed from any view of that iteration and its iteration shows up as “Backlog.” No other changes are made to the requirement and a transaction is added, showing who made the change, the original iteration, and the new iteration (which in this case, will always be “Backlog”). The requirement can be edited and assigned to a new iteration if it is desired in the future.

Sub Requirements

A team member or customer may want to make a requirement that is a child, or sub-requirement, of another requirement. This enables the team to better see the dependencies between requirements and schedule work more efficiently. This can be done in two ways: adding a child while editing the parent requirement, or by adding a child sub-requirement to an existing requirement. In order for either of these actions to take place, both of the requirements must be “New,” “Open,” or “In Progress.”

Attach an existing requirement as a sub-requirement to a requirement

When in the “Edit Requirement” view for the particular requirement that is to become the parent can select the “Add Existing Child Requirement” button. The desired child requirement can then be selected and it is added to the set of sub-requirements for the current requirement.

Attach an Existing Requirement to Another Existing Requirement as a Child

When in the “Edit Requirement” view for a particular requirement, the user will click on the “Attach to Parent” button. The user can then select the desired parent requirement and the current requirement then becomes a sub-requirement of the parent selected.

Split a Requirement

A requirement can be split into smaller requirements to make them easier the schedule or assign. To do this, a requirement whose status is “New,” “Open,” or “In Progress” must be selected and the user must have the proper permissions to update it. The user would then select the “Add Child” button and enter the name and description for the new requirement, as would be done when creating a regular new requirement. The requirement is then created and associated with the original requirement as a sub-requirement. It inherits all other information from the “parent” requirement, such as the iteration, release, type, and status.

Schedule a requirement for an iteration

As a requirements specifier, I want to schedule a requirement to be completed in an iteration so that the development team can work on it.

Scenario: Schedule a requirement

Given that I am editing a requirement,
And the requirement has a positive value for estimated effort,
When I enter a valid iteration for the requirement,
And the iteration is either currently in progress (today is within the iteration's dates) or the iteration is in the future,
And select "update",
Then the requirement will be scheduled for the iteration specified,
And the requirement's estimated effort will be rolled up into the iteration's total estimated effort.

Details:

- The iteration must be defined for the current project.

Schedule Several Requirements for an Iteration

Several Requirements can be scheduled for an iteration by going into the “View All Requirements” panel and selecting the “Edit” button at the bottom of the screen. The fields will then become editable, and the user is then able to select an iteration for each requirement, all from within the same view. Once finished, the “Update” button finalizes all changes (and highlights any errors) and the requirements are scheduled.

Acceptance Tests

As a team member I want to add an acceptance test to a requirement. If I am a customer, this is a high-level acceptance test. If I am a member of the development team I may be adding a more detailed and explicit test.

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