A Level Computer Science

Assumed Programming Knowledge

You must already have excellent Python programming skills in the following areas:
- Variables and constants
- Data structures – lists, tuples and dictionaries
- Operators – mathematical and logical
- Loops – while and for
- Control statements - if elif else
- Functions – with parameters and return
- Modules – importing and dot notation
- External data – reading from and writing to text files

What New Programming will you Learn?

Python will be the main language we use for learning new concepts
- Object-orientated Design and Programming
- Data Structures
  - Stacks
  - Queues
  - Linked lists
- Trees
- Graphs
- Searching and Sorting methods
- Complexity Analysis

You will also do some SQL, HTML and JS

Essential Summer Work

- Ensure your Python programming skills meet all the areas in the assumed knowledge lists above. There are numerous excellent online courses you could follow.
- Most coursework is completed by developing games. We use Defold (https://defold.com) for this and you must spend a significant amount of time learning to make games with this. If you do not, you will just be giving yourself a lot more work to do in your own time come September. A zip file with excellent tutorials is attached to web page.
- If you have a very strong urge to create your coursework in another area, such as app development, then you should also become a proficient programmer in a relevant language and IDE (such as Swift and XCode) this summer. This is in addition to learning Defold.