



الجامعة الإسلامية العالمية ماليزيا  
INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA  
يُونُسُ بَرَسِيَّتِي اِسْلَامًا اَبْتَارًا يَحْسِبًا مِلْدِيَّتَا

Garden of Knowledge and Virtue



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# A4 Requirements Management

Semester 2, 2019/2020

Due: Refer iTaleem

**KULLIYAH OF INFORMATION & COMMUNICATION  
TECHNOLOGY**

**CSC 3506 REQUIREMENTS ENGINEERING**

**SEMESTER 2, 2019/2020**

**SECTION 1**

**PROJECT TITLE: IIUM Course Repository Management System**

## ASSIGNMENT-4: Requirements Management

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27/07/20

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## **1 Store your project requirements**

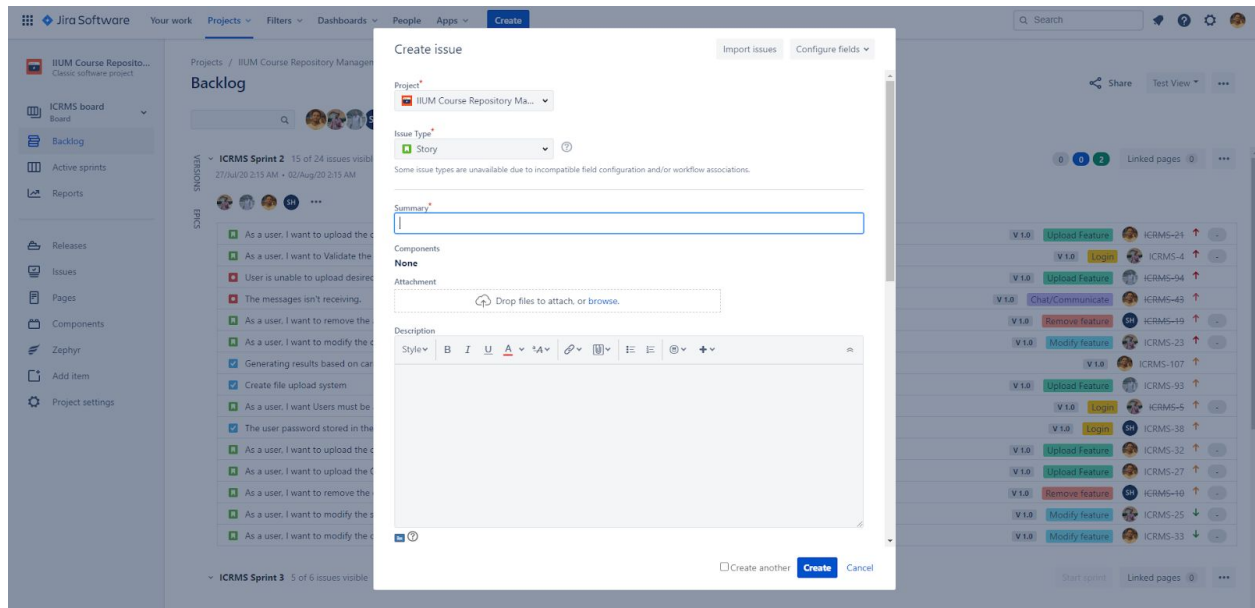
The tool that we used is called Jira. It is basically an agile-based requirements management tool. For our project, we have used the scrum methodology.

### **1.1 How does the tool allow you to store functional, quality, and constraint requirements?**

Jira keeps the requirements from different perspectives. The story is the tasks that the user of the system wants the platform or software to keep. The story can have subtasks inside it. Then Jira has a task option, which is basically for the developers. They will see the tasks in which they are assigned to by the reporter of the requirement. Jira does not allow the functional, quality, and constraint requirements to be kept explicitly in individual categories. But it allows us to store all the requirements of all types under the feature called Issue.

