First Milestone Report

Project Title: Real-time Data Visualization Stimuli

Milestone 1	Activities	Planned Outputs	Achieved Outputs
Restate the milestone from your Draft plan.	Restate the key activities from your draft plan.	Restate the planned outputs from your draft work plan.	Outline the actual outputs compared to what was projected (or type "same as planned")
Develop a real-time data visualisation function on a GUI extension of the existing software.	Conduct project background research to familiarize the team with biological terminologies used in source codes and comments.	Project background documentation	Same as planned
	Acquire requirements and develop skills by studying programming tools and source code.	Pitch presentation	Same as planned
	New interface to real-time pop-up GUI. Create a button on the existing interface for real-time visualisation GUI	New interface	Enlarge the original GUI to create space for the heatmaps layout
	Create 2 heatmap layouts on a new GUI extension. each one represents object visualizations from different directions.	Heatmaps layout	Same as planned additionally a push button is added
	Analyse statistical data to convert a spikes line chart to create corresponding heatmaps.	Heatmaps creation	Same as planned, but data should be read line by line
	Generate heatmaps that visualise data in real-time on pop-up GUI. Insignificant data generation can be stopped immediately to save resources.	Real-time data visualisation	Same as planned except no pop-up GUI created, only enlarge the original

Team reflection on progress	Provide some comments below regarding the completion of this milestone specifically around: 1. How is the project progressing? 2. Are there any differences between projected and actual outputs/outcomes?

1. **Project progressing**

   Our project has been making steady progress and we have successfully achieved the outputs as planned. For the first two activities, to ensure effective communication and identify any inefficiencies, we have been conducting weekly meetings with our supervisor and associate professor. Even during the mid-term break, these meetings were held regularly to ensure all project stakeholders were aligned and working towards common goals. We have been utilizing various resources obtained during these meetings and email communications, such as source code files, video explanations, meeting recordings, and images. We have stored them in our Google Drive for easy access and reference by all team members.

   This approach has helped us successfully produce the necessary documentation, including our pitch presentation and source code understanding. Additionally, to keep the team updated on progress, we communicate through our WeChat group chat and perform daily stand-ups.

   For activities 3 to 6, we have made significant progress by upgrading the current GUI interface to a new layout featuring a heatmap and a push button. Clicking on the button directly reads the data and calls the toolRF() function to display the heatmap in the designated layout section. This new feature greatly enhances the usability and functionality of our project.

2. **The differences between projected and actual outputs/outcomes**

   We approached the new interface activity by expanding the existing GUI interface on the right-hand side using Guide, rather than creating a separate pop-up interface. This provided sufficient space for the heatmap layout and push button.

   In our recent meeting with our supervisor and associate professor, we discussed the possibility of worst-case scenarios, modifications, and new requirements from clients, specifically with regard to computationally intensive analyses. To address this, we considered changing the method of reading data from reading all at once to reading line by line to avoid running the same processes repeatedly.

Team reflection on managing problems		Have you encountered any problems to date? If so, how have you managed them?

1. The first challenge we encountered was the unfamiliarity with MATLAB within the development team. In order to address this challenge, We enrolled in an online MATLAB learning course to strive to master this programming language in the shortest time to promote the development of our project.

2. The second challenge we encountered was that a substantial amount of time was wasted on understanding some source code files that were not essential to our project due to the complexity of the significant amount of source code files and miscommunication within the team.
To address this challenge, we put our concerns on the weekly agenda to ask our supervisors for any impediments and held daily stand-up meetings regularly. with the guidance of our supervisor and efficient communication within the team, we were able to clarify our doubts and get back on track with our project goals.

3. New client requirement: prevent worst-case scenario by reading the data line by line and not re-run lines of data. To address the new requirement, we will investigate and develop a strategy for storing the data within the GUI to avoid re-running the same lines of code.

Supervisor assessment	Please, rate your team (1) effort, (2) project progress and (3) their self-reflection for milestone 1 Rating scale 1-10 as per standard marking scheme, i.e. 5 is a Pass and 7 is a credit. Add some comments to explain your rating
Effort: Progress: Reflection:	*Effort:* *Progress:* *Reflection:*