

## Part 2

The hotel wants to have a program to calculate the bills for guests checking out each day.

The program will ask how many guests are checking out that day (in range 1 to 10 inclusive) and then for each of those guests, asks their name, the number of nights they stayed and the room type (either “S” for a single, “T” for a twin or “D” for a double). You may assume that all numbers entered are whole numbers.

The program will calculate the amount for each guest. The total is calculated by multiplying the number of nights by the room rate. The room rate depends on the room type (£60 per night for a single room, £90 for a twin and £80 per night for a double).

The program should display the guest’s bill.

The process is repeated for each guest.

The output from the program should look like this:

Guest: Robert Stronach  
No. of Nights: 4  
Room Type: D  
Bill: £320

Guest: Jillian Hill  
No. of nights:2  
Room Type: T  
Bill: £180

Guest: Jacob Hake  
No. of Nights: 3  
Room Type: S  
Bill: £180

The top level algorithm is shown below. Step 7 has been refined.

**Pseudocode**

- ```

1      Get valid number of guests checking out (in range 1 to 10 inclusive)
2      FOR each guest
3          Get guest name
4          Get number of nights
5          Get valid room type (S, T or D)
6          Calculate amount due
7          Display guest details
8      END LOOP

7      Display guest details
7.1    Display guest name
7.2    Display number of nights
7.3    Display room type
7.4    Display amount due
    
```

| Tasks |                                                                                                                                                                                                                                                                                                                                                                         | Evidence requests                |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| 1     | Refine the following parts of the algorithm: <ul style="list-style-type: none"> <li>• Validation of number of guests (step 1)</li> <li>• Validation of room type (step 5)</li> <li>• Calculation of amount due (step 6)</li> </ul> (NOTE: <i>refinements to step 1 and step 5 must include an algorithm and not simply use a feature of an event-driven language.</i> ) | Pseudocode for steps 1, 5, and 6 |
| 2     | Write the code, then implement the program.                                                                                                                                                                                                                                                                                                                             | Listing of program               |
| 3     | Test your program using appropriate data.                                                                                                                                                                                                                                                                                                                               | Printed output                   |