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Problem Analysis

<table>
<tr><td>Input</td><td>User Input
• Choice number (to identify user)

a) For customer
1. Identity of user
2. Name of user
3. Item code or any alphabet to checkout
4. Quantity of item that wish to buy

b) For member
1. Identity of user
2. Member key code
3. Name of user
4. Item code or any alphabet to checkout
5. Quantity of item that wish to buy

c) For staff
1. Identity of user
2. Staff key code
3. Name of user
4. Item code or any alphabet to checkout
5. Quantity of item that wish to buy

Input from Text File (products.txt)
• Item Name
• Item Price (RM)
• Member Item Price (RM)</td></tr>
<tr><td>Process / Formula / Equation & Constraint</td><td>Program Start
1. System open Text File named products
a. System read products Text File
b. Store Item Name into Array
c. Store Item Price into Array
d. Store Member Item Price into Array
e. System close current Text File

2. Display showchoice Menu (Main Menu)</td></tr>
</table>

	3. Prompt User to Enter Choice a. If user enter '1', direct proceed to get User Name. b. If user enter '2', proceed to get Member key code. c. If user enter '3', proceed to get Staff key code. d. If user enter '4', print appreciation message and Exit program. e. If user enter invalid Choice , print error message and Exit program. 4. Check Error a. Check error for File i. If products Text File not exits, display error message and Exit program. ii. If products Text File exits but the File is Empty, display error message and Exit program. iii. If products Text File exits with correct contents , system open Text File , read and store into Array then proceed b. Check error for choice i. If user enter wrong number for choice (other than 1-4), display error message and tell user system will close soon. ii. If user enter non-number for choice, display error message and prompt user to re-enter choice. iii. If user enter valid choice, proceed. c. Check error for key code i. If user enter wrong Member key code, display error message and prompt user to re-enter Member key code . ii. If user enter wrong Staff key code, display error message and prompt user to re-enter Staff key code. iii. If user enter correct Member key code, print Member discount message and proceed to get User Name. iv. If user enter correct Staff key code, print Staff subsidy message and proceed to get User Name.

	d. Check error for item code i. If user enter wrong item code, display error message and prompt user to re-enter item code. ii. If user enter correct item code, proceed 5. Prompt User to Enter Name 6. Display Warm Welcome message 7. Display Item Name,Item Price and Member Item Price that stored in Array. 8. Prompt User to Enter Item code a. If item code is '1' , get quantity of item1 that wish to buy from user. b. If item code is '2' , get quantity of item2 that wish to buy from user. c. If item code is '3' , get quantity of item3 that wish to buy from user. d. If item code is '4' , get quantity of item4 that wish to buy from user. e. If item code is '5' , get quantity of item5 that wish to buy from user. f. If item code is '6' , get quantity of item6 that wish to buy from user. g. If item code is '7' , get quantity of item7 that wish to buy from user. h. If item code is '8' , get quantity of item8 that wish to buy from user. g. If item code is any alphabet , proceed to checkout. 9. Calculate total items price a. For Choice '1' or '3' (Item1) i. Amount equals Array of item price1 multiply quantity of item1 ii. Sum1 equals addition of sum1 and amount iii. Total quantity of item1 equals addition of total quantity of item1 and quantity of item1.

	(Item2) i. Amount equals Array of item price2 multiply quantity of item2 ii. Sum2 equals addition of sum2 and amount iii. Total quantity of item2 equals addition of total quantity of item2 and quantity of item2. (Item3) i. Amount equals Array of item price3 multiply quantity of item3 ii. Sum3 equals addition of sum3 and amount iii. Total quantity of item3 equals addition of total quantity of item3 and quantity of item3. (Item4) i. Amount equals Array of item price4 multiply quantity of item4 ii. Sum4 equals addition of sum4 and amount iii. Total quantity of item4 equals addition of total quantity of item4 and quantity of item4. (Item5) i. Amount equals Array of item price5 multiply quantity of item5 ii. Sum5 equals addition of sum5 and amount iii. Total quantity of item5 equals addition of total quantity of item5 and quantity of item5. (Item6) i. Amount equals Array of item price6 multiply quantity of item6 ii. Sum6 equals addition of sum6 and amount iii. Total quantity of item6 equals addition of total quantity of item6 and quantity of item6. (Item7)

	i. Amount equals Array of item price7 multiply quantity of item7 ii. Sum7 equals addition of sum7 and amount iii. Total quantity of item7 equals addition of total quantity of item7 and quantity of item7. (Item8) i. Amount equals Array of item price8 multiply quantity of item8 ii. Sum8 equals addition of sum8 and amount iii. Total quantity of item8 equals addition of total quantity of item8 and quantity of item8. b. For Choice is NOT '1' or '3' (Item1) i. Amount equals Array of member item price1 multiply quantity of item1 ii. Member sum1 equals addition of member sum1 and amount iii. Total quantity of item1 equals addition of total quantity of item1 and quantity of item1 (Item2) iv. Amount equals Array of member item price2 multiply quantity of item2 v. Member sum2 equals addition of sum2 and amount vi. Total quantity of item2 equals addition of total quantity of item2 and quantity of item2. (Item3) iv. Amount equals Array of member item price3 multiply quantity of item3 v. Member sum3 equals addition of sum3 and amount vi. Total quantity of item3 equals addition of total quantity of item3 and quantity of item3.

	(Item4) iv. Amount equals Array of member item price4 multiply quantity of item4 v. Member sum4 equals addition of sum4 and amount vi. Total quantity of item4 equals addition of total quantity of item4 and quantity of item4. (Item5) iv. Amount equals Array of member item price5 multiply quantity of item5 v. Member sum5 equals addition of sum5 and amount vi. Total quantity of item5 equals addition of total quantity of item5 and quantity of item5. (Item6) iv. Amount equals Array of member item price6 multiply quantity of item6 v. Member sum6 equals addition of sum6 and amount vi. Total quantity of item6 equals addition of total quantity of item6 and quantity of item6. (Item7) iv. Amount equals Array of member item price7 multiply quantity of item7 v. Member sum7 equals addition of sum7 and amount vi. Total quantity of item7 equals addition of total quantity of item7 and quantity of item7. (Item8) iv. Amount equals Array of member item price8 multiply quantity of item8 v. Member sum8 equals addition of sum8 and amount

vi. Total quantity of item8 equals addition of total quantity of item8 and quantity of item8.

10. Calculate total buys
    a. Customer total buys
        i. Customer total buys equals addition of sum1,sum2,sum3,sum4,sum5,sum6,sum7 and sum8.
    b. Member total buys
        i. Member total buys equals addition of member sum1,member sum2,member sum3,member sum4,member sum5, member sum6,member sum7 and member sum8.

    c. Staff total buys
        i. Staff total buys equals addition of sum1,sum2,sum3,sum4,sum5,sum6,sum7 and sum8.

11. Calculate amount discount applied / subsidy (savings that have achieved)
    a. Customer discount
        i. Discount equals Customer total buys multiply 0.05

    b. Member discount
        i. Discount equals Member total buys multiply 0.05

    c. Staff subsidy
        i. If Staff total buys more than or equal to 5 AND less than or equal to 30, subsidy equal 1.00.
        ii. If Staff total buys more than or equal to 31 AND less than or equal to 99, subsidy equal 5.00.
        iii. If Staff total buys more than or equal to 100, subsidy equal 10.00.

