MODULE P LANGUAGES AND IDES · P4

IDE tools and how they help a programmer

Original practice questions · 20 marks · ~25 minutes · OCR J277 spec 2.5.2 (with 2.5.1)

Name _____ Date _____

Instructions. Answer all questions in the spaces provided. The marks for each part are shown in brackets [ ]. The total for this worksheet is **20 marks**.

A programmer at a ferry company is writing a program that works out the fare for each passenger. Passengers aged 65 or over pay half the full fare. She writes the program in a high-level language using an Integrated Development Environment (IDE). All the questions on this worksheet are about this program.

1

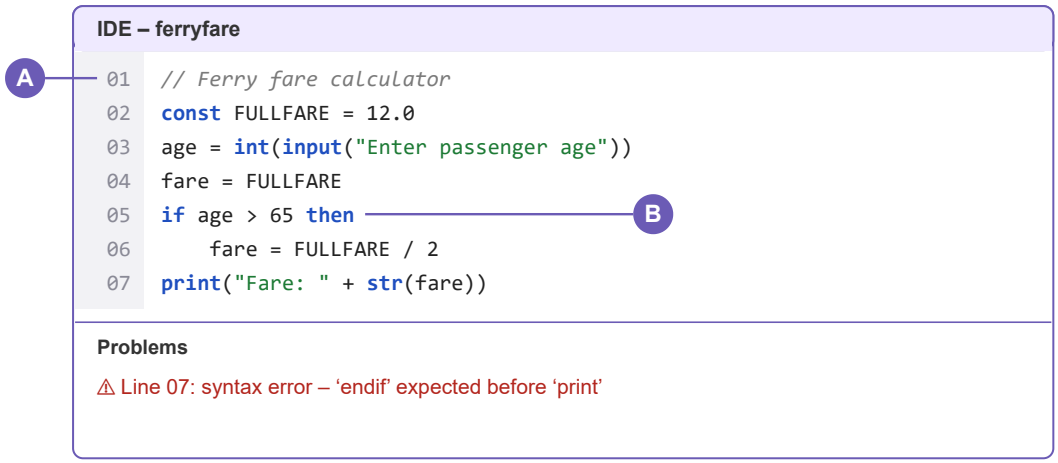
Total: 5 marks

(a) The table describes five things the IDE does while the programmer works on the fare program. Tick (✓) **one** box in each row to show which IDE tool does each thing. **[5]**

What the IDE does	Editor	Error diagnostics	Run-time environment	Translator
Lets the programmer type in the code and change it				
Converts the high-level code into machine code				
Displays the fare that the program outputs while the programmer tests it				
Displays a message giving the line number of a mistake in the code and what the mistake is				
Automatically indents the lines inside an `if` statement				

2 **Total: 4 marks**

The screenshot shows the IDE while the programmer is writing the fare program. The code is shown in OCR Exam Reference Language. Two features of the editor are labelled **A** and **B**.



Feature **A** is line numbering. Feature **B** is keyword highlighting: keywords are shown in a different colour.

(a) Explain how feature **A** helps the programmer. **[2]**

(b) Explain how feature **B** helps the programmer. **[2]**

3 **Total: 2 marks**

Look at the Problems panel at the bottom of the screenshot in Question 2. It is part of the IDE's error diagnostics.

(a) Describe how the error diagnostics help the programmer to correct this error. **[2]**

4 **Total: 4 marks**

The programmer adds the missing `endif`. The program now runs with no error messages. She tests it with an age of 65. The output is `Fare: 12.0` but she expected `Fare: 6.0`.

(a) Describe how the programmer could use tools in the IDE to find the cause of this problem. **[4]**

5 **Total: 5 marks**

(a) Describe how the IDE's run-time environment helps the programmer test the fare program. **[2]**

(b) While she is developing the program, the IDE translates it using an interpreter. Explain **one** way the interpreter helps the programmer while she is developing the fare program. **[2]**

(c) When the program is finished, the ferry company wants an executable file that it can run on the ticket office computers. State the type of translator that produces an executable file. **[1]**

Total for this worksheet: 20 marks