### **1.2 Does the tool follow any standard requirement template?**

While storing the requirements, Jira provides a template to follow and you can also customize the attributes according to your need. For instance, in order to store a story, which is the need or requirement of a user, it gives you the option to mention if there are any sub-tasks related to this story. Then you have to key in the summary, description, any added attachments, which issue it is linked to, if there is any problem in completing this story, which version of the software will fix it. Also, the story is assigned to which person, it is under which epic, sprint, the estimated time to complete, the priority of the story ( can be in story points and/or high,low), etc. It helps to store the requirements in a systematic manner which is very easy and intuitive to handle.



**Figure: Template provided by Jira in terms of storing requirements**

## 2. How does the tool allow you to manage requirements changes?

Jira is very easy to handle the changes in requirements. You can prioritize the issues and put it into different sprints. The ones you want to be published in the first phase will go on sprint 1 and so on. The sprints have to be completed within 1-3 weeks in the scrum methodology. If all the issues were not resolved in sprint 1, then you can easily move it back to the backlog or other sprints. In the agile methodology, the late changes in requirements do not impact hugely as it does for the waterfall model of software development. You can change the versions and priority of the requirements at any time and the developers or other members will be notified instantly through the Jira mobile app or web platform.

## 3. Collaborate with team members:

Jira has created such a forum that an employer saves money by recruiting freelancers and working with a remote team on projects. They don't have to rent an office, pay for the design, purchase furniture, computers, and other office supplies. No rental fees per month and no maintenance costs. Both of these are workplace liability.

Therefore, remote teams push the project 24/7 forward and can discover real gems while pursuing talent in distant markets. Jira is the tool that provides the space you need to track the daily progress of the projects, edit the projected completion dates and control each member of the team. The tool provides

transparency, which is very important for working with dispersed teams. Each member can access this single space and get information on the tasks they are interested in. They don't need to get in touch with each other for the update, which saves a lot of time.

#### 4. Documentation:

We are able to create a jira issue type specifically for requirements with its own workflow, custom fields and reporting. Sub-tasks offer a quick way to add and manage your requirements, and we can link related requirements together or with feature requests.

Confluence seamlessly integrates with JIRA, allowing us to monitor your JIRA specifications linked to your corresponding project documents in Confluence. Confluence ships for the writing of specifications with a Template design to enable recording of the specifications.

This is an example of one issue( requirement) which is provided by Jira.

[ICRMS-21] <a href="#">As a user, I want to upload the course materials in the system</a> Created: 25/Jul/20 Updated: 27/Jul/20 Resolved: 26/Jul/20			
Status:	Done		
Project:	<a href="#">IIUM Course Repository Management System</a>		
Components:	None		
Affects versions:	None		
Fix versions:	V 1.0		
Type:	Story	Priority:	Highest
Reporter:	Nasik Sami	Assignee:	Nasik Sami
Resolution:	Done	Votes:	0
Labels:	None		
Remaining Estimate:	1 hour		
Time Spent:	Not Specified		
Original Estimate:	1 hour		
Epic Link:	<a href="#">Upload Feature</a>		
Sprint:	ICRMS Sprint 2		
Generated at Mon Jul 27 14:45:43 UTC 2020 by Md Sariful Islam using Jira 1001.0.0-SNAPSHOT#100140-sha1:fb0377b3ab7ea61e9e469b27152b7e441e7764d.			

#### 5. Traceability

It's possible to see relations between objects from different projects. RTM Traceability Matrix allows choosing among projects and Jira issue types from a drop-down list (Requirements, Tests, Defects, but also stories, Epics, regular tasks, and other issue types)

### 5.1 How the tool supports traceability features?

In Jira, we are able to trace based on the filter. The aim of the traceability is to ensure that all requirements have been tested by executing the test cases.

1. Backward and forward traceability: For Jira, it has two types of traceability, Which are forward traceability and backward traceability.
2. Identify gaps in test design: It helps you identify gaps in test design and coverage so that proper measures can be taken to resolve them.
3. Manage continuous change: A great benefit to traceability tracking is its ability to assess the impact of changes on requirements.
4. Streamline reviews and audits: Accurate reviews and audits have become essential to the success of software companies, especially in regulated industries.
5. Efficient test management: Traceability tracking enables more efficient test management since it helps test managers validate whether the requirements have been covered by tests

### 5.2 Can you generate a traceability matrix?

Traceability matrix means to track the testing progress. With the help of Jira software, we can easily make the traceability Matrix. It shows us whether the requirement is tested or not and if it is tested then what is the result, in which cycle plan the test execution. And also we can learn if there are any defects for that specific test.