	12. Calculate Total after discount a. For Customer i. Total after discount equals Customer total buys multiply 0.95 b. For Member i. Total after discount equals Member total buys multiply 0.95 c. For Staff i. Total after discount equals Staff total buys minus subsidy. 13. Display Discount comment a. For Customer i. If Customer total buys more than or equals to RM300, print discount comment " Congratulation!! You have achieved 5% discount, buy more save more !!" ii. If Customer total buys less than RM300, print no discount comment "Sorry~ you almost hit the target, purchase more and save more next time!" b. For Member i. If Member total buys more than or equals to RM300, print discount comment " Congratulation!! You have achieved 5% discount, buy more save more !!" ii. If Member total buys less than RM300, print no discount comment "Sorry~ you almost hit the target, purchase more and save more next time!" c. For Staff i. If Staff total buys more than or equals to RM300, print discount comment " Congratulation!! You can enjoy staff subsidy, buy more save more ~~~~" ii. If Staff total buys less than RM300, print no discount comment "Sorry~ you almost

	hit the target, purchase more and save more next time!" 14. Display Receipt a. Display Date and time b. Display Mart details c. Display User Name d. Display Item bought by user e. Display Total quantity of item f. Display Item Unit price g. Display Amount of Sale h. Display Total buys i. Display Amount of discount applied j. Display Savings they have achieved k. Display Total after discount l. Display discount comment <u>Constraint</u> 1. User must follow the given instruction when enter number(s) or word(s). • Enter choice (identity of user) eg. '1' for Customer '2' for Member '3' for Staff only • Enter special key code (for Staff and Member) eg. 'Staff' is considered wrong code, upper and lower case is sensitive for key code. 'STAFF' only for Staff key code. • Enter item code eg. '1' to '8' only
Output	<u>Program Output</u> • Identity of user • Date and time • Mart details • User Name • Item bought by user • Total quantity of item • Item Unit price • Amount of sales • Total buys

	• Amount of discount applied • Savings they have achieved • Total after discount / Total after subsidized • Discount comment

Algorithm (Pseudocode & Flow Chart)

