

## Part 2

An employee of Quik-Pik is sent to a computer superstore to buy the computer system.

The computer superstore offers special deals to customers. When they buy a computer, a scanner and a printer they get a discount.

The amount of discount is based on the type of printer they choose. The discount is 5% if they buy an inkjet printer and 10% if they buy a laser printer.

The superstore uses software to calculate the total bill for those customers who are due a discount.

This software requires the following inputs.

- Price of computer
- Price of scanner
- Price of printer
- Type of printer (I for inkjet and L for laser)

The output from the program should display the costs of the computer, printer and scanner, the type of printer, the total cost, the discount and the final cost; for example:

Cost of computer:	£799
Cost of scanner:	£80
Cost of printer:	£49
Type of printer:	Inkjet
Total Cost:	£928
Discount:	£46.40
Final Cost:	£881.60

The top level algorithm is shown below. Some steps have been refined.

### **Pseudocode**

#### MAIN STEPS

1. Loop for each customer
2.     Get prices of computer, scanner and printer
3.     Get valid type of printer
4.     Calculate total cost
5.     Calculate discount
6.     Calculate final cost
7.     Display purchase details
8. Loop until no more customers

#### REFINEMENTS

5. Calculate discount
- 5.1     If printer = "I" THEN
- 5.2         discount rate = 0.05
- 5.3     ELSE
- 5.4         discount rate = 0.1
- 5.5     END IF
- 5.6     discount = total cost\*discount rate

Tasks		Evidence requests
1	Refine the following parts of the algorithm: <ul style="list-style-type: none"> <li>• Get valid type of printer (step 3)</li> <li>• Calculate total cost (step 4)</li> <li>• Calculate final cost (step 6)</li> </ul> (NOTE: <i>all refinements must include an algorithm and not simply use a feature of an event-driven language.</i> )	Pseudocode for steps 3, 4, and 6
2	Create a program that matches the refined algorithm.	Listing of program
3	Copy and complete the first six columns of the test data table below using the recommended computer, scanner and printer you have recommended in part 1.	Set of test data

Test Data Table							
Price of Computer	Price of Scanner	Price of Printer	Type of Printer	Expected Discount	Expected Final Cost	Actual Discount	Actual Final Cost
£799	£80	£49	I	£46.40	£881.60		
£899	£50	£149	D				

4	Test your program using your test data and complete the last two columns of the test results table above.	Printed output
---	---	----------------