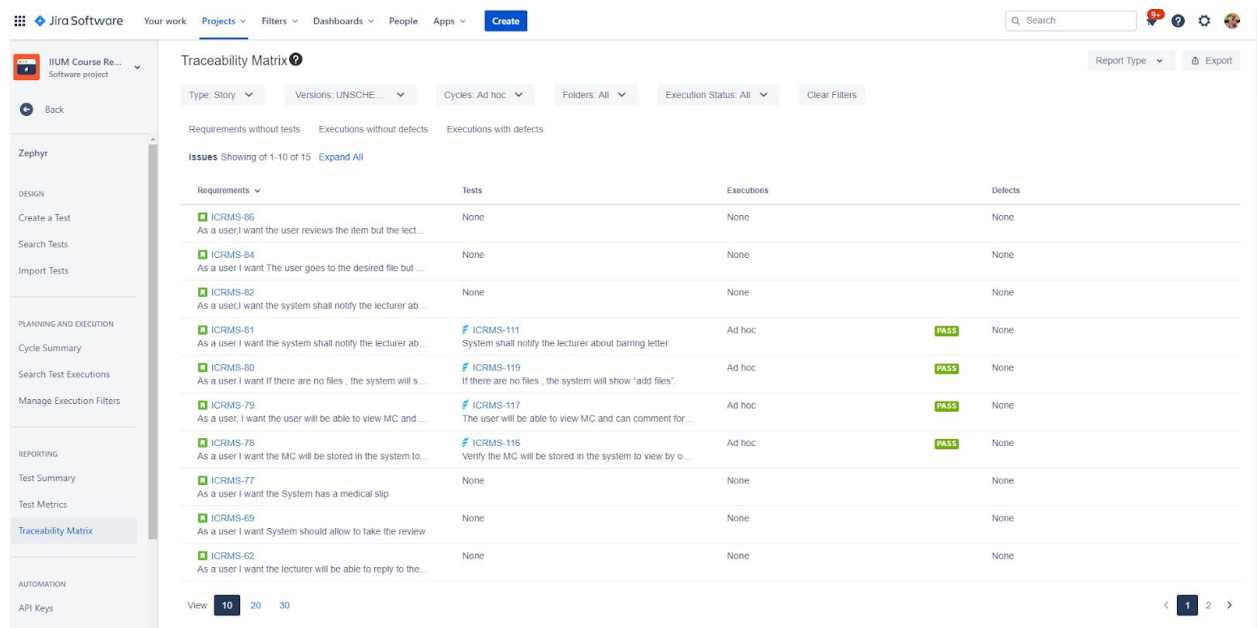


Figure: Traceability Matrix

## 6 Validation

### 6.1 Is there any feature to validate requirements? How?

For validation purposes, we have used the Zephyr. Zephyr for Jira is a native application that resides in Jira software on Jira core and brings test management capabilities to any Jira project. It is widely used as an issue tracking tool for all types of validation. First, we need to create test cycle, then we need to assign the test cases on that cycle after the test will finish it will show the results and then we can get the report from test summary and test matrix

Executions List

Test Cycle	Test Id	Execution Status	Executed By	Execution Date
Ad hoc	10118	PASS	Afrique Amin Zian	Invalid Date
Ad hoc	10117	UNEXECUTED		
Ad hoc	10112	UNEXECUTED		
Ad hoc	10115	PASS	Afrique Amin Zian	Invalid Date
Ad hoc	10114	UNEXECUTED		
Ad hoc	10119	PASS	Afrique Amin Zian	Invalid Date
Ad hoc	10111	PASS	Afrique Amin Zian	Invalid Date
Ad hoc	10112	FAIL	Md Sariful Islam	Invalid Date
Ad hoc	10110	PASS	Afrique Amin Zian	Invalid Date
Ad hoc	10116	PASS	Afrique Amin Zian	Invalid Date