Pseudocode:

```
1.    BEGIN
      int main ( )
2.      Read from file ( )
3.          OPEN products Text File
4.          IF File Open Failure THEN
5.              PRINT Error Message
6.              EXIT Program
7.          ELSEIF File is empty THEN
8.              PRINT Error Message
9.              EXIT Program
10.         ELSE
11.             FOR i=0 < arraySize and i++
12.                     READ Item name into array
                        READ Item price into array
                        READ Member item price into array
13.         ENDIF
14.         CLOSE Text File
15.
        void display showchoice menu ( )
16.     Display menu
17.     Get choice from user
18.     WHILE choice is non numbers
19.           Print Error Message
20.           Prompt user to re-enter choice
21.      ENDWHILE
22.     CASE 1 :
23.     BREAK
24.
25.     CASE 2 :
26.         Prompt user to enter member key code
27.         WHILE member key code not equal sentinel
                                // sentinel = "MEMBER"
28.             PRINT Error Message
29.             Prompt user to re-enter member key code
30.         ENDWHILE
31.         PRINT Discount Message
```

```
32.     BREAK
33.
34.     CASE 3 :
35.         Prompt user to enter staff key code
36.         WHILE staff key code not equal sentinel
                                // sentinel = “STAFF”
37.             PRINT Error Message
38.             Prompt user to re-enter staff key code
39.         ENDWHILE
40.         PRINT Discount Message
41.     BREAK
42.
43.     CASE 4 :
44.         PRINT Exit Message
45.         EXIT program
46.     BREAK
47.
48.     DEFAULT :
49.         PRINT Error Message
50.         EXIT program
51.     BREAK
52.     CASE END
53.
54.     Prompt user enter name
55.     PRINT warm welcome message
56.
        void display from file ( )
57.     DISPLAY item name
        DISPLAY item price
        DISPLAY member item price
58.
59.     WHILE ( Get item code from user )
60.
61.      CASE 1 :
62.         Get quantity of item1 from user
63.          IF choice is equal to 1 or choice is equal to 3 THEN
64.             Amount equals array of item price1 multiply quantity of
                item1.
65.             Sum1 equals sum1 plus amount.
```

```
66.                 Total quantity of item1 equals total quantity item1 plus
                    quantity of item1.
67.             ELSE
68.                 Amount equals array of member item price1 multiply
                    quantity of item1.
69.                 Member sum1 equals member sum1 plus amount.
70.                 Total quantity of item1 equals total quantity item1 plus
                    quantity of item1.
71.           BREAK
72.
73.       CASE 2 :
74.           Get quantity of item2 from user
75.             IF choice is equal to 1 or choice is equal to 3 THEN
76.                 Amount equals array of item price2 multiply quantity of
                    item2.
77.                 Sum2 equals sum2 plus amount.
78.                 Total quantity of item2 equals total quantity item2 plus
                    quantity of item2.
79.             ELSE
80.                 Amount equals array of member item price2 multiply
                    quantity of item2.
81.                 Member sum2 equals member sum2 plus amount.
82.                 Total quantity of item2 equals total quantity item2 plus
                    quantity of item2.
83.           BREAK
84.
85.       CASE 3 :
86.           Get quantity of item3 from user
87.             IF choice is equal to 1 or choice is equal to 3 THEN
88.                 Amount equals array of item price3 multiply quantity of
                    item3.
89.                 Sum3 equals sum3 plus amount.
90.                 Total quantity of item3 equals total quantity item3 plus
                    quantity of item3.
91.             ELSE
92.                 Amount equals array of member item price3 multiply
                    quantity of item3.
93.                 Member sum3 equals member sum3 plus amount.
94.                 Total quantity of item3 equals total quantity item3 plus
```

```
                quantity of item3.
95.          BREAK
96.
97.        CASE 4 :
98.            Get quantity of item4 from user
99.             IF choice is equal to 1 or choice is equal to 3 THEN
100.                    Amount equals array of item price4 multiply
  quantity
                of item4.
101.                    Sum4 equals sum4 plus amount.
102.                    Total quantity of item4 equals total quantity item4
                plus quantity of item4.
103.            ELSE
104.                Amount equals array of member item price4
                multiply quantity of item4.
105.                Member sum4 equals member sum4 plus amount.
106.                Total quantity of item4 equals total quantity item4
                 plus quantity of item4.
107.         BREAK
108.
109.       CASE 5 :
110.           Get quantity of item5 from user
111.            IF choice is equal to 1 or choice is equal to 3 THEN
112.               Amount equals array of item price5 multiply quantity of
                item5.
113.               Sum5 equals sum5 plus amount.
114.               Total quantity of item5 equals total quantity item5 plus
                quantity of item5.
115.            ELSE
116.                Amount equals array of member item price5 multiply
                quantity of item5.
117.                 Member sum5 equals member sum5 plus amount.
118.                 Total quantity of item5 equals total quantity item5 plus
                quantity of item5.
119.         BREAK
120.
121.       CASE 6 :
122.           Get quantity of item6 from user
123.            IF choice is equal to 1 or choice is equal to 3 THEN
```

```
124.                Amount equals array of item price6 multiply quantity of
                    item6.
125.                Sum6 equals sum6 plus amount.
126.                Total quantity of item6 equals total quantity item6 plus
                    quantity of item6.
127.              ELSE
128.                Amount equals array of member item price6 multiply
                    quantity of item6.
129.                Member sum6 equals member sum6 plus amount.
130.                Total quantity of item6 equals total quantity item6 plus
                    quantity of item6.
131.          BREAK
132.
133.        CASE 7 :
134.            Get quantity of item7 from user
135.             IF choice is equal to 1 or choice is equal to 3 THEN
136.                Amount equals array of item price7 multiply quantity of
                    item7.
137.                Sum7 equals sum7 plus amount.
138.                Total quantity of item7 equals total quantity item7 plus
                    quantity of item7.
139.              ELSE
140.                Amount equals array of member item price7 multiply
                    quantity of item7.
141.                Member sum7 equals member sum7 plus amount.
142.                Total quantity of item7 equals total quantity item7 plus
                    quantity of item7.
143.          BREAK
144.
145.        CASE 8 :
146.            Get quantity of item8 from user
147.             IF choice is equal to 1 or choice is equal to 3 THEN
148.                Amount equals array of item price8 multiply quantity of
                    item8.
149.                Sum8 equals sum8 plus amount.
150.                Total quantity of item8 equals total quantity item8 plus
                    quantity of item8.
151.              ELSE
152.                Amount equals array of member item price8 multiply
```

```
                quantity of item8.
153.            Member sum8 equals member sum8 plus amount.
154.            Total quantity of item8 equals total quantity item8 plus
                quantity of item8.
155.       BREAK
156.
157.      DEFAULT :
158.         PRINT Error Message
159.       BREAK
160.      CASE END
161.
162.      Prompt user to enter item code or any alphabet to checkout
163.     ENDWHILE
164.
165.     DISPLAY date and time
         DISPLAY mart details
         DISPLAY receipt details
166.        IF choice is equal to 1 THEN
167.          IF total quantity of item1 not equals 0 THEN
168.            PRINT array of item1
                PRINT total quantity of item1
                PRINT array of item price1
                PRINT sum1
169.          ELSE
170.170.
171.          ENDIF
172.          IF total quantity of item2 not equals 0 THEN
173.            PRINT array of item2
                PRINT total quantity of item2
                PRINT array of item price2
                PRINT sum2
174.          ELSE
175.175.
176.          ENDIF
177.          IF total quantity of item3 not equals 0 THEN
178.            PRINT array of item3
                PRINT total quantity of item3
                PRINT array of item price3
                PRINT sum3
```

```
179.            ELSE
180.180.
181.            ENDIF
182.            IF total quantity of item4 not equals 0 THEN
183.               PRINT array of item4
                   PRINT total quantity of item4
                   PRINT array of item price4
                   PRINT sum4
184.            ELSE
185.185.
186.            ENDIF
187.            IF total quantity of item5 not equals 0 THEN
188.               PRINT array of item5
                   PRINT total quantity of item5
                   PRINT array of item price5
                   PRINT sum5
189.            ELSE
190.190.
191.            ENDIF
192.            IF total quantity of item6 not equals 0 THEN
193.               PRINT array of item6
                   PRINT total quantity of item6
                   PRINT array of item price6
                   PRINT sum6
194.            ELSE
195.195.
196.            ENDIF
197.            IF total quantity of item7 not equals 0 THEN
198.               PRINT array of item7
                   PRINT total quantity of item7
                   PRINT array of item price7
                   PRINT sum7
199.            ELSE
200.200.
201.            ENDIF
202.            IF total quantity of item8 not equals 0 THEN
203.               PRINT array of item8
                   PRINT total quantity of item8
                   PRINT array of item price8
```

```
                    PRINT sum8
204.              ELSE
205.205.
206.             ENDIF
207.          customer total buys = sum1 + sum2 +sum3+ sum4+sum5+ sum6
                                    +sum7+sum8.
208.          DISPLAY customer total buys
209.              IF customer total buys more than or equal to 300 THEN
210.                  discount equals cdis_applied ( )
211.                  double cdis_applied ( )
                      discount = customer total buys multiply 0.05
212.212.
213.                  PRINT amount of discount applied
214.                  customertotaldiscount equals c_totaldiscount ( )
215.                  double c_totaldiscount ( )
                       customertotaldiscount = customer total buys multiply 0.95
216.216.
217.                  PRINT total after discount
218.                  PRINT discount comment
219.              ELSE
220.                  PRINT no discount comment
221.              ENDIF
222.          END IF
223.
224.          ELSE IF choice equals 2 THEN
225.               IF total quantity of item1 not equals 0 THEN
226.                    PRINT array of item1
                       PRINT total quantity of item1
                       PRINT array of member item price
                       PRINT member sum1
227.               ELSE
228.228.
229.             ENDIF
230.              IF total quantity of item2 not equals 0 THEN
231.                  PRINT array of item2
                      PRINT total quantity of item2
                      PRINT array of member item price2
                      PRINT member sum2
232.              ELSE
```

```
233.233.
234.            ENDIF
235.             IF total quantity of item3 not equals 0 THEN
236.                 PRINT array of item3
                     PRINT total quantity of item3
                     PRINT array of member item price3
                     PRINT member sum3
237.             ELSE
238.238.
239.            ENDIF
240.             IF total quantity of item4 not equals 0 THEN
241.                PRINT array of item4
                     PRINT total quantity of item4
                     PRINT array of member item price4
                     PRINT member sum4
242.             ELSE
243.243.
244.            ENDIF
245.             IF total quantity of item5 not equals 0 THEN
246.                 PRINT array of item5
                     PRINT total quantity of item5
                     PRINT array of member item price5
                     PRINT member sum5
247.             ELSE
248.248.
249.            ENDIF
250.             IF total quantity of item6 not equals 0 THEN
251.                 PRINT array of item6
                     PRINT total quantity of item6
                     PRINT array of member item price6
                     PRINT member sum6
252.             ELSE
253.253.
254.            ENDIF
255.             IF total quantity of item7 not equals 0 THEN
256.                 PRINT array of item7
                     PRINT total quantity of item7
                     PRINT array of member item price7
                     PRINT member sum7
```

