# Homework 10 Programming techniques

1. **Flags**

Look at the following code:

found = False
staff = [ “Sheila”, “Dave”, “George”, “Alison”, “Claire” ]
name = input(“Enter a name: ”)
for i in range(len(staff)):
 if staff[i] == name:
 found = True

if found == True:
 print(“Yes, that person works here”)
else:
 print(“Sorry, that person does not work here”)

State the name of the variable acting as a flag: [1]

Describe the purpose of the program: [1]

Consider this alternative version of the program:

staff = [ “Sheila”, “Dave”, “George”, “Alison”, “Claire” ]
name = input(“Enter a name: ”)
for i in range(len(staff)):
 if staff[i] == name:
 print(“Yes, that person works here”)
 else:
 print(“Sorry, that person does not work here”)

Explain why the version that uses a flag variable is preferable. [2]

1. **Validation**

A taxi firm requires a program that will estimate journey costs. The program shouldn’t allow any journeys to be entered that are over 100 miles. Complete the missing line of code. [1]

distance = int(input(“Enter the distance: ”))

while

 print(“Error, cannot be over 100 miles”)
 distance = int(input(“Enter the distance: ”))

1. **Validation**

This program will not run correctly. Complete the missing line of code and explain
why it is needed. [2]

guess = int(input(“Enter your guess: ”))
while guess != 1337:
 print(“Wrong, try again!”)

1. **Validation**

A program asks for the user to enter their shoe size. Which one will function correctly? [1]

(a)
shoeSize = int(input(“Enter your shoe size: ”))
while shoeSize < 1 and shoesize > 13:
 print(“Error, invalid shoe size”)
 shoeSize = int(input(“Enter your shoe size: ”))

(b)
shoeSize = int(input(“Enter your shoe size: ”))
while shoeSize < 1 or shoesize > 13:
 print(“Error, invalid shoe size”)
 shoeSize = int(input(“Enter your shoe size: ”))

1. **Menu**

Identify and correct the 4 errors in this program: [4]

# Function definitions not included – assume these are correct

# MAIN MENU

choice = “d”

while choice != “d”:

 print(“Would you like to check if a number is:”)

 print(“a. Even”)

 print(“b. A multiple of three”)

 print(“c. A square number”)

 print(“d. Quit”)

 choice = input(“Enter a choice: ”)

 while choice not in (“a”,“b”,“c”,“d”):

 print(“Error, invalid choice”)

 if choice == “a”:

 checkIfNumberEven()

 elif choice == “b”:

 checkIfMultipleOfFive()

 if choice == “c”:

 checkIfSquare()

 else:

 print(“Goodbye!”)
 [Total marks 12]