

JusticeAI Iteration Summary

Iteration 11

Team Members

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Project Summary

[JusticeAI \(ProceZeus\)](#) is a web chat bot that aims to facilitate access to judicial proceedings involving specific domains of law. Users will have the ability to converse with the chatbot, describing in detail the situation for which they wish to pursue litigation. The system, which will leverage the power of machine learning and natural language processing, will guide the user through a process wherein they'll be prompted with a series of questions relating to their potential case allowing the system to ultimately determine, based on provincial jurisprudence, whether the user has a valid case worth pursuing in the judicial system. Alternatively, the system may also suggest remedies in lieu of legal action if it is deemed unlikely to be in the user's best interest.

Velocity

The primary focus of iteration 11 was to add a dashboard that would allow users of the system to see more detailed information about the predictions they've been given. The dashboard is accessible after being given at least 1 prediction, displays the probability that the predicted outcome will occur if the case is taken to court along with a table outlining how previous court cases compare to the user's problem. In addition to the dashboard, claim predictions that were not able to be implemented into the NLP system in previous iterations (tenant expulsion,

retaking the rental) were added. Numerous bug fixes and improvements were also implemented, such as progress bar fixes and better way of downloading our training binaries files.

During this iteration, we were able to complete **32** story points along with **5** bugs/developer stories.

The following is a list of user stories that were completed in [Iteration 11](#):

- #370 - [Similarity claim table](#) (5 points)
- #186 - [Claim: Retaking the rental](#) (8 points)
- #184 - [Claim: Tenant Expulsion](#) (8 points)
- #43 - [Dashboard Reporting of Results](#) (8 points)
- #37 - [Legal Definitions](#) (3 points)
- #375 - [DEV STORY: Improve prod version visibility](#)
- #380 - [DEV STORY: Improve ML binary downloader](#)
- #382 - [DEV BUG: Outdated ML Models](#)
- #368 - [BUG: Fix Progress Bar Stuck at 100%](#)
- #378 - [BUG: Procezeus doesn't understand issue description](#)

Plan for Next Iteration

In iteration 12, we will focus on improving the front end portion of the system. This is done so that we can deliver a complete and high quality system upon project completion. Additionally, we will be adding documentation targeted toward open source developers, since the stakeholders would like other developers to understand and contribute to the system. A total of **24 story points** and **2 bugs** are planned to be completed next iteration.

Shown below are the stories that we will be working on for iteration 12:

- [See similar cases](#) (5 points)
- [Rewrite Chatbot sentences so that they are correctly understood by users](#) (3 points)
- [Ask when the tenant paid you last](#) (5 points)
- [Create a ReadTheDocs Page for Procezeus](#) (5 points)
- [Enter to submit response](#) (1 point)
- [Focus on the input fields of conversation](#) (1 point)
- [DEV STORY: Update microservice READMEs](#) (1 point)
- [Show a "No Regressors" message when there are no regressors to display on the dashboard](#) (1 point)
- [Transpose the similar cases table in the dashboard](#) (1 point)
- [Cursor should be change to a pointer for legal definitions](#) (1 point)
- [Verify Regular Expression for Dates](#) (Bug)

- [If you refresh, the chatbot progress is empty](#) (Bug)

Noteworthy Achievements

- Added web dashboard with various analytics relating to the prediction received.
- Added similarity claim table to dashboard, showing previous cases that are similar to the user's issue.
- Added legal definition tooltips to the chat windows, allowing users to quickly access definitions of more complicated legal terms.
- Added new claim category, allowing users to find out if a landlord retaking a rental (for example to house a family member) is justified.
- Added new outcome, allowing users to find out if expulsion of a tenant from a dwelling is justified. Typically paired with lease termination.
- Fixed bugs such as the stuck progress bars.
- Added dev features such as better binary downloading during builds and version visibility on prod.

Technology, Architecture and Library Changes

No major technology or architecture have been made in iteration 11. Regarding library changes, d3.js has been added as a dependency to the web frontend allowing for charting functionality used in the newly added dashboard.

Component		
Tool	Language	Purpose
Web Frontend		
D3.js	Javascript	Data visualization library

Continuous Integration Processes and Naming/Coding Changes

Given that our OCR story was put on hold, the task_service was removed from our continuous integration build, reducing the build time from approximately 30 minutes to 24 minutes. All other aspects of the continuous integration processes were unchanged.

Unit Tests and Code Coverage

Line coverage after iteration 11 is currently at 70.42%. As can be noticed in the figure below, we have slightly increased our code coverage from the last iteration, which had 68.63% line coverage.

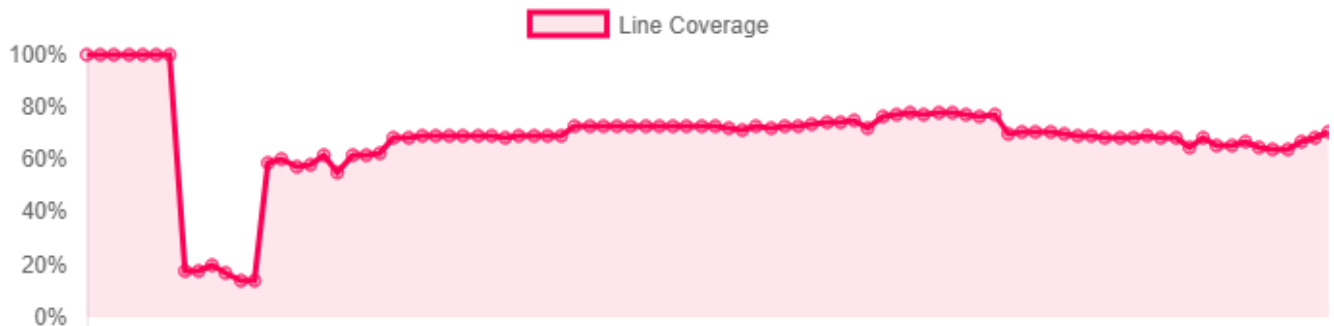


Figure 1. JusticeAI Line Coverage Over Time

Iteration 10 Retrospective

What went well

- Dashboard is very good and impressed the product owner
- Nearly all stories that could have been completed without product owner intervention were completed
- We arrived at the polishing phase in a timely manner
- The team and the product owner are very satisfied with the product (great team morale)

What went less well

- Lots of confusion about meeting times last week
- Product owner is still often a blocker for some stories
- Legal framework is extremely unhelpful

What we can do to fix it

- Next time, we need to confirm meetings in advance and if half of the members are indisposed or find that the meeting is not required anymore, cancel 3 hours in advance for members living far away from the meeting spot (Hall building)
- Concentrate on stories that does not require the product owner's participation despite them having less value