APS WORKSHOP 5 Group solution Pseudocode

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(The individual subprocess are provided in the starting and the Main final process with the test code is at the end)

Data Structure

Number of total customers = n

Customer\_age, Cover\_charge, Ticket\_price, Show\_type, Total\_ticket\_price, discount, total\_snack\_charges,Valet\_services,Final\_amount

Subprocess “cover\_charge”

Variables

Cover charge for Child (<18) = C

Cover charge for Adult (18+) = A

Cover charge for Senior (65+) = S

Admission Chid, Admission Adult, Admission Senior

Start

1. Ask for ‘n’ from the customer.
2. Ask for the age of each customer.
3. Store the age of each customer in ‘Customer\_age’.
4. According to the age apply Cover charge.
5. ‘n’ with age<18.
6. ‘C’ applied = $0.75.
7. ‘n’ with age 18+.
8. ‘A’ applied = $4.00
9. ‘n’ with age 65+.
10. ‘S’ applied = $1.50
11. According to the inputs calculate the Cover charge.
12. Number of customers with age<18 \* $0.75 = ‘Admission Child’.
13. Number of customers with age 18+ \* $4.00 = ‘Admission Adult’.
14. Number of customers with age 65+ \* $1.50 = ‘Admission Senior’.
15. Calculate Total Cover charge (‘Cover\_charge = ‘Admission Child + ‘Admission Adult’ +’Admission Senior’)
16. Store the value of cover charge in ‘Cover\_charge’.

End.

Subprocess “Tickect\_price”

Variables

Musical show= ‘M’

Theatre show = ‘T’

Matinee time(12pm-4pm) = ‘Mtime’

Evening time(6pm-9pm) = ‘Etime’

Matine musical price = MMprice

Evening musical price = EMprice

Matine theatre price = MTprice

Evening theatre price = ETprice

Start

1. Ask for ‘n’ from the customer.
2. Ask for the type of show from the customer (‘M’ or ‘T’).
3. Store this in ‘Show type’.
4. Ask for time of show (‘Mtime’ or ‘Etime’).
5. If type of show = ‘M’ then set ‘Ticket\_price’ for
6. ‘Mtime’ = $70.00/person
7. ‘Etime’ = $150.00/person
8. If type of show = ‘T’ then set for ‘Ticket\_price for
9. ‘Mtime’ = $55.00/person
10. ‘Etime’ = $115.00/person
11. According to the inputs calculate the ticket price.
12. If show type = ‘M’ and time =
13. ‘Mtime’ then, MMprice = n\*$70.00.
14. ‘Etime’ then , EMprice = n\*$150.00.
15. If show type = ‘T’ and time =
16. ‘Mtime’ then, MTprice = n\*$55.00.
17. ‘Etime’ then , ETprice = n\*$115.00.
18. Store the relevant price in Total\_ticket\_price.

END.

Sub process “Discount”

* Percentage of discount
* Ticket price

Variables:

* Number of people = N
* Percentage of discount = D
* Total\_ticket\_price (from data structure) = T
* Age = A
* Final cost = F

1. Start.

2. Check (N), if the number of people >1.

       a. If true, go to step #3.

       b. If false, skip group discount calculations.

3. check (N) = 2, then

* Discount amount = {“T” \*(“D = 5” / 100)}.
* Final cost (F) = (“T” – Discount amount).

4. check (N) = 3, then

* Discount amount = {“T” \*(“D = 15” / 100)}.
* (F) = (“T” – Discount amount).

5. check (N) = 4, then

* Discount amount = {“T” \*(“D = 20” / 100)}.
* (F) = (“T” – Discount amount).

6. check (N) = 5 or more, then

* Discount amount = {“T” \*(“D = 30” / 100)}.
* (F) = (“T” – Discount amount).

