Criterion A: Planning

Investigation

In order to brainstorm ideas about an application for my IA, I spoke with a classmate during math and asked him what he wanted assistance with that could be made into an application.

Question: What is something I could program that could help you with math right now?
Client: I'd probably say Fourier series.

Question: Why did you ask me to make an application about Fourier series?
Client: I'm in HL Math Analysis and Applications and we're learning about Fourier series which I'm having trouble with.

Question: Why do you want it to be based around images?
Client: I'm more of a visual learner and can take away more from graphs rather than just equations.

Question: Which images would you like to have drawn?
Client: Pi, Among Us Crewmate, Hidden Leaf Village Symbol, Zelda Triforce Symbol.

Rationale for the Proposed Solution

The client wants a software application that demonstrates the different common Fourier series through visual aid to assist in their learning. This application requires a JRE to run, which the computers at the school of the client have, in addition to their personal computer having it as well.

Through researching and coding this software, the developer (myself) will also reinforce his own knowledge of Fourier series. There are useful websites available online, but they require longer reads and lack user-friendly interfaces while also requiring downloads and long durations of time to run their interactive programs. A standalone application with a user-friendly interface and simple definitions, with an emphasis on visual examples would be an easier tool to teach and learn with.

The application will be coded in Java in alignment with the coursework of the class having a focus on OOP.

Success Criteria

1. Application contains the images that are drawn with Fourier series using a Fourier Transform method as requested.
2. Application contains an explanation of how Fourier series create the images.