

## DNA To Feature Models

The following report presents the progress of the senior design team for the project, DNA to Feature Models, in the past four weeks. Considerable progress was made towards the first semester goal, and one out of three milestones have been completed. Many changes needed to be made due to the recent outbreak of COVID-19 and quarantine situation. This event proves to be a difficult experience for everyone, but with proper management and positivity, the team dynamic strengthened and hindered not the project.

### Team Members:

- Abdul Rahman El Moughrabi - Developer/Documentation Management
- Ahmad Nazar - Team Leader/Developer
- Ahmed Alketbi - Developer/Debugger
- Hyegeun Gug - Developer/Web Management
- Prathik Nair - Debugger/Developer

### Past Week Accomplishments:

- Enhanced the existing File Parser Algorithm
- Outputted data from BioBricks to a file
- Managed references for linked objects within the models in the backend
- Made an XML file retriever and parser from BioBricks repo.

### Pending Issues:

- Creating an integrable web scraping program
- Output refinement for a web scraper
- Further specificity of the parsing algorithm
- Not all information is fetched by the XML parser.

### Individual Contributions:

#### **Abdul Rahman El Moughrabi**

In the past four weeks, I finished my first milestone for the project and it was finding the best method to scrape data that fits our project requirements the best. I also ended up finishing scraping the first part of the website and changing it into refined output for our data parser to use. I am happy with the results we have so far because it will be the starting point for finishing our project next semester.

#### **Ahmad Nazar**

For the past four weeks, experiments were trialed with respect to file parsing. Enhancements were made to the file parsing algorithm such that for a given part, the algorithm parses a line within a file, splits the string object, and creates a part object based on an array of split strings. This array contains information relevant to creating a specific part. Another experiment was completed upon database population and managing references. References to created objects from a parsed file have been managed and thus completed 50 percent of one of the team's goals for the semester: creating a connection between BioBricks and the plugin. The setup and buildup for the next phases of the project seem to be a success despite the hindrances made by and measures taken for COVID-19.

#### **Ahmed Alketbi**

In the previous four weeks, my task was to parse parts information from BioBricks XML files source. I encountered several issues when trying to parse inner elements because the visual XML file (opened from the browser) and the XML file in java had different entries for some reason. As a result, I had to find a better way to access the desired elements from the XML file instead of expanding elements to reach a specific piece of information. I tried several XML parsers until I found XPath which gave me the ability to specify a path in the XML file and retrieve info from there. This introduced a new challenge for information that does not exist in a direct path in the XML file which is what I am currently trying to solve.

#### **HyeGeun Gug**

In the past four weeks, I tried to finish the personal milestone for the project. When the data is scraped, it will be having an output in a text file, which will be scanned into an array and sorted into proper data output. There was a minor problem with scanning procedure due to not having proper data setup before the scanning. We manage to have single spaces to all the parts we scanned and the scanner will catch the format projecting file that we could parse to our database.

#### **Prathik Nair**

In the past four weeks, I was able to assist the best I can for the project; my goal was to assist in the building and debugging the scraper that we built. Abdul did an excellent with this milestone as well as finishing the scraper. My goal this week is to communicate with him to gather a bigger understanding of what he was able to accomplish with the scraper. I believe the team did an excellent job this semester, I think we are set up well for next semester.

Team Member	Weekly Hours	Total Hours
Abdul Rahman El Moughrabi	6	25
Ahmad Nazar	7	27.5
Ahmed Alketbi	5.5	24.5
HyeGeun Gug	5.5	24
Prathik Nair	5	23

Plans of Action:

- Further, enhance the parsing algorithm for the specificity of more parts
- Integrate automated web scraper into plugin
- Population of database
- Establish a connection between BioBricks Repository and plugin
- Refine the XML parser