7. Store the calculated F in “discount” for display.

8. End.

Sub process “snack\_charges”

Variables:

* Non-Alcoholic beverage – NAB.
* Alcoholic beverage – AB
* Misc. Candy Item – CD
* Total cost – C
* Matinee – M
* Evening – EVNG

1. Start.
2. Check feature ticket price:

* Musical ticket price

1. M, go to step #3
2. EVNG, go to step #4

* Theatre ticket price

1. M, go to step #5.
2. EVNG, go to step #6.
3. Types of Musical and total cost for 1 person at Matinee (M)
4. C = ( “NAB = 2.25”)
5. C = ( “AB = 7.50”)
6. C = ( “CD = 1.75”)
7. Total cost for 1 person at Evening (EVNG)
8. C = ( “NAB = 2.25”)
9. C = ( “AB = 7.50”)
10. C = ( “CD = 1.75”)
11. Types of Theater and total cost for 1 person at Matinee (M)
12. C = ( “NAB = 2.25”)
13. C = ( “AB = 7.50”)
14. C = ( “CD = 1.75”)
15. Total cost for 1 person at Evening (EVNG)
16. C = (“NAB = 2.25”)
17. C = ( “AB = 7.50”)
18. C = ( “CD = 1.75”)
19. According to the number and type of snacks selected calculate the C.
20. Store the relevant calculations in “total\_snack\_charges”.
21. If no one want to pay for snack item, go to step end.
22. End

Sub process “Valet\_parking”

Variables:

Time of Day = TD: M = Matinee or E = Evening.

Valet Service Level = VSL: S = Standard or V = VIP

VC = Valet Cost ($)

T = Tip ($)

Tip amount = TA

TVC = Total Valet Charge ($)

**START**

1. Input the TD (M or E) and the VSL (S or V).
2. If the TD is M:
3. If the VSL is S, set the VC to $10.00.
4. T YES: ask for “TA” go to step 6.
5. T NO: go to next step
6. If the VSL is V, set the VC to $15.00.
7. T YES: ask for “TA” go to step 6.
8. T NO: go to next step
9. If the TD is E:
10. If the VSL is S, set the VC to $20.00.
11. T YES: ask for “TA” go to step 6.
12. T NO: go to next step
13. If the VSL is V, set the VC to $30.00.
14. T YES: ask for “TA” go to step 6.
15. T NO: go to next step
16. Store the calculated VC in a variable.
17. TVC = VC + TA
18. Store TVC in “Valet\_services”

END 

Sub process “display”

**START**

1. Display the value stored in ‘cover\_charge’ as cover charge.
2. Display the value stored in 'Total\_ticket\_price’ as ticket price.
3. Display the value stored in 'discount’ as Discount.
4. Display the value stored in ‘total\_snack\_charges’ as snack charges
5. Display the value stored in ‘Valet\_services’ as valet charges.
6. Calculate all the charges displayed accordingly and store the value in ‘Final\_amount’.
7. Display ‘Final\_amount’ as Total amount.

End

MAIN PROCESS

$50 for reservation = R

Start

1. Ask for the e-mail address from the customer.
2. Call subprocess “cover\_charge”
3. Call subprocess "Ticket\_price”
4. Call subprocess “Valet\_parking”
5. Call subprocess "Discount”
6. Ask the customer to deposit R.
7. Generate QR code for authentication upon arrival
8. Ask the customer for snacks
   1. If “yes” call subprocess “snacks” and scan the QR code for tab)
   2. If “no” go to next step.
9. Call subprocess “display” if
   1. ‘Final\_amount’>$50

Total amount = ‘Final\_amount’ +R

* 1. ‘Final\_amount’<$50

Total amount = ‘Final\_amount’ -R

* 1. ‘Final\_amount’=$50

Total amount = ‘Final\_amount’

1. Display the QR code to confirm payments are done.

End

Test code

Start

1. Customer opens the application and enters the email ID.
2. Enters the number and age of each customer.
3. Enters the type and time of the show.
4. Total ticket price and cover charge is recorded.
5. Enters if valet service is needed or not.
6. Discount is applied on total ticket price.
7. A reservation of $50 is submitted.
8. QR code is generated.
9. If any snacks are brought the QR code is scanned and the snack charges are applied.
10. The final charges are displayed.
11. The QR code is scanned for authentication and payment.

End