2025L219G2EL

Coimisiún na Scrúduithe Stáit
State Examinations Commission

Leaving Certificate Examination 2025

Computer Science

Section C

Ordinary Level

Wednesday 21 May Morning 11:30 – 12:30

80 marks

Do not hand this up.

This document will not be returned to the State Examinations Commission.

Instructions

There is one section in this paper.

Section C	Programming	One question Answer all question parts	80 marks

Answer all parts of the question on your digital device.

Calculators may be used during this section of the examination.

The *Formulae and Tables* booklet cannot be used for this section of the examination.

The superintendent will give you a copy of the *Python Reference Guide*.

Ensure that you save your work regularly and when you complete each question part.

Save your files using the naming structure described at the beginning of each question part.

If you are unable to get some code to work correctly, you can comment out the code so that you can proceed. The code that has been commented out will be reviewed by the examiner.

Rough work pages are provided at the end of this booklet. Please note that this booklet is not to be handed up and will **not** be reviewed by an examiner.

At the end of the examination it is your responsibility to ensure that you have saved all of your files onto your external media.

You will be provided with a brown envelope for your external media. Write your examination number on this envelope and place your external media into it before sealing. Place this envelope in the pouch at the front of the red envelope that contains your examination booklet from Section A and B.

There is no examination material on this page

Section C	Programming	80 marks

Answer all question parts.

Question 16

(a) Open the program called **Question16_A.py** from your device. The source code is shown and described briefly below.

Before making any changes, you should save your working copy of the file using the format **ExaminationNumberQuestion16_A.py**. For example, you would save the file as **123456Question16_A.py** if your examination number was 123456.

Enter your examination number in the space provided on **line 2** in your Python file**.**

The program below is the start of a program to help floor tilers calculate the total cost of tiles. The program allows the user to enter the length of a room and then calculates and outputs the total area of the floor.

```
1  # Question 16(a)
2  # Examination Number:
3
4  print("The program")
5
6  length = float(input("What length is the room?: "))
7  width = 20
8
9  area = length * width
10
11 print("The area of the floor is:", area)
```

Make the following changes to the program:

(i) Modify the program so that it first prints out “Welcome to the Tilers Mate” instead of “The program”. When the program is run the output should now look as follows:

```
Welcome to the Tilers Mate
What length is the room?: 10
The area of the floor is: 200.0
```

(ii) Modify the program to display a message stating the length that the user entered in metres. When the program is run the output should now look as follows:

```
Welcome to the Tilers Mate
What length is the room?: 10
You entered a length of: 10.0 metres
The area of the floor is: 200.0
```

(iii) Currently, the width of the room is "hard-coded" into the program. Modify the program so that the user is asked to enter the width of the room. The program should then display a message stating the width that the user entered, in metres.

When the program is run the output may now look as follows:

```
Welcome to the Tilers Mate
What length is the room?: 5
What width is the room?: 6
You entered a length of: 5.0 metres
You entered a width of: 6.0 metres
The area of the floor is: 30.0
```

(iv) Add a new variable with a suitable name for the cost per square metre and assign it the value of 15. This value should be printed to the screen in an appropriate sentence.

When the program is run the output may now look as follows:

```
Welcome to the Tilers Mate
What length is the room?: 5
What width is the room?: 6
You entered a length of: 5.0 metres
You entered a width of: 6.0 metres
The area of the floor is: 30.0
The cost per square metre is: 15
```

(v) The total cost for tiling the floor can be found by multiplying the cost per square metre by the area of the floor. Modify the program to print out the total cost in an appropriate sentence.

When the program is run the output may now look as follows:

```
What length is the room?: 5
What width is the room?: 6
You entered a length of: 5.0 metres
You entered a width of: 6.0 metres
The area of the floor is: 30.0
The cost per square metre is: 15
The total cost is: 450.0
```

This question continues on the next page.

(vi) If the total cost is greater than 1000 then a discount will apply. However, if the total cost is less than 100 then the tiler will not take on the job. Modify the program to output a message based on the following table:

Condition	Output
Cost is more than 1000	You are entitled to a 10% discount
Cost is between 100 and 1000 inclusive	You are not entitled to a 10% discount
Cost is less than 100	Sorry, job is too small

When the program is run the output may now look as follows:

```
What length is the room?: 5
What width is the room?: 6
You entered a length of: 5.0 metres
You entered a width of: 6.0 metres
The area of the floor is: 30.0
The cost per square metre is: 15
The total cost is: 450.0
You are not entitled to a 10% discount
```

Save your file using the format **ExaminationNumberQuestion16_A.py**. For example, you would save the file as **123456Question16_A.py** if your examination number was 123456.

(b) Open the program called **Question16_B.py** from your device. This file contains two comments on lines 1 and 2.

Before making any changes, you should use the format **ExaminationNumberQuestion16_B.py** to save your file. For example, you would save the file as **123456Question16_B.py** if your examination number was 123456.

Enter your examination number in the space provided on **line 2.**

Write a Python program that will calculate the total cost of tiles for a new house.

You should use comments throughout your program to explain your code. You may wish to reuse some of the code you used in **part (a)** as part of your solution.

Your program should meet the following requirements:

1. A message should be printed to the screen stating the following: "Tile Cost Calculator"

2. The user should be asked to enter the price of tiles per square metre. This amount can be a decimal number.

3. The user should be asked for the number of rooms to be tiled.

4. For each room, the number of the room should be printed and the user should be asked to enter the length and width of the room. The length and width can be a decimal number.

5. The total cost of the tiles should be printed to the screen. The amount should be rounded to 2 decimal places.

A sample output is shown below:

```
Tile Cost Calculator
How much do the tiles cost per square metre? 19.75
How many rooms do you want to tile? 3
Room  1
What width is the room?: 12
What length is the room?: 8
Room  2
What width is the room?: 9
What length is the room?: 6
Room  3
What width is the room?: 8.5
What length is the room?: 6.5
The total cost is EUR 4053.69
```

Save your file using the format **ExaminationNumberQuestion16_B.py**. For example, you would save the file as **123456Question16_B.py** if your examination number was 123456.

Space for rough work.

This page will not be reviewed by an examiner.

Space for rough work.

This page will not be reviewed by an examiner.

Space for rough work.

This page will not be reviewed by an examiner.

Space for rough work.

This page will not be reviewed by an examiner.

Acknowledgements

Images
Image on page 4: https://picryl.com/media/worker-tile-tiler-industry-craft-2acc00

Leaving Certificate – Ordinary Level

Computer Science – Section C

Wednesday 21 May
Morning 11:30 – 12:30