

# Year 12 Computer Science

## Summer Task

*There are 3 tasks to complete that cover key topics in the A level CS curriculum you will study in Sixth Form.*

### Task 1: Explore

In recent years, big data is a buzzword in the IT industry. Write an essay that discusses what big data is, the benefits to implementing and using it and why it is so important. (200 - 400 words)

### Task 2: Object oriented programming

Do some research on what is object oriented programming and explain the following key terms and give examples in python to show your understanding.

- a) Instantiation
- b) Class
- c) Object
- d) Inheritance

### Task 3: Develop

Choose one of the three tasks below:

**A** Using the Street Easy Dataset,

<https://raw.githubusercontent.com/Codecademy/datasets/master/streeteasy/brooklyn.csv>

You will need to use python programming language to carry out some exploratory data analysis. Once completed, comment on what you have discovered in the data.

Then, develop a multiple linear regression machine learning model to make predictions on rent.

**B** Read around recommender systems in python and implement one of your own or follow a tutorial. If the latter, you would also need to make at least two changes to show wider understanding. Happy coding!

**C Develop a computer game** using a programming language of your choice and game development engine.

Please submit your completed task to Mr Applewhaite at [napplewhaite@enfieldgrammar.com](mailto:napplewhaite@enfieldgrammar.com) with a subject heading of "Yr 12 CS Summer Task". **Deadline:** 15/7/2019

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