Name: Ethan Armstrong
Year 10 Interleaved Homework 23

This task is not about how much you can remember, it may require you to use the course website to help you answer some questions.

1. Below is a python program.

```
for i in range(1, 3):
    choice = input("Enter a word")
    case = input("upper or lower")
    if case == "upper":
        print(choice.upper())
    else:
        print(choice.lower())
```

Use the program above to complete the following trace table.
Assume the user enters:

- "Sam", "upper"
- "Ayo", "lower"
- "Zoe", "upper"

i	choice	case	output
1	Sam	upper	SAM
2	Ayo	Lower	ayo
Presumable code logic error; i will never = 3 as range (1,3) = [1,2]			

2. Below is some code that is used to check the temperature of an aquarium.

```
def checkTemperature(temp, minTemp, maxTemp):
    if temp < minTemp:
        return "Below Minimum"
    elif temp > maxTemp:
        return "Above Maximum"
    else:
        return "Within Range"
```

a. name one parameter used by the subroutine.
temp

b. state the data type of the return value.
string

c. what would be the output if the following code was ran

```
result = checkTemperature(26, 16, 23)
print(result)
```

☐ Below Minimum
 Above Maximum
☐ Within Range

d. write the code to call the subroutine with the following information
Temp: 16
Minimum Temp: 10
Maximum Temp: 20
checkTemperature(16, 10, 20)

3. Below is a snippet of python code.

```
age = int(input("Enter Age: "))
if age < 18:
    print("You are a child")
elif age > 18 and age < 68:
    print("you are of working age")
else:
    print("you are retired")
```

a. the program contains an error. state the type of error the program contains.
Logic Error

b. correct the error.
elif age >= 18 and age < 68:

c. state the other type of error that programs can contain.

Syntax error

4. Figure 2 shows a python program.

```
validChoice = False
while validChoice == False:
    choice = int(input("Enter your choice [1-10]"))
    if choice >= 1 and choice <= 10:
        validChoice = True
    else:
        print("Invalid choice")
print("Valid choice")
```

Complete the test table for figure 2.

Test Type	Test Data	Expected Result
Boundary	1 AND 10 (2 runs)	OUTPUT Valid Choice
Normal	5	OUTPUT Valid Choice
Erroneous	0 AND 11 (2 runs)	OUTPUT Invalid Choice (loop until valid)

5. Below is a python program.

```
number = input("Enter phone number: ")
while len(number) != 11:
    print("phone number must be 11 numbers long!")
    number = input("Try again: ")
```

a. state the type of check being carried out in the program above.

Length Check

b. tick all below that are also validation checks.

▯ Presence Check

☐ String Check

▯ Range Check

☐ Integer Check

☐ Array Check

6. Write a python program to calculate the total cost of a school supplies order based on the quantity of each item purchased and the type of item.

The costs are:

- Notebook: £2.00 each
- Pencil: £0.50 each
- Eraser: £1.00 each

The program should:

- Ask the user to input the quantity of each school supply item ordered.
- Calculate the total cost of the supplies
- Output the total cost
- The whole program should loop until the user enters "no"

The program has been started for you.

Ensure to apply proper indentation, use meaningful variable names, and adhere to Python syntax in your response.

```
again = "yes"
while again == "yes":
    notebooks = input("Enter number of notebooks")
    while not notebooks.isdigit() and notebooks != "no":
        print("Invalid response")
        notebooks = input("Enter number of notebooks")
    if notebooks == "no":
        again = False
        continue
    pencils = input("Enter number of pencils")
    while not pencils.isdigit() and pencils != "no":
        print("Invalid response")
        pencils = input("Enter number of pencils")
    if pencils == "no":
        again = False
        continue
    erasers = input("Enter number of erasers")
    while not erasers.isdigit() and erasers != "no":
        print("Invalid response")
        erasers = input("Enter number of erasers")
    if erasers == "no":
        again = False
```

```
        continue

    notebooks = int(notebooks)
    pencils = int(pencils)
    erasers = int(pencils)
    total = (notebooks * 2) + (pencils * 0.5) + (erasers)

    print(f"£{total} to be paid")
```