

Part 2

The company requires computer software to calculate the cost of hiring cars.

The company hires different classes of car. The price bands for the cars are as follows:

Price Band	Cost per day
A	£20
B	£30
C	£40

A customer can hire a car for a minimum of 1 day and a maximum of 100 days. It is assumed that the user will only enter a whole number of days. There is a discount of £2 a day for customers who hire a car for 14 days or more. The discount applies for all days of the hire.

The program should ask for the following inputs:

- Customer name
- Price band of car
- Number of days hired

For each hire, the output should look like the following:

Customer Name: D Main Price Band: C No of Days Hired: 21 Hire Cost: £798

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

Pseudocode

ALGORITHM

1. Get customer name
2. Get valid price band (A, B or C)
3. Decide cost per day
4. Get valid number of days
5. Calculate discount
6. Calculate hire cost
7. Display hire details

REFINEMENTS

3. Decide cost per day
 - 3.1 If price band = A THEN
 - 3.2 cost = 20
 - 3.3 ELSE IF price band = B THEN
 - 3.4 cost = 30
 - 3.5 ELSE
 - 3.6 cost = 40
 - 3.7 END IF
6. Calculate hire cost
 - 6.1 hire cost = (cost-discount)*days
7. Display hire details
 - 7.1 Display customer name
 - 7.2 Display price band
 - 7.3 Display number of days
 - 7.4 Display hire cost

Tasks		Evidence requests																								
1	Refine the following parts of the algorithm: <ul style="list-style-type: none"> • Get valid price band (step 2) • Get valid number of days (step 4) • Calculate discount (step 5) (NOTE: <i>all refinements must include an algorithm and not simply use a feature of an event-driven language.</i>)	Pseudocode for steps 2, 4, and 5																								
2	Create a program that matches the refined algorithm.	Listing of program																								
3	Complete the test table and use it to test your program. <table border="1" data-bbox="263 667 1070 875"> <thead> <tr> <th>Type of Test Data</th> <th>Customer Name</th> <th>Price Band</th> <th>Days</th> <th>Expected Hire Cost</th> <th>Actual Hire Cost</th> </tr> </thead> <tbody> <tr> <td>Normal</td> <td>D Smith</td> <td>B</td> <td>21</td> <td>£588</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Type of Test Data	Customer Name	Price Band	Days	Expected Hire Cost	Actual Hire Cost	Normal	D Smith	B	21	£588														Set of test data
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4	Test your program using your test data.	Printed output																								