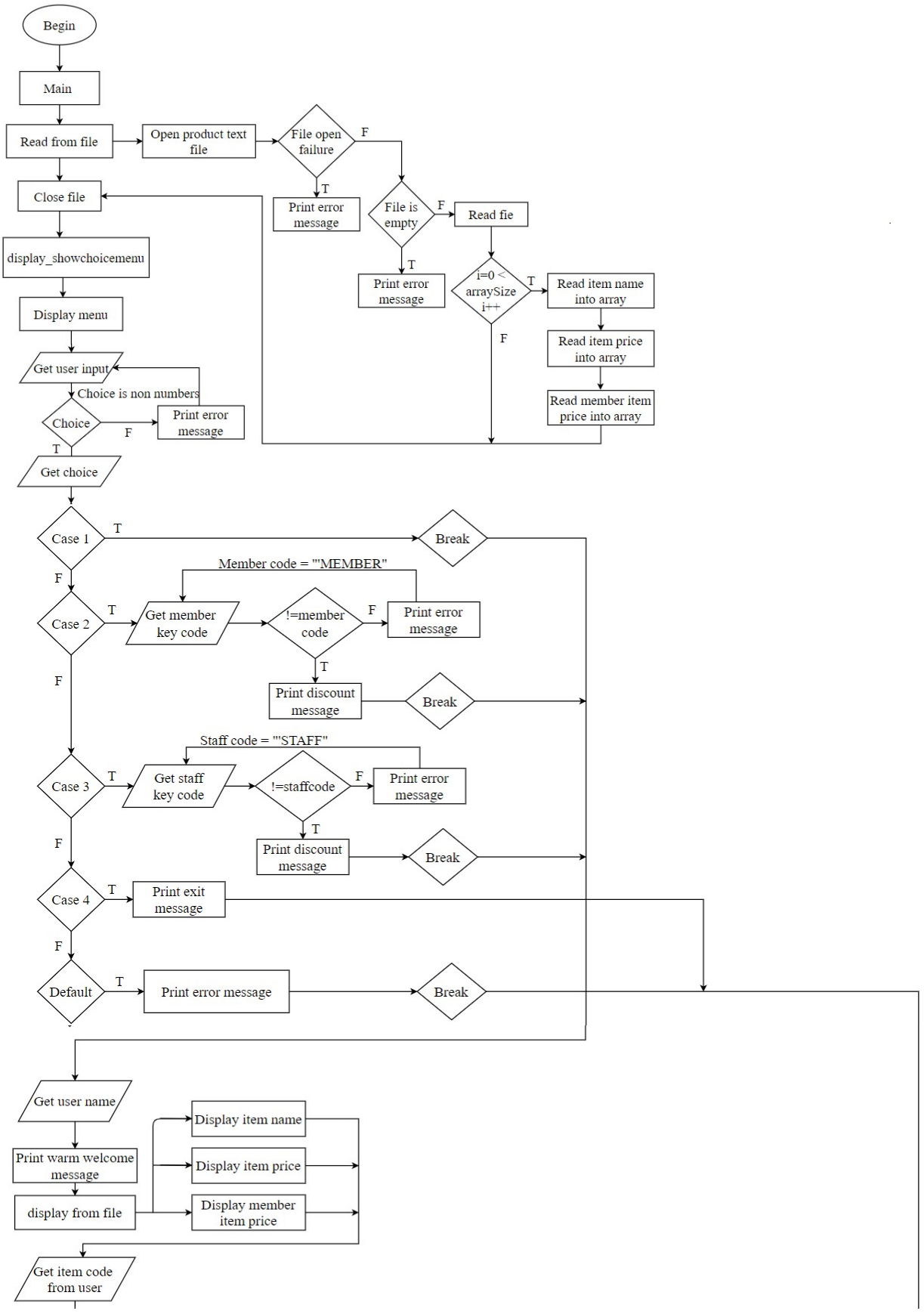
```
257.              ELSE
258.258.
259.             ENDIF
260.              IF total quantity of item8 not equals 0 THEN
261.                  PRINT array of item8
                      PRINT total quantity of item8
                      PRINT array of member item price8
                      PRINT member sum8
262.              ELSE
263.263.
264.             ENDIF
265.        member total buys = member sum1 + member sum2 + member
            sum3 + member sum4 + member sum5 + member sum6 + member
            sum7 + member sum8.
266.        PRINT member total buys
267.             IF member total buys more than or equal to 300 THEN
268.                 discount equals mdis_applied ( )
269.                 double mdis_applied ( )
                     discount = member total buys multiply 0.05
270.270.
271.                 PRINT savings that member have achieved
272.                 membertotaldiscount equals m_totaldiscount ( )
273.                 double m_totaldiscount ( )
                     membertotaldiscount = member total buys multiply 0.95
274.274.
275.                  PRINT total after discount
276.                 PRINT discount comment
277.             ELSE
278.                 PRINT no discount comment
279.            ENDIF
280.        ENDIF
281.
282.        ELSE IF choice is equal to 3 THEN
283.              IF total quantity of item1 not equals 0 THEN
284.                  PRINT array of item1
                      PRINT total quantity of item1
                      PRINT array of item price1
                      PRINT sum1
285.              ELSE
```

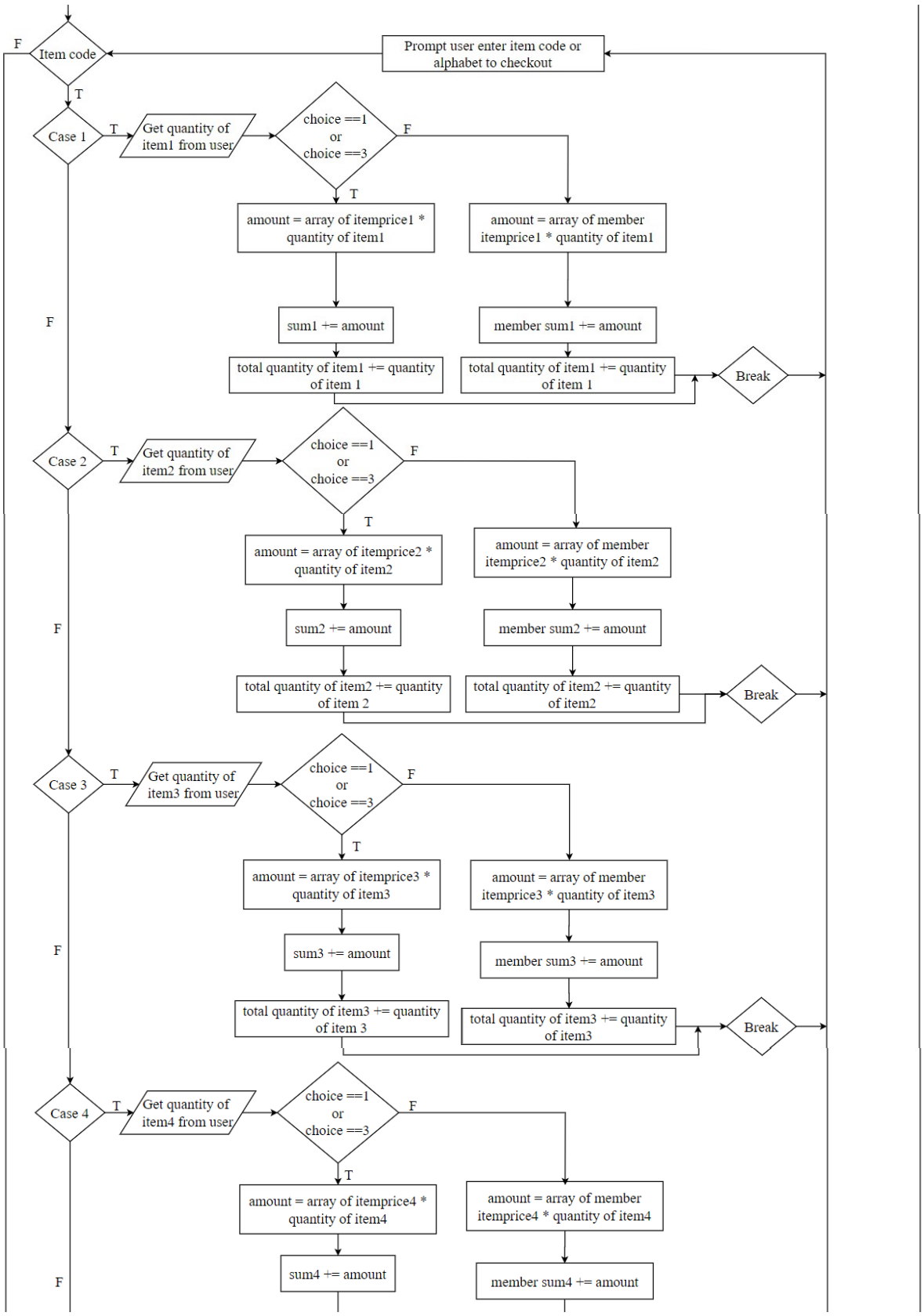
```
286.286.
287.            ENDIF
288.            IF total quantity of item2 not equals 0 THEN
289.                PRINT array of item2
                    PRINT total quantity of item2
                    PRINT array of item price2
                    PRINT sum2
290.            ELSE
291.291.
292.            ENDIF
293.            IF total quantity of item3 not equals 0 THEN
294.                PRINT array of item3
                    PRINT total quantity of item3
                    PRINT array of item price3
                    PRINT sum3
295.            ELSE
296.296.
297.            ENDIF
298.            IF total quantity of item4 not equals 0 THEN
299.               PRINT array of item4
                    PRINT total quantity of item4
                    PRINT array of item price4
                    PRINT sum4
300.            ELSE
301.301.
302.            ENDIF
303.            IF total quantity of item5 not equals 0 THEN
304.                PRINT array of item5
                    PRINT total quantity of item5
                    PRINT array of item price5
                    PRINT sum5
305.            ELSE
306.306.
307.            ENDIF
308.            IF total quantity of item6 not equals 0 THEN
309.                PRINT array of item6
                    PRINT total quantity of item6
                    PRINT array of item price6
                    PRINT sum6
```

