Team FooBar()

Report

What language did your team use?

FooBar() is using the Python programming language. We used PyGame for the GUI implementation.

What unit testing framework did your team use?

We used PyUnit for our unit testing.

What IDE's and what development OS's did your team use?

Our team used Microsoft Visual Studio as well as PyCharm on Windows and macOS.

What have you learned from this experience so far?

We have learned the following from this experience:

- The A* algorithm is very difficult to implement
- Python is a sweet language
- Debugging takes longer than initial development
- We should not make assumptions with requirements or how we think our code is working
- Programming for hours and hours straight is not an ideal situation; it makes you want to drown yourself in a bath tub…this project made me want to drown myself in a bath tub filled with orange Gatorade.
- Cooperation is very vital to success
- Effective communication is necessary for cooperation
- We must be anticipating change and be able to adapt to changing requirements
- Agile development

How do you feel this will help you out in the industry?

This project will definitely help us with working on a team and communicating effectively. The project has also helped us understand assigning tasks. By evaluating each individual's skills and taking into account each other's workloads, we were able to do a better job of assigning tasks. With these individual tasks, it taught us the individual responsibilities and accountability of working on a team. For the management side, this project will help in the industry if we were to ever receive a management position. Being in the shoes of the developers and also having to do a little managing, we will be better prepared. Deadlines are another big thing that this will help with in the industry. With Python being one of the leading languages in the industry, learning this language has increased our value as employees and will potentially lead to more job opportunities.

Did this assignment help link the course material to real world application?

This assignment was a good learning experience that helped us apply what we have learned in the course to a real-world application of developing a game.

What was the hardest and what was the easiest part?

The hardest part of this project was refactoring the code for optimization and implementing the A* algorithm. The easiest part of this project was implementing the random (dumb) enemy.

What types of maze randomizer algorithms did your team implement?

We used the Binary Search Tree and Sidewinder maze randomizers.

What type of shortest path algorithm did your team implement for the enemy?

For our smart enemy, we used the A* algorithm.

How did you accomplish each of these applicable guidelines for the project? If they are not applicable, why are they not applicable?

Limit the visibility of information in a program

Python programming language does not have private/public variables or functions.

Check all inputs for validity

We only executed code if the user input matched the predefined string for the corresponding command. If the user inputted a string that did not match, an error message was printed, informing the user that the command could not be recognized. For the variable-length go command, we checked each sub-string for validty, using the isalpha() and isdigit() functions to determine if the sub-string contained only characters or digits, before executing the proper command.

Provide a handler for all exceptions

We manually handled exceptions rather than using predefined try and except functions.

Minimize the use of error-prone constructs

We successfully minimized the use of error-prone constructs by not using any error-prone constructs.

Provide restart capabilities

There is not a need to provide restart capabilities for this iteration because it was not a specification.

Check array bounds

We made sure that no object could be rendered beyond the screen (bounds of the grid).

Include timeouts when calling external components

This is not applicable for this iteration because there are not external components being communicated with.