

Part 2

The pupils are asked to write a program to be used by the Youth Club secretary to produce individual membership and guest entry cards.

There are three categories of membership. Junior membership (J) is open to 10, 11 and 12-year olds. Intermediate membership (I) is for anyone aged 13 to 15. Anyone aged 16 or over is a senior member (S). The maximum age allowed is 18. The charge for membership is £2.50. Members receive one guest entry card with their membership, but may buy up to two more at 50p each when they join.

The program should prompt the user to enter the name and age of a member. Only valid ages should be accepted. The program should determine the type of membership (J, I or S). The program should ask whether the member wants any extra guest entrance cards, and then calculate the amount to be paid.

Finally, the program should produce the membership card (showing the member's name, type of membership and amount paid), and any guest entry cards required.

The output from the program might look like this:

ANYTOWN YOUTH CLUB Member: Angela Parvatti Type of member: J Amount paid: £3.50
ANYTOWN YOUTH CLUB Guest Entry Card
ANYTOWN YOUTH CLUB Guest Entry Card
ANYTOWN YOUTH CLUB Guest Entry Card

The top level algorithm for the program is shown overleaf. It has been partly refined.

Pseudocode

```

1      Set membership cost to 2.50
2      Set guest ticket cost to 0.50
3      Get valid age (10 to 18)
4      Calculate membership type
5      Get valid number of tickets (maximum of 2)
6      Calculate amount to pay
7      Display individualised membership card
8      Display guest entry cards

7      Display individualised membership card
7.1    Display name of club
7.2    Display name of member
7.3    Display membership type (J, I or S)
7.4    Display amount paid

8      Display guest entry cards
8.1    Loop for number of cards required
8.2    Display card
8.3    End loop

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Tasks		Evidence required
1	Refine the following parts of the algorithm: <ul style="list-style-type: none"> • Validation of member's age (line 3) • Calculation of membership type (line 4) • Validation of number of tickets (line 5) • Calculation of amount to pay (line 6) 	Pseudocode for steps 3, 4, 5 and 6
2	Write the code, then implement the program.	Listing of program
3	Create <i>test data</i> to test <i>normal</i> , <i>exceptional</i> and <i>extreme</i> conditions.	Table of test results
4	Use your data to test the program.	