

Sprint Optimizer: A Capacity Planner Plug-In for JIRA

Students: William Elias, Matt Taylor

Mentor: Masoud Sadjadi

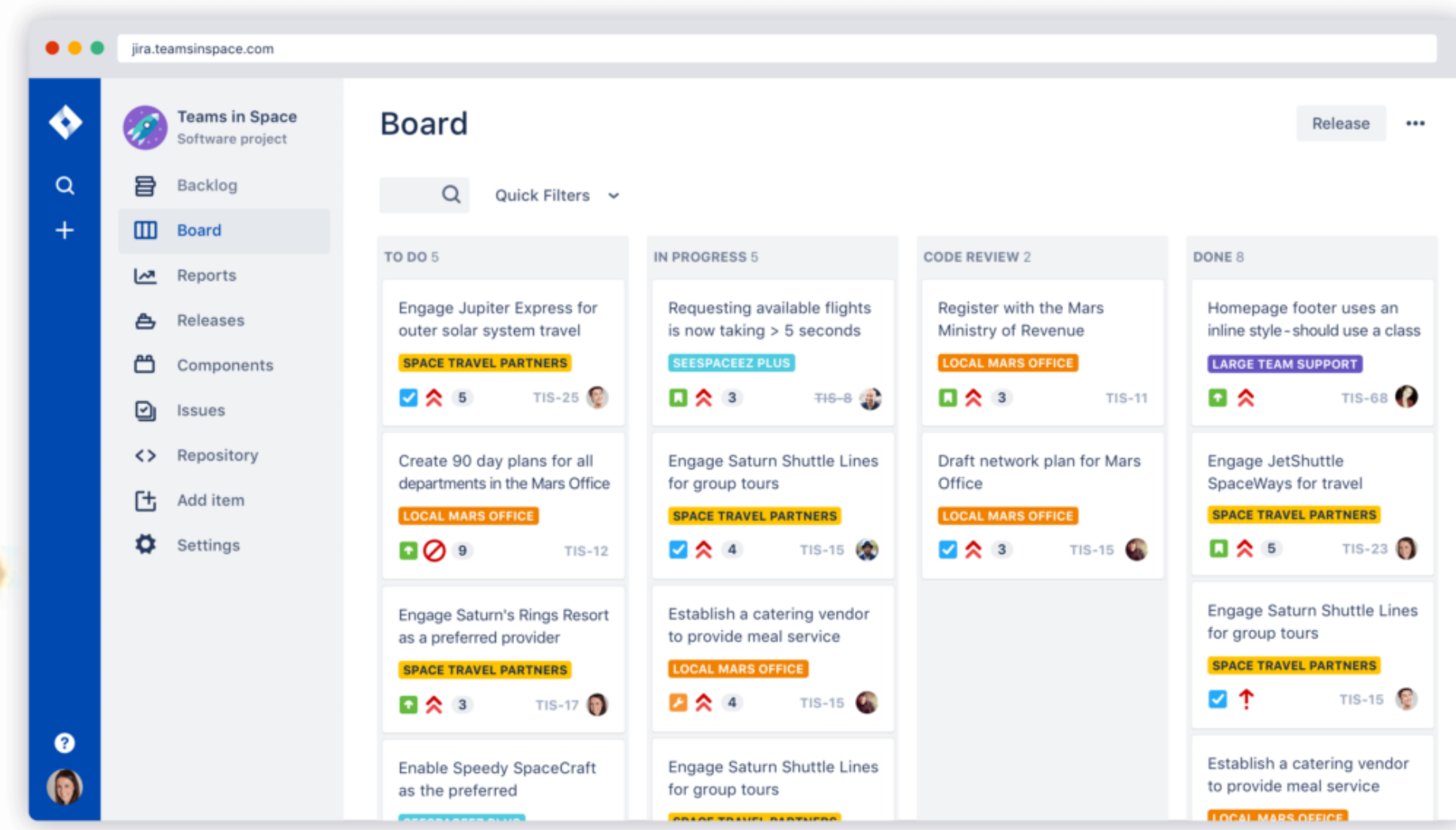
Instructor: Dr. Masoud Sadjadi, Florida International University

Problem



A common problem among many developers when it comes to Agile development is the inaccurate estimation of many stories, causing time to be wasted or misused throughout the sprint. Sprint Optimization was created to help solve this problem of poor estimations and allocations.