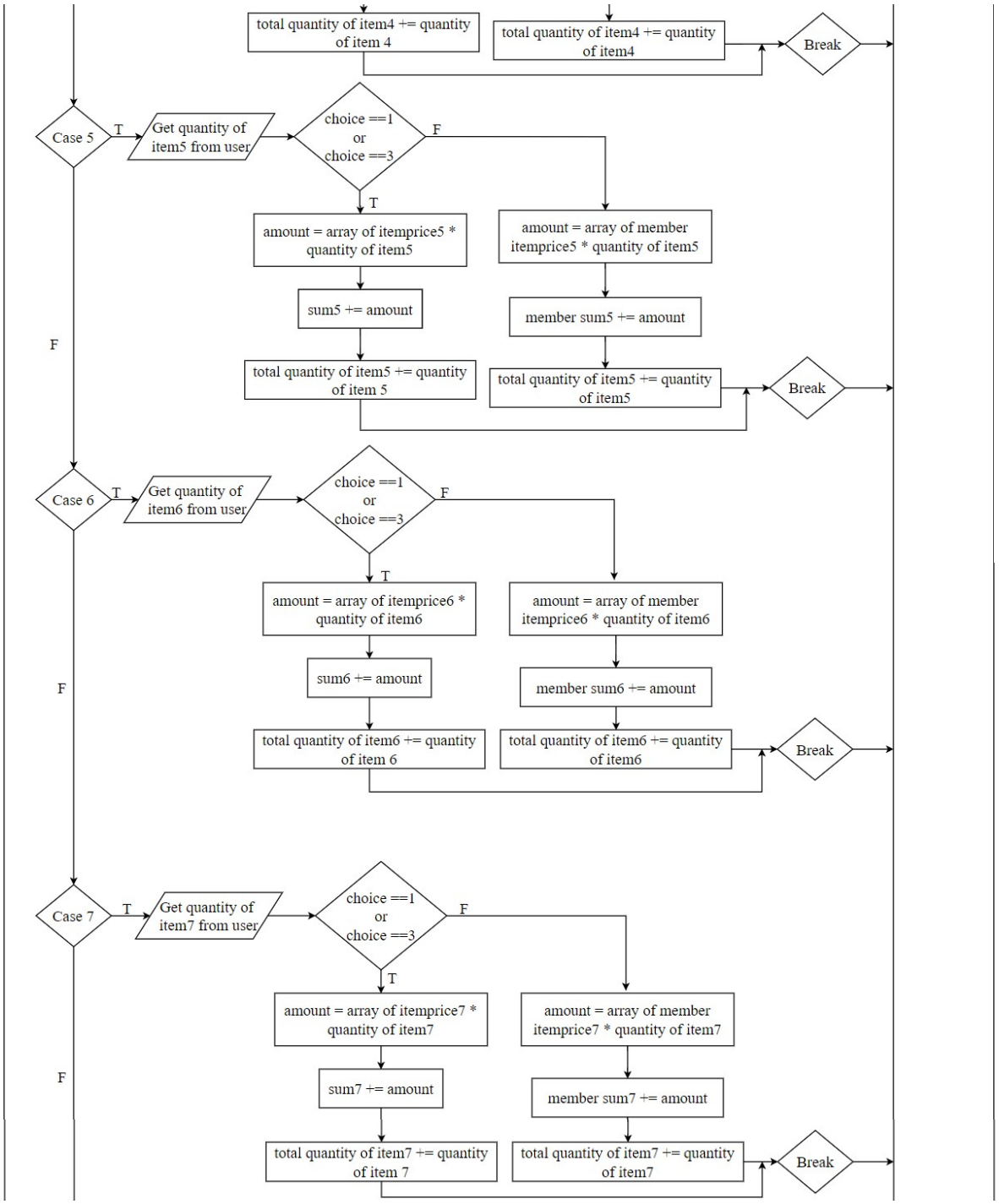
```
310.            ELSE
311.311.
312.            ENDIF
313.            IF total quantity of item7 not equals 0 THEN
314.                PRINT array of item7
                    PRINT total quantity of item7
                    PRINT array of item price7
                    PRINT sum7
315.            ELSE
316.316.
317.            ENDIF
318.            IF total quantity of item8 not equals 0 THEN
319.                PRINT array of item8
                    PRINT total quantity of item8
                    PRINT array of item price8
                    PRINT sum8
320.            ELSE
321.321.
322.            ENDIF
323.        staff total buys = sum1 + sum2 +sum3+ sum4+sum5+ sum6 +sum7
                              +sum8.
324.        PRINT staff total buys
325.        subsidy equals s_subsidy ( )
326.        double s_subsidy ( )
                IF subsidy >= 5 AND subsidy <=30 THEN
                    subsidy = 1.00
                ELSE IF subsidy >= 31 AND subsidy <=99 THEN
                    subsidy = 5.00
                ELSE IF subsidy >=100 THEN
                    subsidy = 10.00
                ELSE
                    subsidy = 0.00
                ENDIF
327.327.
328.        discount equals sdis_applied ( )
329.        double sdis_applied ( )
330.            IF subsidy >=5 AND subsidy <=30 THEN
                    subsidy = 1.00
                    discount = staff total buys – subsidy
```

