# 1 Assignment Information

## 1.4 Important Dates

* Data file released: Thursday 14th November 2019 (week 16)
* Stage 1 of the submission – This is assessed by Liz during your lab in week 17
* Stage 2 of the submission – This is assessed by Liz during your lab in week 20
* Stage 3 of the submission – DLE eSubmission due on Wednesday 8th January 2020at 12:00
* Stage 4 of the submission – During the examination and assessment weeks 25 and 26, you will be required to attend a viva
* Marking Deadline: Wednesday 5th February 2020

## Assignment Specification

## 2.1 University Elements and Components

* The C1 element is weighted at 35%
  + It is made up of 2 components
    - 1st component – “Classes coded” and it is weighted 15%
    - 2nd component – “Data read into array” and it is weighted at 85%
* P1 element is weighted at 65%
  + Made up of 1 component
    - Viva and it is weighted at 100%

## 2.2 Shall we talk marks instead

* C1
  + Classes written – worth 5.25 marks
  + Data read in – worth 29.75 marks
* P1
  + eSubmission + viva – worth 65 marks

## 2.3 Understanding what you must do and when

* stage 1
  + show your code for 3 main classes – week 17 lab
  + classes should comprise of all attributes of the class
    - at least one constructor
    - all get and set methods (not shorthand)
* stage 2
  + show assignment running – week 20 lab
  + set up an appropriate array data structure to store your data
  + read input file into the array
  + dynamically inspect contents of your array
  + don’t use <Lists> or any other collection
  + must attend own lab session
* stage 3
  + electronic submission – Wednesday 8th January 202 at exactly 12:00
    - submission of entire coded C# application
    - entire application folder and zip it up into an archive file
* stage 4
  + weighted at 65%
  + weeks 24 and 25 and will last about 20 minutes
  + You must bring your code and your whole application with you to demonstrate (USB)
  + Arrive 20 minutes early to login, load your code and test it all before we start
  + Test your code works

## 2.4 More on the viva

* 15-20 minute slots during weeks25 and 26
* Viva schedule nearer the time on the DLE
* You must be available 9am-6pm each day throughout these weeks

# The assignment scenario

Data file - <https://www.kaggle.com/dgomonov/new-york-city-airbnb-open-data/downloads/new-york-city-airbnb-open-data.zip/3>

All admin staff at the Airbnb office will use the system in the same way. They will need to be able to do the following tasks.

### District

* SEARCH and DISPLAY district data appropriately
* ADD a new district
* EDIT a district name

### Neighbourhood

* SELECT and DISPLAY neighbourhood data appropriately
* ADD a new neighbourhood
* EDIT a neighbourhood name

### Property

* SELECT and DISPLAY a property
* ADD a new property
* EDIT/DELETE an existing property

A **District** has the following characteristics or features

* District name
* Number of neighbourhoods in the district
* Array of all neighbourhoods in that district

A **Neighbourhood** has the following characteristics or features

* Neighbourhood name
* Number of properties in the neighbourhood
* Array of properties in that neighbourhood

A **Property** has the following characteristics or features

* Property ID
* Property Name
* Host ID
* Host Name
* Number of properties for host
* Latitude
* Longitude
* Room type
* Price
* Minimum number of nights
* Availability number of days; out of 365 days per year

## Input data file

Read all of the input data from the input file and store it in ONE SINGLE array data structure. There SHOULD be other arrays embedded inside this main array. You SHOULD NOT have several individual arrays. No other method of internal storage of this data is permitted.

Use a windows forms app.

Don’t make assumptions

## Marking Scheme

* Coded classes – 5.25 marks
* Data read into array – 29.75 marks
* Viva – 65 marks
  + **Functionality**
    - District actions – Search and Display, Add and Edit
    - Neighbourhood actions – Search and Display, Add and Edit
    - Property actions – Search and Display, Add, Edit and Delete
    - Added analysis and graphics functionality
  + **Quality**
    - Implementation/Coding style
    - Interface, Usability and User Feedback

# You must not take ‘Shortcuts’

* The data must be stored in a single array
  + You may not use <List>
  + If using arrays, then only the .Length property may be used
* Don’t make use of C# built in functions
  + Get; set; shortcuts and .Contains
* EXTENDED application
  + Do not use any C# chart components for drawing graphs
    - For bars use standard graphics methods of DrawRectangle() or FillRectangle()
    - <https://msdn.microsoft.com/en-us/library/system.drawing.graphics%28v=vs.110%29.aspx>
    - Do not hard code an absolute path
      * “C:\Users\Documents\Assignment\heathrow.txt”
    - Use a file dialog instead
      * EXAMPLE OF A FILE DIALOGUE

# Assessment Criteria

* Program design
* Program execution
* Program clarity
* You must not change the structure of the input data file
* You must not add functionality to this brief. Focus on doing
  + Good quality code
  + Input validation
  + Modularity
  + A consistent interface
  + Gathering/using user feedback

## 5.1 Penalties

* Fail to present on time, your coded classes – minus 5.25 marks
* Fail to present on time, your code with data read into array – minus 29.75 marks
* Fail to upload code/attend scheduled viva – minus 65 marks

# Getting Help

* Version control – The most widely used application for this is GitHub
* Individual work assignment therefore must be your own work
* DON’T START stage 2 until you understand BOTH BOOKS and LIBRARIES applications
  + BOOKS and LIBRARIES in week 17 and 18
  + Assignment lab support sessions week 19 and 20