Size: 50



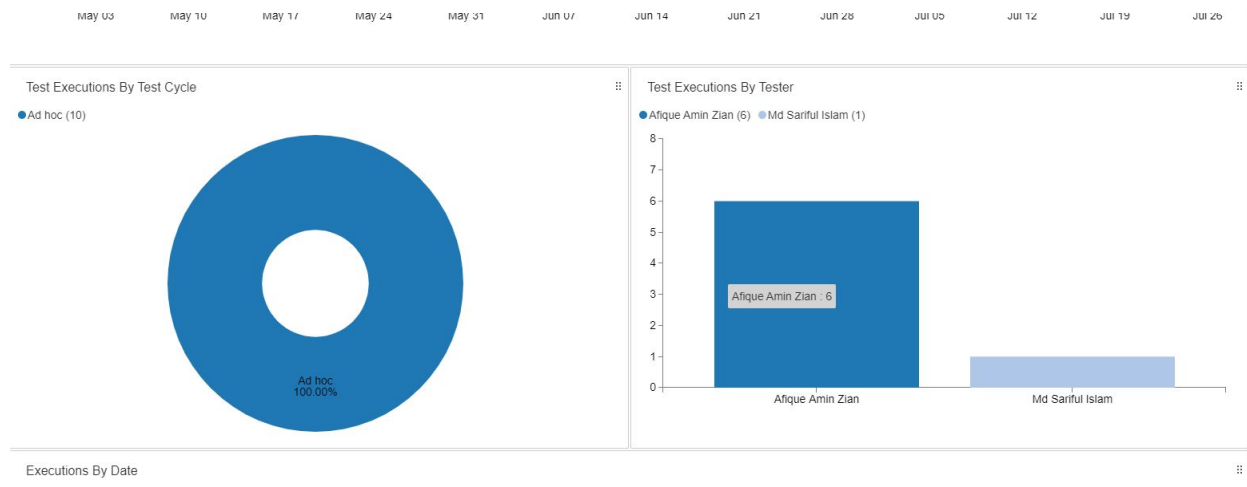


Figure: Test Matrix

**Cycle Summary**

Search

Create New Test Cycle

- UNRELEASED
- UNSCHEDULED
- Ad hoc**
- V 2.0
- V 1.0
- RELEASED

**Ad hoc**

Build: , Environment: , Created By: , Total Executions: 9, Cycle Executions: 9, Total Executed: 7, Start Date: , End Date: , Description:

☐ Select All ☐ Delete

Columns  + Add Tests

ID	Status	Summary	Defect	Component	Label	Total Exec...	Total Logg...	Execution ...	Actions
ICRMS-111	PASS	System shall notify the lecturer about barring letter	-	-	-	-	-	-	E C
ICRMS-119	PASS	If there are no files, the system will show "add files"	-	-	-	-	-	-	E C
ICRMS-116	PASS	Verify the MC will be stored in the system to view by others.	-	-	-	-	-	-	E C
ICRMS-112	PASS	First time user can login using the correct username and password and view the dashboard	-	-	-	-	-	-	E C
ICRMS-113	FAIL	User is able to upload the desired file.	-	-	-	-	-	-	E C
ICRMS-120	PASS	Able to visualize the progress.	-	-	-	-	-	-	E C
ICRMS-115	UNEXECUTED	the system shall notify the lecturer	-	-	-	-	-	-	E C

Figure: Cycle Summary

## Other misc features that are interesting to share

Jira provides very easy to navigate dashboards with lots of gadgets to help the project manager to keep track of his team's work and all the gadgets are customizable. It provides various insights of the project progress.