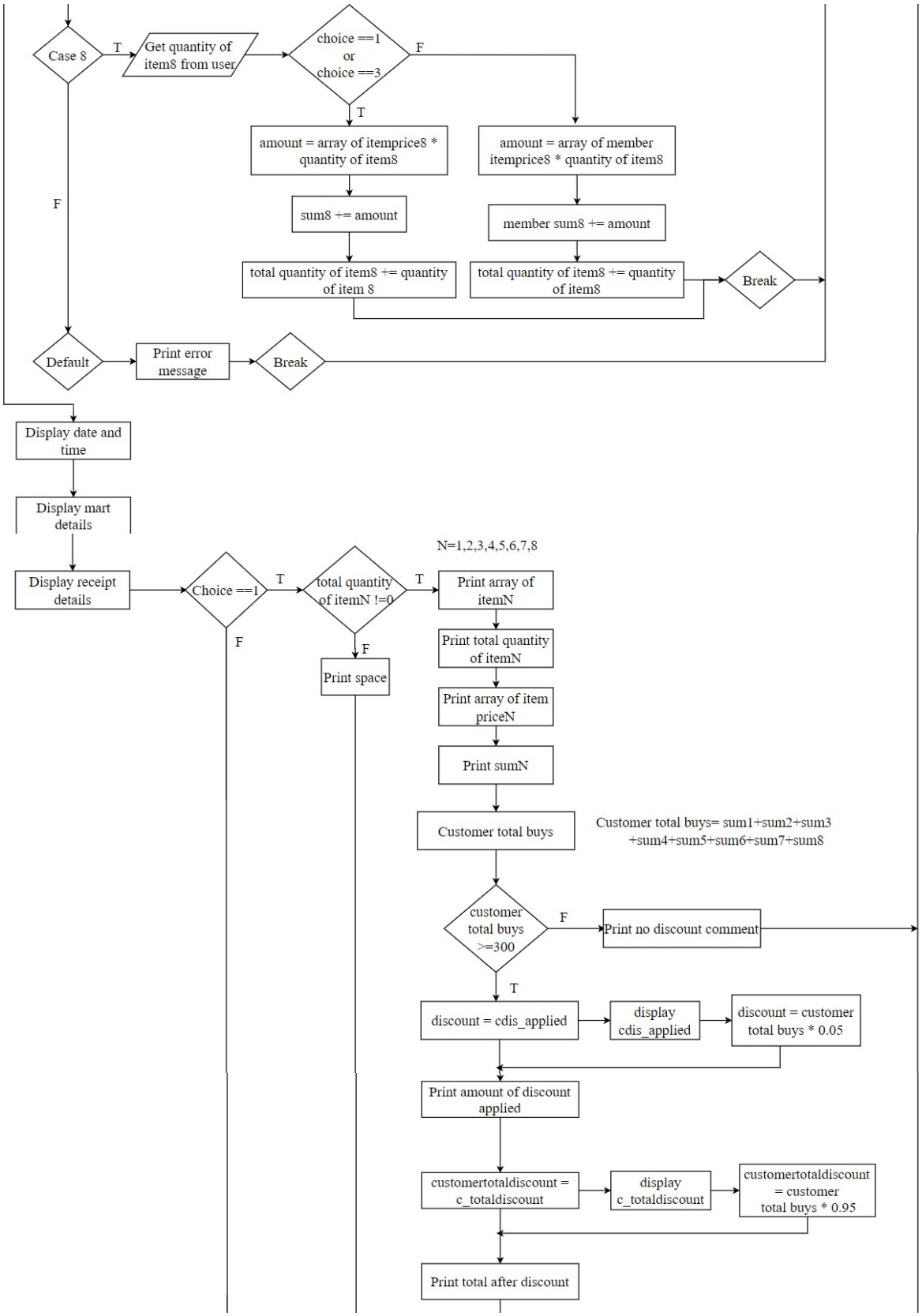
```
                    ELSE IF subsidy >=31 AND subsidy <=99 THEN
                       subsidy = 5.00
                       discount = staff total buys – subsidy
                    ELSE IF subsidy >=100
                       subsidy = 10.00
                       discount = staff total buys – subsidy
                    ELSE
                       subsidy = 0.00
                    discount = subsidy
331.331.
332.        PRINT savings that staff have achieved
333.            IF discount more than 0 THEN
334.                PRINT total amount after subsidize
335.                PRINT subsidize comment
336.            ELSE
337.            PRINT unsubsidized comment
338.            ENDIF
339.         ENDIF
340.
341.        ELSE
342.            PRINT Error Message
343.        ENDIF
344.        PRINT appreciation message
345.
346.        END
```

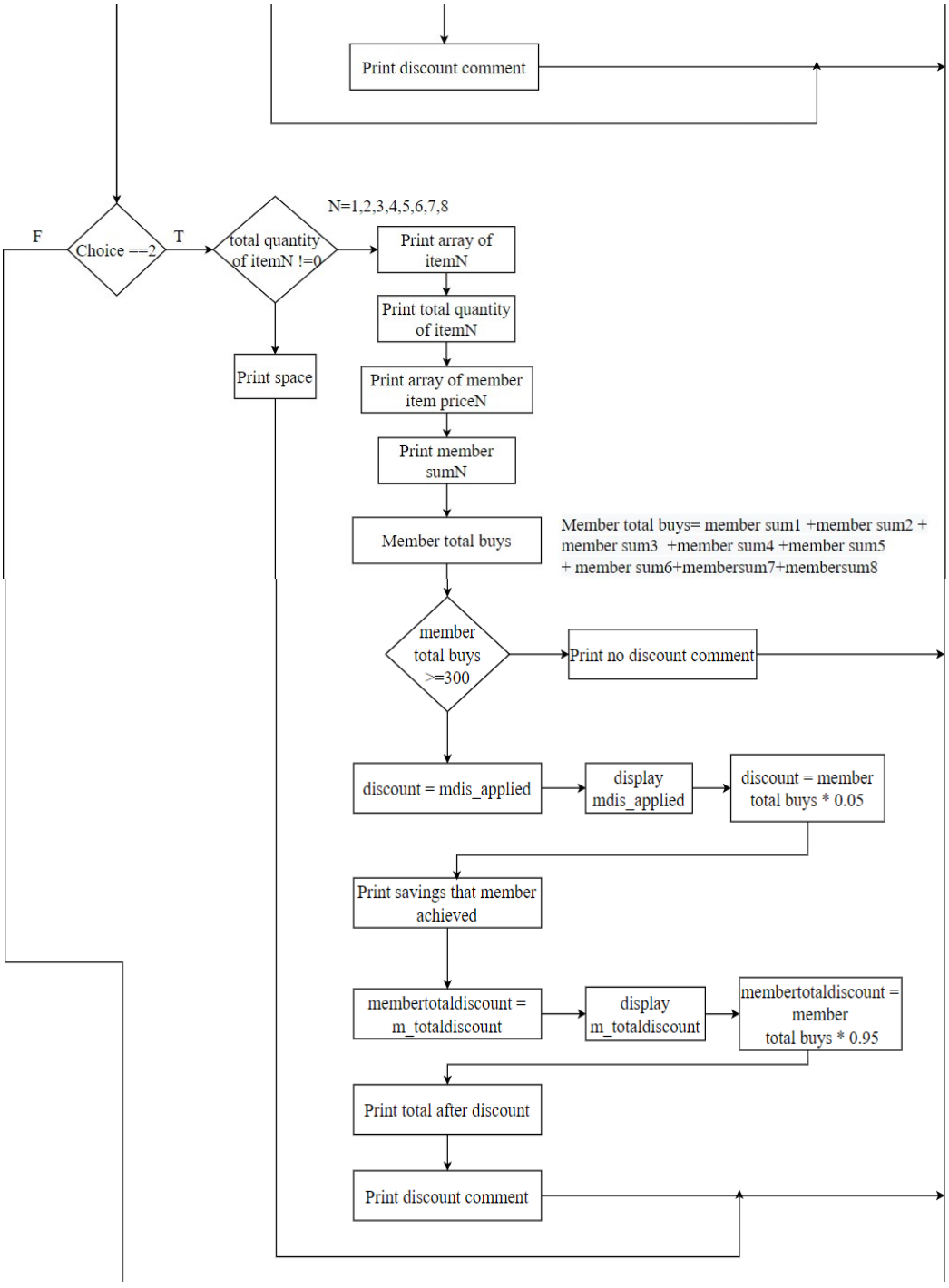
Flowchart :

