

**AQA Computer Science A-Level**  
**4.6.3 Types of program translator**  
Past Paper Questions

## January 2010 Comp 2

- 4 (a) Companies that develop computer programs to sell always compile the final version of a program before distributing it to customers.

Explain why a compiler is used to produce the final version of a computer program.

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*(2 marks)*

- 4 (b) Scripting programming languages can be used to write programs which are interpreted and executed in a web browser on any Internet user's computer.

Explain why programs written in a scripting language for this purpose are interpreted rather than compiled.

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*(2 marks)*

## January 2011 Comp 2

- 7 (b) If a program is coded using a high level language, then either a compiler or an interpreter will need to be used.

Give **two** advantages of using a compiler, rather than an interpreter, to prepare a runnable program ready for sale.

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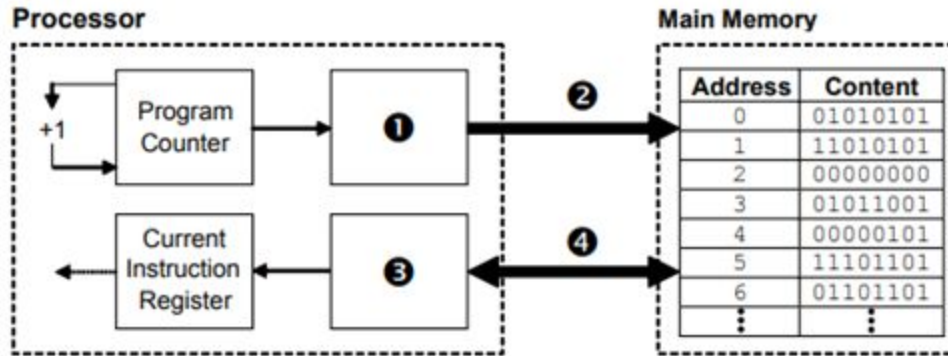
*(2 marks)*



## June 2010 Comp 2

- 7 **Figure 2** shows the processor registers and busses that are used during the fetch part of the fetch-execute cycle, together with the main memory. The values stored in memory locations 0 to 6 in the main memory are machine code instructions.

Figure 2



- 7 (d) The machine code instructions in the main memory in **Figure 2** were produced when an assembly language program was translated into machine code.
- 7 (d) (i) What type of program translator was used to do this?

.....  
(1 mark)

## June 2013 Comp 2

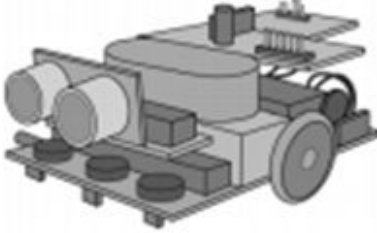
- 4 A school robotics club has recently purchased a robotics kit after the teacher in charge saw an advert in a magazine. The advert is reproduced below.

### RoboEddy - a new educational robot

**Specification**

**Hardware**  
500 Mhz processor  
32 MB RAM  
4 timers  
Wi-Fi communications via WLAN 802.11g radio  
Dual H-bridge motor driver

**Software**  
Built in interpreter for the high level language RobotC  
Directly run assembly code  
XMODEM protocol for reliable file transfer  
Support for various analogue and digital sensors



**Available  
NOW!**

**Only £199**

- 4 (b) The RobotC program that has been copied to the robot can be executed by the built-in interpreter.

How does a high level language interpreter work?

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(2 marks)

## June 2016 AS Paper 2

09 . 3

A program written in a high-level language needs to be translated using either a compiler or an interpreter before it can be executed. Describe **two** differences between a compiler and an interpreter.

**[2 marks]**

**Difference 1:** \_\_\_\_\_

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**Difference 2:** \_\_\_\_\_

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## June 2009 Comp 2

2 Figures 1, 2 and 3 show three versions of the same program.

<b>Figure 1</b>	<b>Figure 2</b>	<b>Figure 3</b>
Total := 60 + 10;	LD #60	00101000 00111100
	ADD #10	00111000 00001010
	ST Total	01100000 00101001

2 (a) What type of translator program would be used to convert **Figure 1's** program into **Figure 3's** program?

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(1 mark)

2 (b) What type of translator program would be used to convert **Figure 2's** program into **Figure 3's** program?

.....  
(1 mark)

## Specimen AS Paper 2

**1 0**

**Figure 4** shows two versions of the same segment of a program.

**Figure 4**

<b>Version A</b>	<b>Version B</b>
if x > 0: y = y + 2 else: y = y - 1	00011100 00110000 00101010 10010010 11101010 00000010 00101100 10010001

**1 0**

**1**

Shade in **one** lozenge to indicate which version, **A** or **B**, in **Figure 4** represents object code.

**[1 mark]**

Version A

Version B

**1 0** . **2** Describe **two** differences between a compiler and an interpreter.

**[2 marks]**

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**1 0** . **3** Explain what intermediate code is **and** why some compilers will produce intermediate code as the final output.

**[2 marks]**

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## Specimen Paper 2

Programs written in a high-level language can be compiled or interpreted.

Companies that develop computer programs to sell usually compile the final version of a program before distributing it to customers.

**0 6** . **5** Explain why the final version of a computer program is usually translated using a compiler.

**[2 marks]**

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The JavaScript programming language can be used to write programs that are executed in a web browser on any Internet user's computer.

- 0 6** . **6** Explain why programs written in the JavaScript language, to be executed in a web browser, are interpreted rather than compiled.

**[2 marks]**

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