Figure: Instances of dashboard features in our project

After the dashboard, the coolest feature about Jira is, it can generate many reports from different perspectives. This helps to keep the track of the project and it is very essential in scrum development methodology because the common practice in scrum is everyone will have a short meeting at the end of

the day and they will have a sprint ending meeting in every 2-4 weeks. It is easier for the team to show progress and updates to the project manager

Projects / IIUM Course Repository Management System

### All reports

**Agile**

- Burndown Chart**  
Track the total work remaining and project the likelihood of achieving the sprint goal. This helps your team manage its progress and respond accordingly.
- Burnup Chart**  
Track the total scope independently from the total work done. This helps your team manage its progress and better understand the effect of scope change.
- Sprint Report**  
Understand the work completed or pushed back to the backlog in each sprint. This helps you determine if your team is overcommitting or if there is excessive scope creep.
- Velocity Chart**  
Track the amount of work completed from sprint to sprint. This helps you determine your team's velocity and estimate the work your team can realistically achieve in future sprints.
- Cumulative Flow Diagram**  
Shows the status of issues over time. This helps you identify potential bottlenecks that need to be investigated.
- Version Report**  
Track the projected release date for a version. This helps you monitor whether the version will release on time, so you can take action if work is falling behind.
- Epic Report**  
Understand the progress towards completing an epic over time. This helps you manage your team's progress by tracking the remaining incomplete/unestimated work.
- Control Chart**  
Shows the cycle time for your product, version or sprint. This helps you identify whether data from the current process can be used to determine future performance.

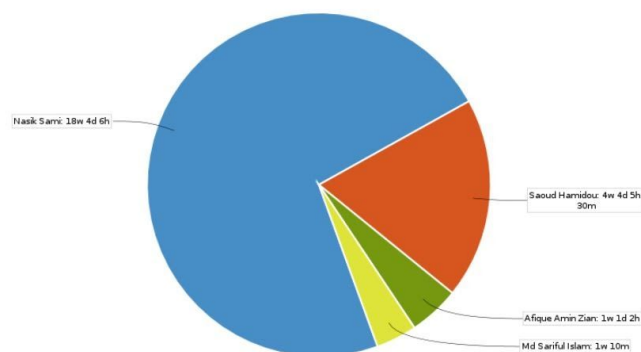
**Issue analysis**

- Epic Burndown**  
Track the projected number of sprints required to complete the epic (optimized for Scrum). This helps you monitor whether the epic will release on time, so you can take action if work is falling behind.
- Release Burndown**  
Track the projected release date for a version (optimized for Scrum). This helps you monitor whether the version will release on time, so you can take action if work is falling behind.
- Average Age Report**  
Shows the average age of unresolved issues for a project or filter. This helps you see whether your backlog is being kept up to date.
- Created vs. Resolved Issues Report**  
Maps created issues versus resolved issues over a period of time. This can help you understand whether your overall backlog is growing or shrinking.
- Pie Chart Report**  
Shows a pie chart of issues for a project/filter grouped by a specified field. This helps you see the breakdown of a set of issues at a glance.
- Recently Created Issues Report**  
Shows the number of issues created over a period of time for a project/filter, and how many were resolved. This helps you understand if your team is keeping up with incoming work.
- Resolution Time Report**  
Shows the length of time taken to resolve a set of issues for a project/filter. This helps you identify trends and incidents that you can investigate further.
- Single Level Group By Report**  
Shows issues grouped by a particular field for a filter. This helps you group search results by a field and see the overall status of each group.
- Time Since Issues Report**  
For a data field and project/filter, maps the issues against the date that the field was set. This can help you track how many issues were created, updated, etc. over a period of time.

**Forecast & management**

## Workload Pie Chart Report

Project: **IIUM Course Repository Management System** (Current Estimate) by Assignee  
Chart



