



4.1.1 Subroutines

1) Explain what a subroutine is.

[2 marks]

- Named/callable 'out of line' block of code;
 - It can be called/executed whenever it is needed (to avoid the need to repeatedly write the same code);
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2) State **three** advantages of using subroutines.

For each advantage, you must explain how the advantage is achieved.

[3 marks]

- Easier to test/debug as each subroutine can be tested separately;
 - Easier to understand the code if sensible identifiers are used for subroutine names;
 - Code can be easily reused as each subroutine is independent of rest of program;
 - Makes it easier to work as a team of programmers as each subroutine can be worked on independently;
 - Can be used as often as needed without having to write the code each time;
 - Makes program easier to maintain/update as fewer changes will need to be made to make an update;
 - Allows the use of recursive techniques because subroutines can call themselves;
 - Easier to understand the code as each subroutine can be considered in isolation;
 - Less likely to be errors in the code due to reuse of code;
 - Reduces/eliminates side effects (unexpected changes due to global variables) through use of local variables;
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3) State the difference between a **procedure** and a **function**.

[2 marks]

- A procedure performs a task but does not return a value.
 - A function performs a task and returns a value.
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