Planning

Part 1

Bee Class
It Will be used as a base class that all other bee type classes will use. The constructor will be used to set the Health and the status of the bee created.

- BeeType - enum that will hold the type of bee that has been created. This will be used as a constant value and can only be updated in the Bee class.
    - Queen
    - Worker
    - Drone
- BeeStatus - enum that will set the status of a Bee to Alive or Dead. This will avoid the danger of the magic number problem.
- CurrentBee - will store what the bee type has been created.
- DeathThreshold - This will store a float value that if the Health drops below the thresh hold it is considered dead. Each bee type is different. This will be set in the Bee constructor method
- CurrentBeeStatus - will save the BeeStatus enum setting it to Alive or Dead. The Bee will be set to Alive in the Bee constructor method.
- Health is a float value, this is set to 100.00 in the constructor method.

DroneBee, WorkerBee, and QueenBee Class

Class constructor will set the death threshold which has been set as follows:

- Queen - 20.00
- Worker - 70.00
- Queen - 20.00

This will class will have its own DamageDrone method that will check that the Health level has not dropped below the threshold. The integer will be a random number that will be used to calculate the damage percentage (Health / 100) * damage. Checks will be added to see if the current bee is dead if not carry on, to the second check to see if the threshold has passed.

Part 2

For the project, I will use a WinForms App. Text boxes will be used to display the bees that are alive or dead. With a start button and Damage button. If time allows I will add a Restart and close button.

Evaluation

Before I started the task I had to do some research on how to design and create Winforms App and understand the concepts of inheritance for classes. During the planning phase, I realised that my initial idea wouldn't work with the use of BeeTypes and using that class to set the death threshold. It was easier to set this when creating the Drone, Worker, Queen Class.

Part 1 was completed within 40 minutes unfortunately I wasn't able to finish Part 2 within the time limit and required an extra 40 minutes as I made mistakes with writing some of the methods and when setting up the interface. I also didn't set the death threshold for the Queen class so in testing the queen bee was never moved to the death list.

Considering the issues I had and the time constraints I feel that a console app would have been a better solution as listing the alive and dead bees would have been easier than dealing with the issues on setting up the design of the interface.

With more time allowed, I would have liked to add some testing process to make sure that my classes were working correctly. But on the whole, this was a fun task and gives some areas that I need to work on and do some more research.