Current System



The current system is built on-top of a base JIRA application run through Node.JS.



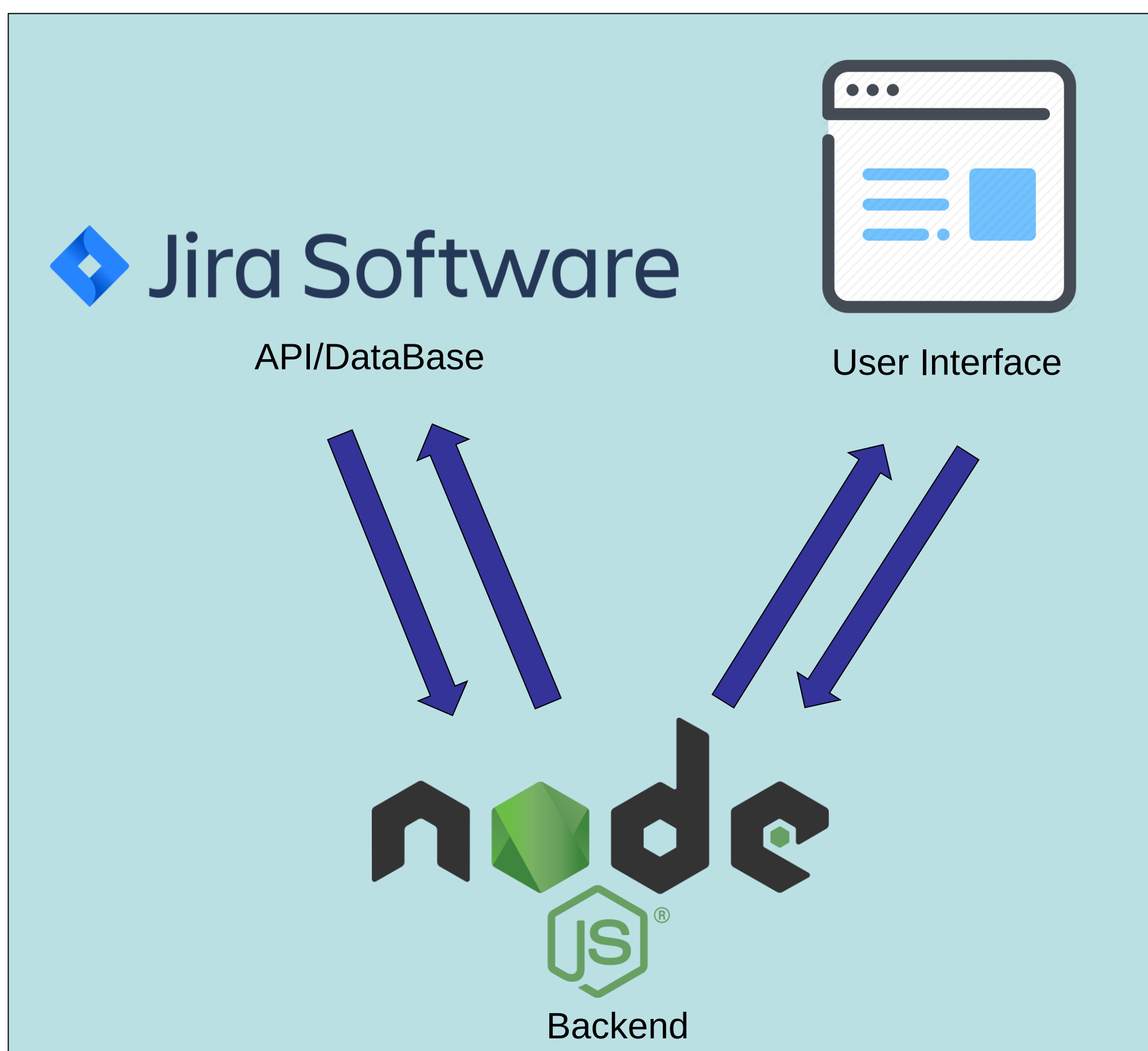
Requirements



To run the application you will need:

