**Knowledge questions**

**Describe and explain programming techniques**

Variable

A variable is a piece of data that can be used or changed depending on what operations are carried out on it, or it is a part of.

Loop

Loops are used to repeat a task. This can be a set number of times or until a condition is met.

Array

An array is a collection of data such as names and days of the week. Arrays are useful as you don’t have create individual variables for each item in the array.

**Give details of application development processes**

Application development consists of 5 steps. The first step is getting the requirements from the client, to find out exactly what they want the program to do.

The next step is to design the program, this includes how it will be laid out and how the code will be written. This can be done through writing pseudocode or through flowcharts.

Next is to write the code for the application, following the design you created. Once the code has been written it needs to be tested to ensure that everything is working correctly and removing any bugs that occur.

The final step is implement the application out to the client

**Describe documentation techniques**

Most steps of application development will have documentation. When getting requirements from a client their requirements will be documented, possibly bullet points of requirements or a detailed explanation.

During design, the layout of the program will be documented, as well as pseudocode for how the program will be written.

During testing, every test carried out will be documented that would include what the test was, what the input was, the expected output and the actual output.

**Summarise testing techniques.**

Black box testing

Black box testing is where the tester has no knowledge of how the application is written or no access to the source code. This type of testing is usual entering data and testing whether the outputs are correct.

White box testing

White box testing is where the tester reads through the code to find any problems. This is the most thorough, but also the most time consuming

Grey box testing

Grey box testing is a combination of black and white box testing where the user will have limited knowledge of how the application is written.