

4 A student uses a laptop to write a program that is saved as a text file.

(a) The laptop has utility software and an Operating System (OS).

(i) Describe the file management tasks carried out by an OS.

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(ii) Explain the need for back-up software.

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(b) The student compresses the file before it is emailed to their teacher as an attachment.

(i) Explain the benefits to the teacher of the attachment being a compressed file.

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(ii) Describe **one** lossless method of compressing a text file.

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(c) The student used a program library when writing their program.

Explain the benefits to the student of using library files when writing a program.

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(d) The program code is written using an Integrated Development Environment (IDE).

(i) One presentation feature found in a typical IDE is prettyprint.

Identify **and** describe **one other** presentation feature found in a typical IDE.

Feature .....

Description .....

..... [2]

(ii) One debugging feature found in a typical IDE is single stepping.

Identify **and** describe **one other** debugging feature found in a typical IDE.

Feature .....

Description .....

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