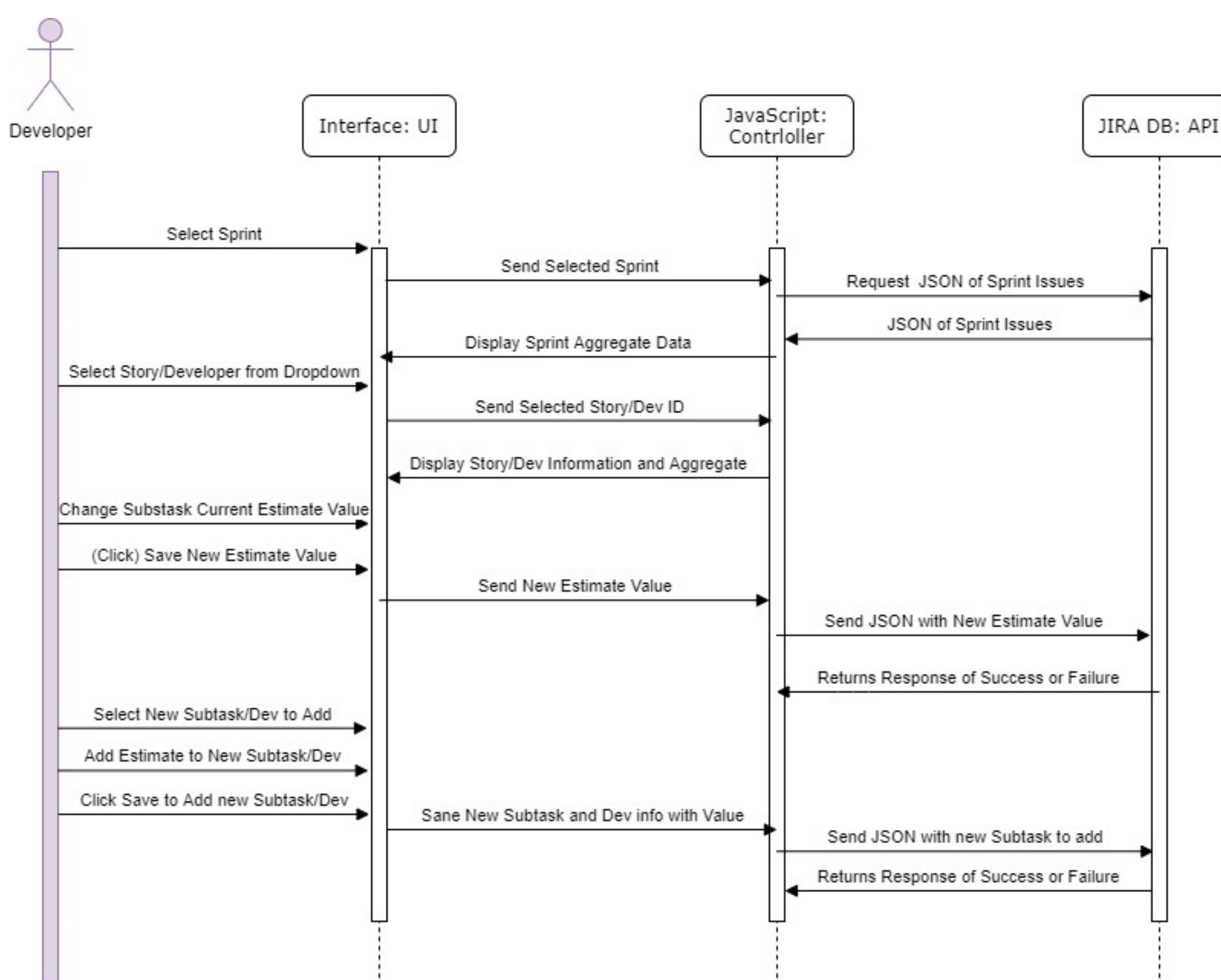
- Node.js (v4.5.0 or later) and npm
- ngrok
- node-pre-gyp
- atlas-connect
- sqlite3

