**Part 1: Strings, Variables, F Strings, Lists & Dictionaries - 45mins**

1. Create 3 variables **x,y,z** and assign them values and print the sum of those variables. (1point)
2. Create a list of 5 containing these music artists (Beyonce, Wizkid, Burna Boy, Drake & Rihanna) and print the second item in your list (2points)
   1. Change the third item in your list and replace it with - Adele (2points)
   2. Add Craig David and Tems to the list (2points)
   3. How many items do we now have in our list (1points)
3. Convert this —> 2my-first\_name = "Anna" into a Python acceptable variable name based on PEP8 (1point)
4. Find the data types of the following variables: (1point)
   1. x=6.7
   2. y=10
   3. z=True
   4. w=’Hello World’
5. Create a dictionary with the following values Sophia: 5000 Michael: 2000 Lisa: 7000 David: 2500 (2points)
   1. Update Sophia’s salary to 6200 (1point)
   2. Add Emma’s salary Emma: 8000 to the dictionary (1point)
6. Slice this string ‘hello world python is great lovely stuff!’ to only return ‘python is great’ (2points)
7. x=67 y=5 z=67.5 w=10 v =5, Use the correct comparison operators so that it returns the following (2points)
   1. x operator y : Make this true
   2. y operator v: Make this true
   3. W operator z : Make this false
   4. W operator v: Make this false
8. Create a mortgage deposit calculator. Ask the user how much the house is, how much deposit they want to pay in % and calculate the deposit and show the user (4points)
9. Create a loan calculator. Ask the user how much they want to borrow, how many years, the APR is 20%, use the results to print out how much they will pay in total and how much they will each month. Make sure you include the APR%. (5points)
10. Produce meaningful information from this string ‘canada{}usa{}mexico{}australia{}’ (1point)
    1. Now print out mexico 2(points)

**Total Points Available: 30**

**Part 2: Numpy - 30 mins**

1. Create a program that generates 100 random integers and then find the frequency of each one (2points)
2. Generate 5 equally spaced integers in the range 0 to 100 (inclusive) (2points)
3. Output a 5 by 5 array of random integers between 0 and 10 (2points)
4. a = np.array([[1,2,3], [4,5,6]]) b = np.array([[10,11,12], [13,14,15]]) (4points)
   1. Add these arrays
   2. Subtract
   3. Multiply
   4. Divide
5. Create an array of 50 random integers (5points)
   1. Find the sum
   2. Average
   3. Median
   4. Min
   5. Max

**Total Points Available: 20**

**Part 3: If - Else - 45mins**

**If Statements:**

1. Create a password reveal based on user input. (4points)
2. Create a guessing game, using random integers, input and if statements (5points)
3. Create a program that asks a user for a number, depending on whether the number is even or odd, print out an appropriate message - hint: use modulo (6points)
4. Create a rock paper scissors game (10points)

**Total Points Available: 25**