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3D task status visualisation when managing projects in Jira Cloud

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To make the right decision, the manager often needs to analyze a large amount of information. The application will help to reduce the time of analysis to a minimum, for it will be faster and easier to see all the necessary information gathered and visualized at once, rather than to analyze each of the tasks separately, spending a lot of time, energy and effort (Figure 1). Therefore, **the purpose** is to create an information system to visualize the status of tasks in the project management system Jira Cloud.

Hypothesis

If it is crucial for managers to check a large amount of data with a minimum working time spent, the "3D Task Viewer" is a useful and convenient application.

The scientific novelty of the obtained results

A unique algorithm for visualization of task execution statuses has been developed, which allows representing complex project data structures and tasks in a convenient, quickly interpreted form of a 3D model.
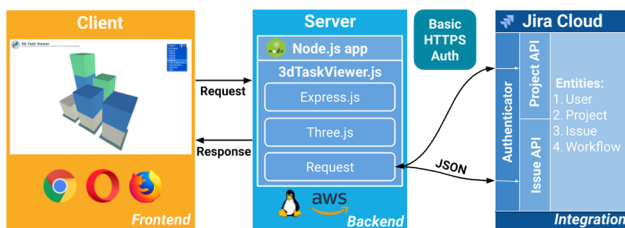

Figure 1. System Architechture

Research methods

- Providing an analytical review of scientific and technical sources on research issues;
- comparing the competitiveness of software products and online libraries to visualize 3D models;
- providing competitive analysis of project management applications;
- modeling;
- data collection, analysis, and processing in the Jira Cloud project management system;
- visualization of the obtained results;
- application testing.

Resutls

An algorithm and application for visualization of task execution statuses have been developed, allowing users to represent complex structures of project data and its tasks in a convenient quickly interpreted form in the form of a 3D model.

This work has great potential for further research and development. It is planned to develop a full-fledged commercial application with its listing on the Atlassian marketplace.

CRITERIA	SOFTWARES / APPLICATIONS		
	3D Issues Map Plugin for Jira	Metric Tool	3D Task Viewer
Compatibility with Jira Cloud	✗	✗	✓
3D mode	✓	✓	✓
Zoom and rotation	✓	✓	✓
Project filter	✓	✗	✓
Issue duration	✓	✗	✓
Issue details hint	✗	✗	✓
Issue status history	✗	✗	✓

Table 1. Competitive analysis of similar programs/applications

Process

- Studied the functionality of Jira Cloud.
- Studied the architecture of the applications that extend the core functionality of Jira Cloud.
- Researched the technology stack used in application development Jira Cloud.
- Researched security requirements and recommended infrastructure for deploying applications.
- Studied ways to visualize progress and status of performed tasks.
- Analyzed various scientific publications.
- Selected the criteria and justification for the analysis of existing solutions.
- Analyzed existing solutions and tools for 3D visualization of the status of tasks. (Table 1)
- Developed the information system for processing and visualizing data in 3D.
- Created the architecture design, software interface, and process visualization system for managing project tasks in Atlassian Jira Cloud. (Figure 2)
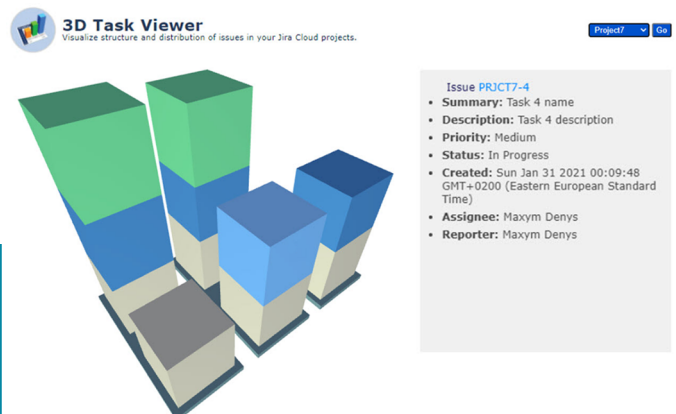- Developed, tested, deployed, and released the application.

Figure 2. "3D Task Viewer" user interface