System Design

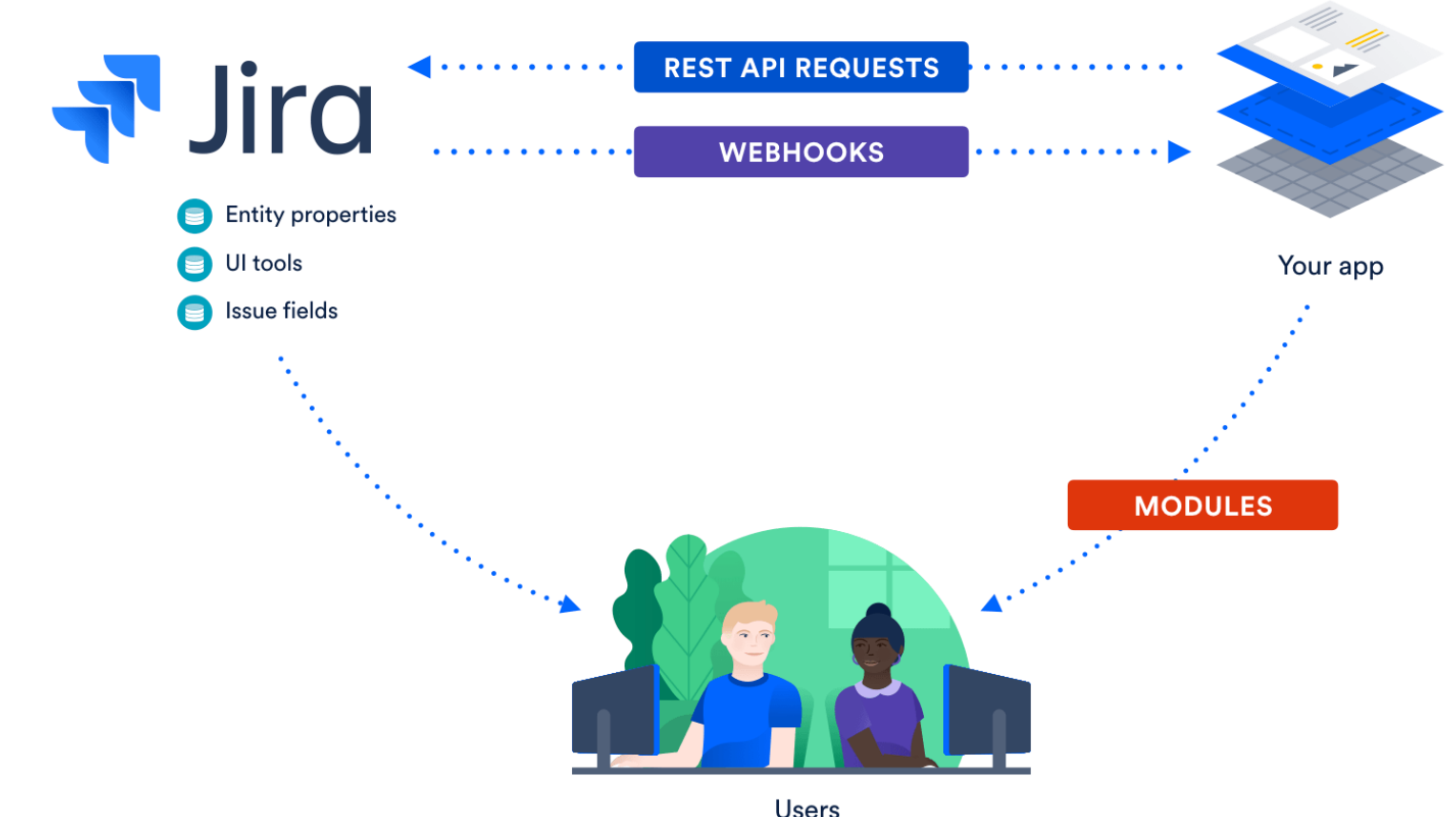


Object Design

Resource Allocation Page



Implementation



Using the already given JIRA developer APIs, the pages implemented through NodeJS can dynamically work with JIRA's already integrated systems. Specific information within a story's different issues, which represent stories, epics, subtasks, etc., can be managed using these APIs directly from the user UI.

Verification

To verify that the current version of Sprint Optimizer' Resource Allocation is working correctly in your development environment, follow these steps:

1. Correctly download Sprint Optimizer and its dependencies.
2. Have a test team in JIRA with its own sprints, issues, subtasks, and related attributes.
3. Run Sprint Optimizer and open it through Atlassian.
4. Open the Resource Allocation page and select a sprint.
5. Try to edit a subtask's estimation.
6. Try to add a new subtask to a dev.

Screenshots

Breadcrumbs / Sub-page / Direct parent page

Sprint resource allocation

SO Sprint 1

Team	Total Remaining Allocation	Team Total Allocation	Not Assigned	Hours per Sprint (Velocity)	Hours per Day	Days in Sprint	Focus Factor	
47		64	176	240	24	10	0.26666666666666666	
Developer breakdown Story breakdown William Elias								
Story	Description	Not Assigned	Dedicated Hours	Epic Key	Sub-Task	Sub-Task Description	Original Remaining Estimate (Hours)	Remaining Estimate (Hours)
SO-1	SP1 - Test Issue 1 - Completed Story with exact time	Unknown	0		SO-33	SO-33: Main order flow broken	1	1
SO-3	SP1 - Test Issue 4 - Incomplete Story with under Estimate	Unknown	0		SO-28	SO-28: Issue 4 Subtask 2	8	3
