2024L219G2EL

Coimisiún na Scrúduithe Stáit
State Examinations Commission

Leaving Certificate Examination 2024

Computer Science

Section C

Ordinary Level

Wednesday 22 May Morning 11:30 – 12:30

80 marks

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There is no examination material on this page

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.

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.

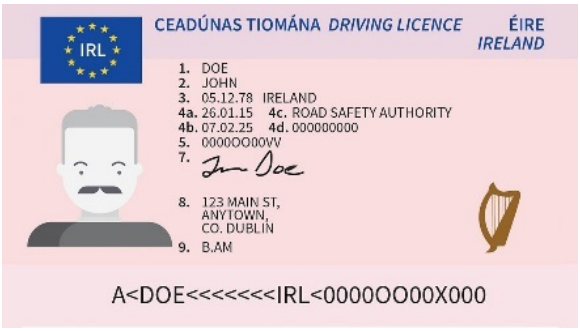
At the end of the examination it is your responsibility to ensure that you have saved your files onto your external media.

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.

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 **CandidateNumberQuestion16_A.py**. For example, you would save the file as **123456Question16_A.py** if your candidate 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 check if a person is eligible for their driving licence. The code works by taking the user's age as an input and checking if it meets a condition.

```
1  # Question 16(a)
2  # Examination Number:
3
4  print("The program")
5
6  age = int(input("What age are you? "))
7
8  if (age >= 17):
9      print("You are entitled to apply for a driving licence.")
```

Make the following changes to the program:

(i) Modify the program so that it first prints out "Welcome to the driving licence eligibility checker" instead of "The program". When the program is run the output should now look as follows:

```
Welcome to the driving licence eligibility checker
What age are you?
```

(ii) Insert a comment in the code that explains what is happening on line 6.

(iii) Print a message stating the age that the user entered. When the program is run the output may now look as follows:

```
Welcome to the driving licence eligibility checker
What age are you? 17
You entered 17
You are entitled to apply for a driving licence.
```

(iv) Currently the program will only output a message when the entered age is 17 or over. Change the program so that if an age less than 17 is entered a suitable message is output. When the program is run the output may now look as follows:

```
Welcome to the driving licence eligibility checker
What age are you? 16
You entered 16
You are not entitled to apply for a driving licence.
```

(v) Amend the program to ask for the user's name. The name should be stored in an appropriate variable. The user's name should be output along with the message about eligibility to apply for a licence.
When the program is run the output may now look as follows:

```
Welcome to the driving licence eligibility checker
What is your name? Sarah
What age are you? 16
You entered 16
Sarah you are not entitled to apply for a driving licence.
```

(vi) Update your program so that it outputs a message to the user based on the criteria in the table below. The output should continue to display the user name. The name Sarah is used in the examples below.

Condition	Output
Age is less than 17	Sarah you are not entitled to apply for a driving licence.
Age between 17 and 74 inclusive	Sarah you are entitled to apply for a driving licence.
Age is more than 74	Sarah you are entitled to apply for a three-year driving licence.

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

```
Welcome to the driving licence eligibility checker
What is your name? Sarah
What age are you? 75
You entered 75
Sarah you are entitled to apply for a three-year driving
licence.
```

Save your file using the format **CandidateNumberQuestion16_A.py**. For example, you would save the file as **123456Question16_A.py** if your candidate number was 123456.

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

Before making any changes, you should use the format **CandidateNumberQuestion16_B.py** to save your file. For example, you would save the file as **123456Question16_B.py** if your candidate number was 123456.

Enter your Examination Number in the space provided on **Line 2.**

Implement a program that will help you to split a restaurant bill with your friends.

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 do the following:

- The program should display an output of "Split Bill Calculator" at the start.
- The user can enter the total amount of the bill.
- The user can enter the number of people that will be splitting the bill.
- Divide the total amount of the bill by the number of people. The amount owed by each person should be printed with a suitable message.

A sample output is shown below:

```
Split Bill Calculator
How much is the bill?: 100
How many people?: 5
You each owe 20.0
```

Save your file using the format **CandidateNumberQuestion16_B.py**. For example, you would save the file as **123456Question16_B.py** if your candidate number was 123456.

Space for rough work.

This page will not be reviewed by an examiner.

Acknowledgements

Images
Image on page 4: https://static.aviva.io/content/dam/aviva-public/ie/articles/car/your-driving-licence-debunked-article-2.jpg
Image on page 6: https://www.louisianafcu.org/articles/the-polite-persons-guide-to-splitting-the-bill

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