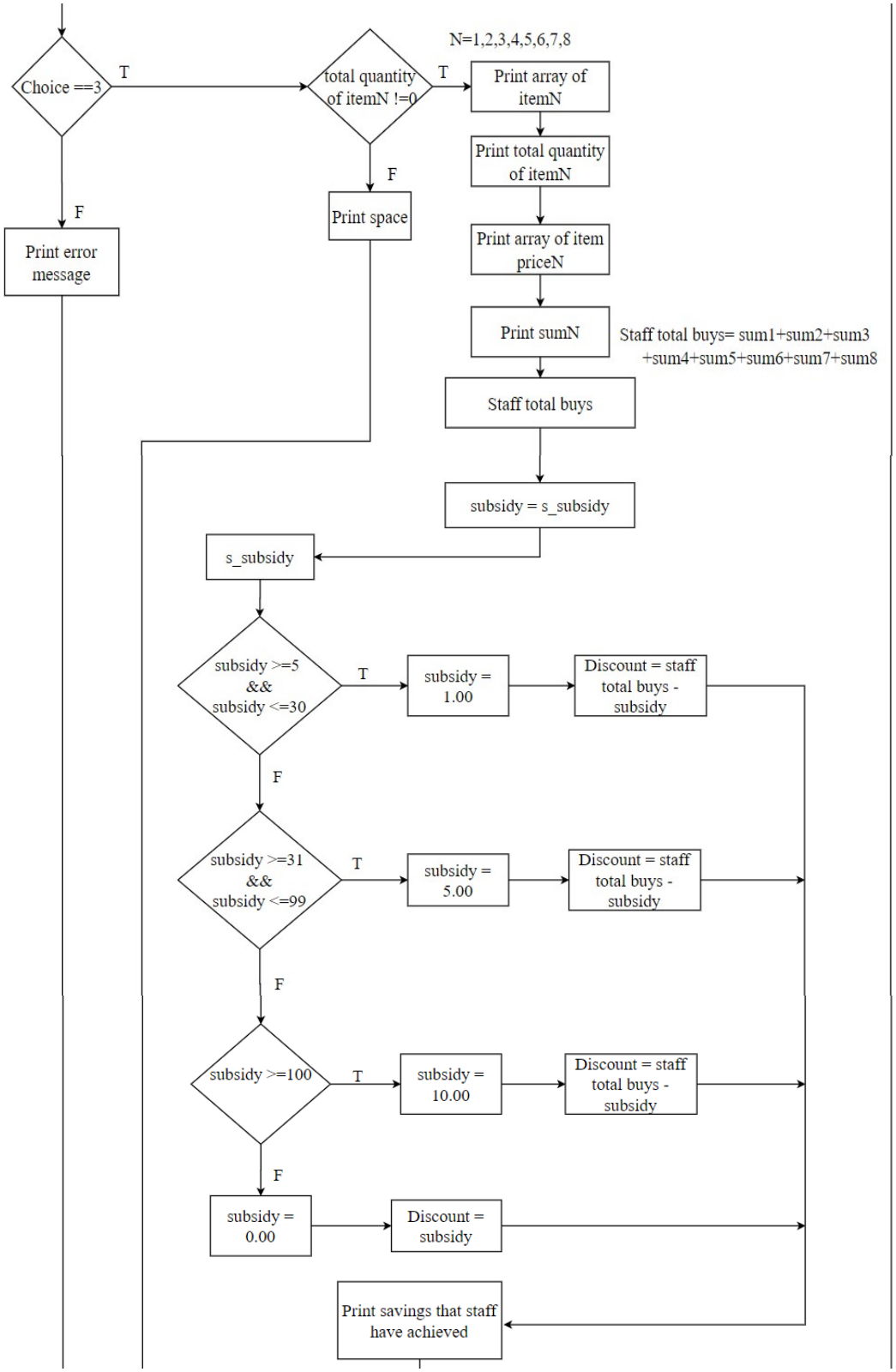

Begin
Main
Read from file
Open product text file
File open failure
F
T
Print error message
Close file
File is empty
F
Read fie
T
Print error message
i=0 < arraySize i++
T
Read item name into array
F
Read item price into array
Read member item price into array
display_showchoicemenu
Display menu
Get user input
Choice is non numbers
Choice
F
Print error message
T
Get choice
Case 1
T
Break
F
Member code = '"MEMBER"
Case 2
T
Get member key code
!=member code
F
Print error message
T
Print discount message
Break
F
Staff code = '"STAFF"
Case 3
T
Get staff key code
!=staffcode
F
Print error message
T
Print discount message
Break
F
Case 4
T
Print exit message
F
Default
T
Print error message
Break
Get user name
Print warm welcome message
display from file
Display item name
Display item price
Display member item price
Get item code from user

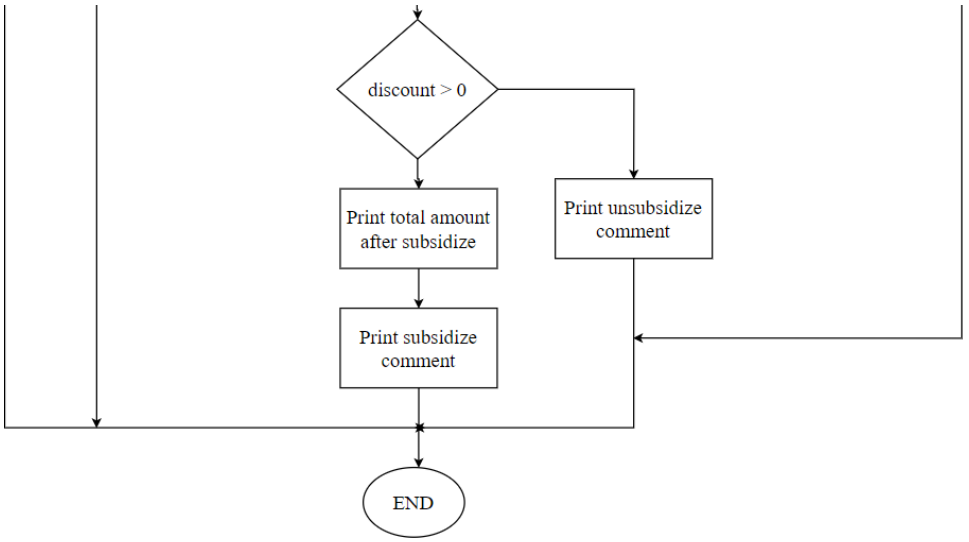

Item code
F
T
Prompt user enter item code or alphabet to checkout
Case 1
T
Get quantity of item1 from user
choice ==1 or choice ==3
F
T
amount = array of itemprice1 * quantity of item1
amount = array of member itemprice1 * quantity of item1
sum1 += amount
member sum1 += amount
total quantity of item1 += quantity of item 1
total quantity of item1 += quantity of item 1
Break
F
Case 2
T
Get quantity of item2 from user
choice ==1 or choice ==3
F
T
amount = array of itemprice2 * quantity of item2
amount = array of member itemprice2 * quantity of item2
sum2 += amount
member sum2 += amount
total quantity of item2 += quantity of item 2
total quantity of item2 += quantity of item2
Break
F
Case 3
T
Get quantity of item3 from user
choice ==1 or choice ==3
F
T
amount = array of itemprice3 * quantity of item3
amount = array of member itemprice3 * quantity of item3
sum3 += amount
member sum3 += amount
total quantity of item3 += quantity of item 3
total quantity of item3 += quantity of item3
Break
F
Case 4
T
Get quantity of item4 from user
choice ==1 or choice ==3
F
T
amount = array of itemprice4 * quantity of item4
amount = array of member itemprice4 * quantity of item4
sum4 += amount
member sum4 += amount
F


total quantity of item4 += quantity of item 4
total quantity of item4 += quantity of item4
Break
Case 5
T
Get quantity of item5 from user
choice ==1 or choice ==3
F
T
amount = array of itemprice5 * quantity of item5
amount = array of member itemprice5 * quantity of item5
sum5 += amount
member sum5 += amount
F
total quantity of item5 += quantity of item 5
total quantity of item5 += quantity of item5
Break
Case 6
T
Get quantity of item6 from user
choice ==1 or choice ==3
F
T
amount = array of itemprice6 * quantity of item6
amount = array of member itemprice6 * quantity of item6
sum6 += amount
member sum6 += amount
F
total quantity of item6 += quantity of item 6
total quantity of item6 += quantity of item6
Break
Case 7
T
Get quantity of item7 from user
choice ==1 or choice ==3
F
T
amount = array of itemprice7 * quantity of item7
amount = array of member itemprice7 * quantity of item7
sum7 += amount
member sum7 += amount
F
total quantity of item7 += quantity of item 7
total quantity of item7 += quantity of item7
Break


