Project report:

We wanted to try out some sort of a simulation. The topic of fractals is very interesting, it is often quite hard to visualize the way it is formed. We wanted people to understand the process in which they are formed by showing a step-by-step representation. Thus, we have made a project that shows how different kinds of fractals are formed using geometric shapes.

The project allows the user to change an attribute called ‘limit’ that shows the extent to which the fractal is to be presented. It then prints the fractal recursively based on a counter which is initialized to zero and increments every time the main function is called, till it becomes equal to the ‘limit’ attribute.

We worked on creating some fractals on day 1. By the end of the first 24 hours, we were ready with 4 patterns, 3 using geometric shapes and 1 without using the functions provided. After creating the fractals, we decided to make the page more user friendly by allowing the user to change certain aspects of the fractal. We mainly used repl to code. We also used a text editor to speed up the process.

We did face some challenges. We had problems with the logic of fractal but it was fixed quite easily. Most of the time went in trying to make it look user friendly. We wanted the user to understand each step. We overcame this by using “frame by frame” calls to the main function using timestep. We faced problems with one fractal in which we could not show a step-by-step approach without causing an infinite loop. We also faced issues with the html part of the code, taking inputs from the user to make it user friendly. We wanted to change certain attributes for each fractal. But due to time constraints, we decided to only allow the user to change the ‘limit’ of each fractal.

Graphical user interface, chart

Description automatically generated

This is what happens when a penalty tile is clicked. Score and timer reduces by an amount.

Graphical user interface, chart

Description automatically generated

This message shows when both tiles are matching Chart

Description automatically generated

This message comes when bonus tile is chosen

Graphical user interface, text, application

Description automatically generated

The game menu.

Graphical user interface

Description automatically generated

This comes up when the tiles don’t match.

Table

Description automatically generated with medium confidence

This comes up when the game is completed.

Graphical user interface, text, application

Description automatically generated

This message pops up when the game is about to start.

Graphical user interface, chart

Description automatically generated with medium confidence

This message pops up when the time limit is exceed.