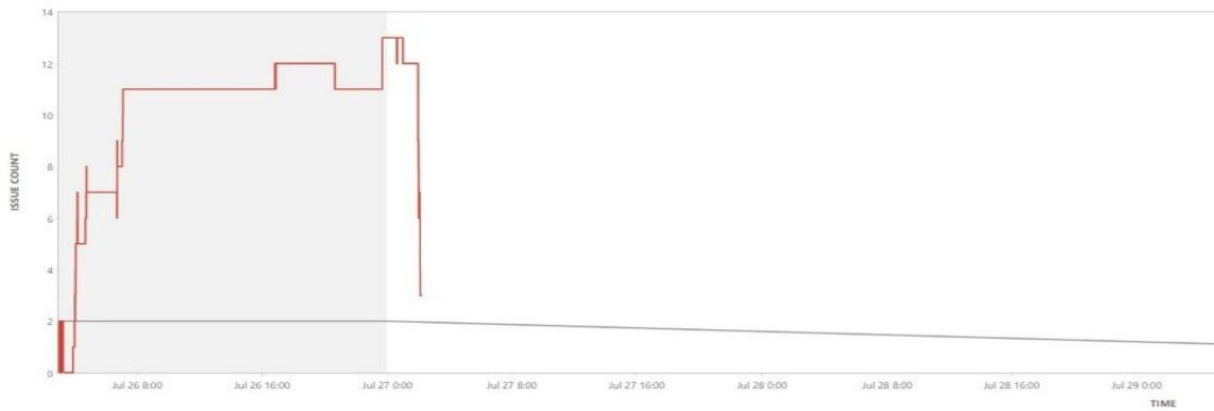
## Burndown Chart

### How to read this chart

Track the total work remaining and project the likelihood of achieving the sprint goal. This helps your team manage its progress and respond accordingly.

[Hide this information](#)

ICRMS Sprint 1 ▾ Issue Count ▾

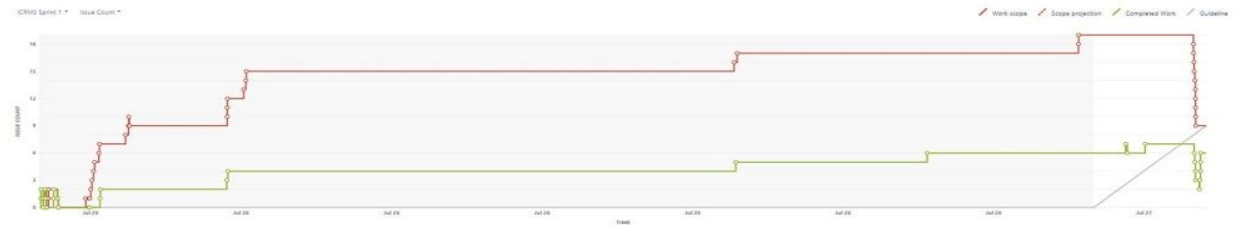


### Burndown Chart

#### How to read this chart

The Burndown Chart provides a visual representation of a sprint's completed work compared with its total scope. Track your team's progress towards sprint completion and identify problems related to scope creep.

[Learn more](#) [Hide this information](#)

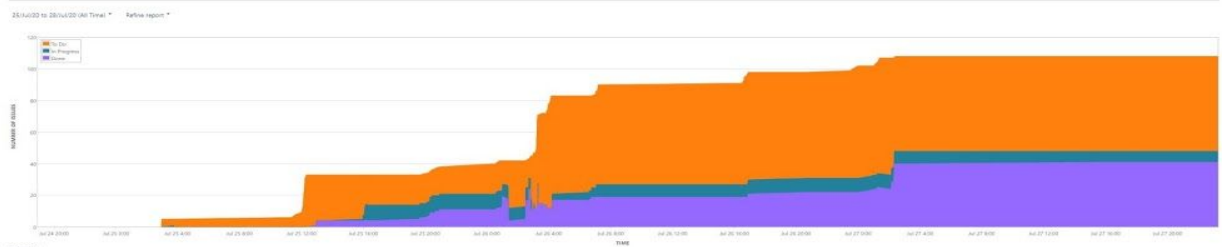


### Cumulative Flow Diagram

#### How to read this chart

Shows the statuses of issues over time. This helps you identify potential bottlenecks that need to be investigated.

[Hide this information](#)



#### Overview

Click and drag corner arrows (black) on chart overview to select date range. Double-click overview to zoom.



### Epic Report

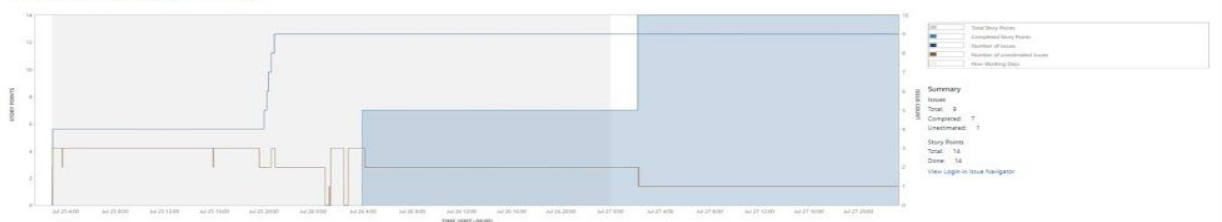
#### How to read this chart

Understand the progress towards completing an epic over time. This helps you manage your team's progress by tracking the remaining incomplete/unestimated work.

