

Development Environment Project Proposal Plan

Optimizer Dev Tool

GitHub Repo: <https://github.com/PhoebeGHuang/Performance-Analysis-Dev-Tool.git>

Project Name: Optimizer Dev Tool

Programming Language: Python

Team Structure

Team Name: The Optimizers

- **Project Manager:** Nancy Tadrous, **GitHub:** tadrousnancy
 - **Scrum Master:** Gunho Kim, **GitHub:** Kimgun3383
 - **Development Team Member:** Phoebe Huang, **GitHub:** PhoebeGHuang
 - **Development Team Member:** Logan Black, **GitHub:** logan-318
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Our Solution to the Challenge Statement

Our software product will reveal the performance of each part of an inputted code algorithm, making it a useful tool for both students learning time complexity and developers seeking to optimize algorithms. With tools for optimizing code, users will be able to develop more efficient programs, which are more accessible to low-income groups who cannot afford the cost of inefficient algorithms. As an example, less costly algorithms used in computationally intensive medical imaging may reduce the cost of health insurance. In addition, our product will provide students of any income group with a learning resource to develop their technical career skills.

Project Vision via Geoffrey Moore Template

FOR software engineering students and developers who are learning algorithmic analysis techniques in order to optimize code,

WHO need an accessible way to analyze and optimize algorithmic time complexity, and efficiency,

PRODUCT NAME Optimizer Dev Tool,

THAT analyzes all parts of an inputted algorithm, visualizes the time complexity, and offers strategical reports for optimization,

UNLIKE other development tools or generic IDE features which are difficult for students as well as expensive,

OUR PRODUCT provides an educational and accessible way to an optimization tool for students and industry developers.

Risk Management Plan

In reference to our risk management plan, our team discussed potential risks which might come up during the development of our project and found solutions to each risk. Some risks which we noted in our meeting include time zone and schedule differences due to geographical location, other classes, or work schedules. We will prevent issues related to this by planning our meetings ahead of time using our group chat. In addition, we will assign tasks and meet deadlines earlier than expected. If a teammate falls ill or has an unexpected emergency, the remaining tasks will be redistributed among the rest of the group.

Some technical risks relating to hardware or computer crashes may arise. To prevent this, we will use feature branches to prevent chances of loss of data or code. This also decreases the risk of issues when reviewing merge conflicts as we can merge to the main branch after resolving all conflicts. Another risk we discussed is having insufficient testing or a lack of test cases. We will also use the test cases in different developing environments to avoid issues with linking libraries or modules.

Finally, since our project will be developed in Python, a risk of slow processing arises. Another risk to be noted is insufficient or lack of test cases. We will write several test cases throughout the development process to test and analyze the performance so we can debug as needed. We will also use optimized libraries such as NumPy and Matplotlib to decrease the chances of slow processing. This plan will ensure the quality and optimization of our Optimizer Dev Tool.