Progress Report

- Increment 1 -

Group #25

**1) Team Members**

Please write the name of all the team members, their FSU IDs, and GitHub IDs here.  
  
Erik Princi - ep16g - nole444

Noah Lee - nhl18b - TomahawkEVO

Keene Meckfessel - kcm22f - keenemeck

**2) Project Title and Description**

Briefly describe your project.  
  
Our project is a web application intended to simulate F1 tire strategies in races. We want to have a login-based scoring system with scenarios for users to experiment with. Specifically, users will be presented with a driver in a particular scenario, and are then prompted with all available data to make a decision on the strategy. Each scenario will have an optimal strategy, and users will be scored depending on how close to that strategy they get. Logging the results of the simulation and the users’ predictions will show them their progress over time and will be stored in a database only accessible through an account system.

**3) Accomplishments and overall project status during this increment**

Describe in detail what was accomplished during this increment and where your project stands overall compared to the initial scope and functionality proposed.  
  
Team members worked to begin development on primarily backend systems including the database and simulation model. We are continuing to progress in both of these areas as well as pushing forward with more frontend development as well. One of the major changes from our proposal to now is the incrementation on simulation complexity - we have realized that honing the simulation in to be as accurate as we’d like is going to be difficult, and as such we are starting with a more simple model with fewer variables and then are working to add in additional variables as the project progresses. This is described further in section 4 below.

Great progress on simulation has been made, and we now have a good idea of what it will look like going forward. The API has also been configured so that it can be maneuvered with a GUI that has been implemented on the website. Further progress must be made to hook the data from the API into the simulation so that testing can be expedited.

**4) Challenges, changes in the plan and scope of the project and things that went wrong during this increment:**

Please describe here in detail:

- anything that was challenging during this increment and how you dealt with the challenges

- any changes that occurred in the initial plan you had for the project or its scope. Describe the reasons for

the changes.

- anything that went wrong during this increment  
  
Simulation Model Challenges: This is proving to be more difficult than initially expected. There are a ton of variables that affect how a race strategy plays out. For now, we have chosen to simplify the model and get a loosely accurate prediction. Once that is complete, we will tie it into the OpenF1 API for previous race predictions, and from there we can continue to add variables into the model such as weather, temperature, safety car intervention, flags, etc.

The API doesn’t contain info at fixed time intervals, so it needed to be configured in order to crawl back from a given time to the most recent data point for each of the categories that were scraped. Naturally, these weren’t at uniform times either so each required its own unique method of crawling back until the last valid data point. This means that some values are measured a few seconds (or sometimes milliseconds) from what is displayed, but effectively changes nothing.

**5) Team Member Contribution for this increment**

Please list each individual member and their contributions to each of the deliverables in this increment (be as detailed as possible). In other words, describe the contribution of each team member to:

a) the progress report, including the sections they wrote or contributed to

b) the requirements and design document, including the sections they wrote or contributed to

c) the implementation and testing document, including the sections they wrote or contributed to

d) the source code (be detailed about which parts of the system each team member contributed to and how)

e) the video or presentation  
  
Noah Lee - Contributed to this document, including sections 2, 3, 4 and 6. Also contributed to sections 1 and 2 in the IT document. I have specifically been focusing on creating the simulation model in python and connecting that to the OpenF1 API to accurately model tire degradation and race strategies. I also created a video describing the work that I have done thus far.

Erik Princi- Contributed to the IT, RD, and progress report document. I also was able to connect the Database to the app. I successfully downloaded postgresql as well. I then set up the home.html page using CSS and bootstrap for styling. I then added some issues to the Github page. I also created some function prototypes for the F1 api service requests.

Keene Meckfessel - Contributed to the IT, RD, and progress report documents. Expanded upon the styling of the website and hooked up the API so that it can be accessed fully within the confines of our website. All relevant data is scraped and can be filtered through using the provided forms on the website, and was tested for accuracy by hand (albeit not incredibly rigorously).

**6) Plans for the next increment**

If this report is for the first or second increment, describe what you are planning to achieve in the next Increment.  
  
Our goal going into the next increment is to have a well-established functional prototype, with many functions of the application working and being tested. This will allow us to spend the final increment fine tuning the user interface and simulation logic, bug hunting and otherwise polishing the implementation itself. In addition to both frontend and backend progress, we are looking to connect the OpenF1 API system to our work-in-progress simulation system. This will serve as the backbone of the strategy simulation portion of the project. We look to complete a good majority of the html pages by the next increment and implement role based access as well as user authentication for accounts.

Now that all data is able to be scraped and filtered through, feeding it to the simulation system will be simple, and shouldn’t require any retooling. Creating simple database queries to add users’ previous inputs and outputs once run through the simulation. Being able to track their progress over time is quintessential in our app’s useability and is a high priority going forward.

**7) Stakeholder Communication**

Draft an email communication to the stakeholders of the project succinctly communicating progress and current project status. The email should be intended for a non-technical audience that is expertly aware of the domain your application is designed for. You may not “break the fourth wall” or otherwise refer to the course in the email, instead, you should think about how setbacks or issues you encounter may reflect setbacks that happen in the larger context of production software development and explain them as such. The email should not exceed 500 words.

Dear Stakeholders,

The team has begun working on the app's architecture and design. We have not been able to connect the database to the application yet. We are still working on building the classes that will handle the back-end functionality. We are still learning about PostGreSQL and Flask. We have had a few setbacks due to the recent hurricanes that hit the state of Florida. We look to be back on track after this weekend. Our next steps are to connect the database, create model classes, and create migrations for running the application so that way we can start testing classes. The app’s migration file is what will handle the database migrations so there is no loss of data when starting up the application after closing it down. The team is also working on building the simulation logic for the race predictions. We are going to use previous races from the past and use that data to simulate the present or future races. As discussed above, the team will need more time to implement the above features due to the need of all team members to fully understand all the libraries and dependencies that are needed for the app. There is a lot of documentation that we need to read through first. By the next increment we will have the database connected, the migrations file set up, and simulation logic. By that point we will have a running application that can be tested and viewed for your convenience. We apologize for the delay and will continue to work on the application and will update you on any setbacks that may occur in the future.

Sincerely,

Erik P. , Noah L. and Keene M.

**8) Link to video**

Paste here the link to your video.  
  
https://photos.app.goo.gl/W5dEK3yDg9kpB2Fy8