Chapter 2: Iteration P2
Question Sheet 1

Instructions
You will need to use the textbooks from the shelf to complete the questions/tasks. GCSE for OCR Computer Science Student Book. You have all been given your own copy, so just type directly into this document.

Indefinite Loops
With indefinite loops we don't know how many times the code will loop around because in will quit the loop when a condition is met like a definite loop, but this time we don't know when the condition will be met.

1. Look at the pseudocode at the bottom of page 29 and continues over on page 30. What do you think the program would do. Explain below. The user would be asked for a password and if the password is not the 'storedPassword', the program will loop. The loop will run forever until the correct password is entered.
2. Copy the code below into Python or Repl.it. This is an example of an indefinite loop because the number of times it can loop around can vary (is not definite) as it depends on the number of times it takes to get the password correct. Once you have the code working. Explain how the code works below using technical language. The code is an indefinite iteration as it doesn't have a specific amount of times to iterate and it uses a while loop. It checks if the password is not equal to secret and if it's not equal it loops (indefinitely). If it is secret then the program writes a message and ends.

```
 RESTART: //cur-fsm/2014$/UserData/14LallyM/Year 10
ration P2 Question Sheet/Question2.py
Please enter the password: password
Sorry the value entered is incorrect - try again
Please enter the password: secret
Thank you. You have entered the correct password
>>>
```

```
1   #Indefinite Iteration
2
3
4   def password():
5     password = ""
6     while password != "secret":
7       password = input("Please enter the password: ")
8
9       if password == "secret":
10        print("Thank you. You have entered the correct password")
11      else:
12        print("Sorry the value entered in incorrect - try again")
13
14  password()
15
```

3. There is one main difference between the WHILE loop and the DO UNTIL loop, what is it? The do until loop is similar to the while loop but the comparison is not done until the end of the code block. The loop will always run at least once because the condition is checked at the end. The loop will run while the conditions remain unmet.
4. Look at the pseudocode on page 32. It is designed to create a guessing number game. Try to code this up in Python and screenshot your code below. Remember you will need to convert the input to

an integer and there will be a few other differences like using : at the end of IF statements and the elseif are elif in Python etc.

```
import random
mysteryNumber = random.randint(1,100)

guess = 0
while guess == 0:
    guess = int(input("Please enter a number between 1 and 100: "))
    if guess > mysteryNumber:
            guess = 0
            print("Your guess is too high.")
    elif guess < mysteryNumber:
            guess = 0
            print("Your guess is too low.")

print("Well done. You guessed correctly!")
```

```
ration P2 Question Sheet/Question4.py
Please enter a number between 1 and 100: 20
Your guess is too high.
Please enter a number between 1 and 100: 12
Your guess is too low.
Please enter a number between 1 and 100: 15
Your guess is too low.
Please enter a number between 1 and 100: 18
Well done. You guessed correctly!
>>>
```

5. Look at activity 2.3 at the bottom of page 32. You need to improve your game so it gives the user the option to play again. Implement this in your code and screenshot your code below.

```
def main():
    import random
    mysteryNumber = random.randint(1,100)

    guess = 0
    while guess == 0:
        guess = int(input("Please enter a number between 1 and 100: "))
        if guess > mysteryNumber:
                guess = 0
                print("Your guess is too high.")
        elif guess < mysteryNumber:
                guess = 0
                print("Your guess is too low.")
    print("Well done. You guessed correctly!")

main()

print("Do you want to play again? Type 'y' or 'n'")
playAgain = input()
if playAgain == "y":
    main()
else:
    quit()
```

```
Your guess is too high.
Please enter a number between 1 and 100: 27
Your guess is too high.
Please enter a number between 1 and 100: 26
Your guess is too high.
Please enter a number between 1 and 100: 25
Your guess is too high.
Please enter a number between 1 and 100: 24
Well done. You guessed correctly!
Do you want to play again? Type 'y' or 'n'
y
Please enter a number between 1 and 100:
```

6. You have now finished all the tasks for today. If there is still time left in the lesson please continue to read Chapter 2 and Chapter 3. Do not pester your cover teacher and behave like good boys and girls :)