[Hide this information](#)

Log in ▾

ICRMS-1 Teachers: H202. Auditors need to log in to the system. [View linked pages](#)

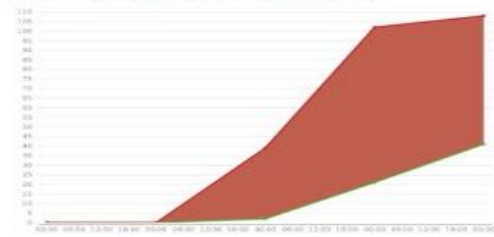


### Created vs. Resolved Issues Report

Project: IIUM Course Repository Management System

#### Chart

This chart shows the number of issues created vs. the number of issues resolved in the last 5 days.



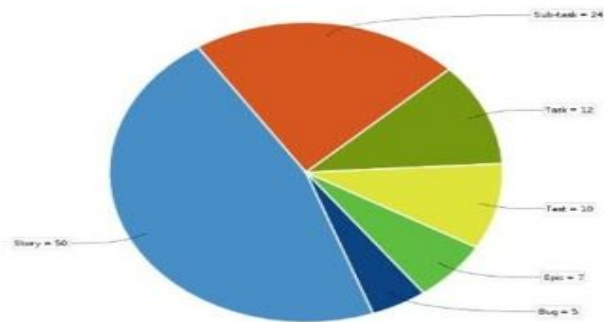
#### Data Table

Period	Created	Resolved
23-July-2020	0	0
24-July-2020	0	0
25-July-2020	30	2
26-July-2020	82	16
27-July-2020	6	20

### Pie Chart Report

Project: IIUM Course Repository Management System (Issue Type)

#### Chart



#### Data Table

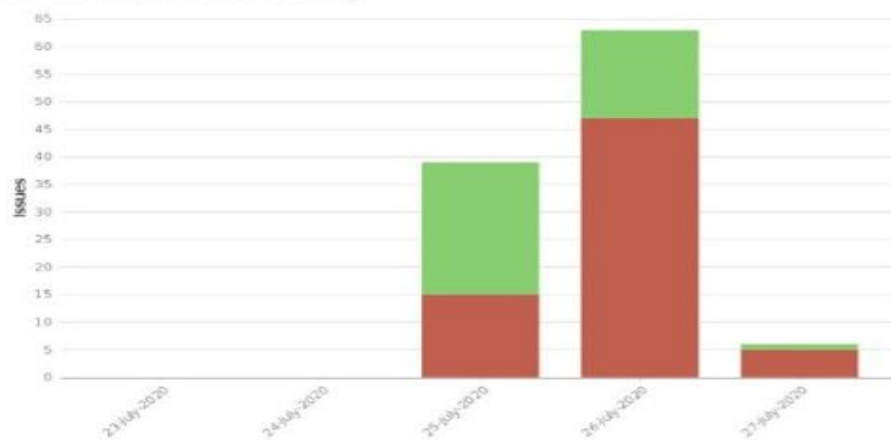
Issue Type	Issues
Story	50
Sub-task	24
Task	12
Test	10
Epic	7
Bug	5

### Recently Created Issues Report

Project: IIUM Course Repository Management System

#### Chart

This chart shows the issues created in the last 5 days



#### Data Table

Period	Created Issues (Unresolved)
23-July-2020	0
24-July-2020	0
25-July-2020	15
26-July-2020	47
27-July-2020	5

(Note: all times represent number of issues created in that period)

Apart from having these features, Jira has lots of plugins and adds-on to make the platform more and more effective. It allows kanban agile methodology. It has a cloud and local server version to work on.