SO-5	SP1 - Test Issue 3 - Incomplete Story with over estimate	Unknown	0		SO-26	SO-26: Issue 3 Subtask 3	60	1
SO-2	SP1 - Test Issue 2 - Incomplete Story with exact remaining time	Unknown	2		SO-21	SO-21: Test Subtask for Test Issue 2	0	2
Select a Story to Add Estimate Input* Save								
Total Remaining Allocation		Total Allocation	Not Assigned	Hours per Sprint (Velocity)	Hours per Day	Days in Sprint	Focus Factor	
7		2	78	80	8	10	0.025	

Breadcrumbs / Sub-page / Direct parent page

Sprint resource allocation

SO Sprint 1

Team	Total Remaining Allocation	Team Total Allocation	Not Assigned	Hours per Sprint (Velocity)	Hours per Day	Days in Sprint	Focus Factor
47		64	176	240	24	10	0.26666666666666666
Developer breakdown Story breakdown SO-3							
Developer	Not Assigned	Dedicated Hours	Epic Key	Sub-Task	Sub-Task Description	Original Remaining Estimate (Hours)	Remaining Estimate (Hours)
Jose R Martinez	Unknown	0		SO-38	SO-38: Main order flow broken	3	3
William Elias	Unknown	0		SO-28	SO-28: Issue 4 Subtask 2	8	3
Matt Taylor	Unknown	0		SO-27	SO-27: Issue 4 Subtask 1	2	2
Select a Story to Add Estimate Input* Save							
Total Remaining Allocation				Total Allocation			
8				0			

Summary

Sprint Optimizer is a brand new project that aims at giving an agile development team more control and insight over their multiple sprints. It currently includes 2 brand new pages to the JIRA application: Sprint Overview Graph and Resource Allocation.

Acknowledgement

The material presented in this poster is based upon the work supported by FIU and the SCIS department. I thank Shanna Sit for always being willing to help when one is stuck.