Case 8
T
Get quantity of item8 from user
choice ==1 or choice ==3
F
T
amount = array of itemprice8 * quantity of item8
amount = array of member itemprice8 * quantity of item8
sum8 += amount
member sum8 += amount
total quantity of item8 += quantity of item 8
total quantity of item8 += quantity of item8
Break
F
Default
Print error message
Break
Display date and time
Display mart details
Display receipt details
Choice ==1
T
total quantity of itemN !=0
T
N=1,2,3,4,5,6,7,8
Print array of itemN
F
F
Print space
Print total quantity of itemN
Print array of item priceN
Print sumN
Customer total buys
Customer total buys= sum1+sum2+sum3 +sum4+sum5+sum6+sum7+sum8
customer total buys >=300
F
Print no discount comment
T
discount = cdis_applied
display cdis_applied
discount = customer total buys * 0.05
Print amount of discount applied
customertotaldiscount = c_totaldiscount
display c_totaldiscount
customertotaldiscount = customer total buys * 0.95
Print total after discount


Print discount comment
F
Choice ==2
T
total quantity of itemN !=0
N=1,2,3,4,5,6,7,8
Print array of itemN
Print total quantity of itemN
Print space
Print array of member item priceN
Print member sumN
Member total buys
Member total buys= member sum1 +member sum2 + member sum3 +member sum4 +member sum5 + member sum6+membersum7+membersum8
member total buys >=300
Print no discount comment
discount = mdis_applied
display mdis_applied
discount = member total buys * 0.05
Print savings that member achieved
membertotaldiscount = m_totaldiscount
display m_totaldiscount
membertotaldiscount = member total buys * 0.95
Print total after discount
Print discount comment


Choice ==3
T
F
Print error message
total quantity of itemN !=0
T
F
N=1,2,3,4,5,6,7,8
Print array of itemN
Print total quantity of itemN
Print array of item priceN
Print sumN
Staff total buys= sum1+sum2+sum3 +sum4+sum5+sum6+sum7+sum8
Print space
Staff total buys
subsidy = s_subsidy
s_subsidy
subsidy >=5 && subsidy <=30
T
subsidy = 1.00
Discount = staff total buys - subsidy
F
subsidy >=31 && subsidy <=99
T
subsidy = 5.00
Discount = staff total buys - subsidy
F
subsidy >=100
T
subsidy = 10.00
Discount = staff total buys - subsidy
F
subsidy = 0.00
Discount = subsidy
Print savings that staff have achieved


discount > 0
Print total amount after subsidize
Print unsubsidize comment
Print subsidize comment
END

Desk check

Input All Correct Data (From Text File)

Item	Price(RM)	Member_Price(RM)
Microwave	299.00	250.00
Iron	40.00	35.00
Rice_Cooker	80.00	75.00
Hair_Dryer	50.00	47.00
Shoe_Rack	12.00	12.00
Kitchen_Carpet	24.00	24.00
MicroSD	40.00	35.00
Mini_Speaker	10.00	10.00

Output :

========== Items and Price Listing ==========

Item	Price(RM)	Member_Price(RM)
1.Microwave	299.00	250.00
2.Iron	40.00	35.00
3.Rice_Cooker	80.00	75.00
4.Hair_Dryer	50.00	47.00
5.Shoe_Rack	12.00	12.00
6.Kitchen_Carpet	24.00	24.00
7.MicroSD	40.00	35.00
8.Mini_Speaker	10.00	10.00

Void Read from file ( )

Input (from text file successful)

Line	i	Item [i]	Item Price [i]	Member item price [i]	arraySize	Conditions	Input/Output
487						Open text file? Text file is opened	
500	0				8		
503	0	Microwave	299.00	250.00	8	Read from text file and store into array.	Item [0] ? Item Price [0] ? Member Item Price [0] ?
503	1	Iron	40.00	35.00	8	Read from text file and store into array.	Item [1] ? Item Price [1] ? Member Item Price [1] ?
503	2	Rice_Cooker	80.00	75.00	8	Read from text file and store into array.	Item [2] ? Item Price [2] ? Member Item Price [2] ?
503	3	Hair_Dryer	50.00	47.00	8	Read from text file and store into array.	Item [3] ? Item Price [3] ? Member Item Price [3] ?
503	4	Shoe_Rack	12.00	12.00	8	Read from text file and store into array.	Item [4] ? Item Price [4] ? Member Item Price [4] ?
503	5	Kitchen_Carpet	24.00	24.00	8	Read from text file and store into array.	Item [5] ? Item Price [5] ? Member Item Price [5] ?
503	6	MicroSD	40.00	35.00	8	Read from text file and store into array.	Item [6] ? Item Price [6] ? Member Item Price [6] ?
503	7	Mini_Speaker	10.00	10.00	8	Read from text file and store into array.	Item [7] ? Item Price [7] ? Member Item Price [7] ?

Void Read from file ( )

Input (Case 1 : from text file failure)

Line	i	Item [i]	Item Price [i]	Member item price [i]	arraySize	Conditions	Input/Output
488						Open text file? Text file not exits	
489							File open failure!
490							System closing~
491							exit (0)

Void Read from file ( )

Input (Case 2 : from text file failure)

Line	i	Item [i]	Item Price [i]	Member item price [i]	arraySize	Conditions	Input/Output
493						Open text file? Text file is empty	
495							File is empty!
490							Program will be halted soon~
491							exit (0)

Int main ( )

Input (Case 1 : from user that enter non-numbers value to choice)

Choice = a

Output :

display error message , prompt user to re-enter choice, return to main menu.

Line	Choice	Conditions	Input/Output
54	a	Enter only (1-4)	Choice = a
61		Choice is non numbers value	You can only enter number.
62			Please re-enter your choice :

Input (Case 2 : from user that enter numbers to choice but out of range 1-4)

Choice = 9

Output :

Display error message , display system close message, exit program.

Line	Choice	Conditions	Input/Output
54	9	Enter only (1-4)	Choice = 9
109		Choice is invalid number.	
110			Invalid Input!
111			System will close soon ~~~~
112		System closed	Return 0

Input (Case 3 : from user that enter numbers to choice)

Choice = 4

Output :

Display appreciation message , exit program.

Line	Choice	Conditions	Input/Output
54	4	Enter only (1-4)	Choice = 4
105		Choice is valid number.	
106			Thanks for support Catherine Mart!
108		Exit program	Return 0

Input (Case 4 : from user that enter numbers to choice)

Choice = 3 , keycode = Staff , keycode = STAFF , name = Sherlock Holmes, item code = 1, quantity = 5, item code = k

Output :

User identity = Staff , display system clears, display staff code page, prompt user to enter correct Staff key code (STAFF) , display appreciation message, display subsidy message, display user's name, display item[0] , display quantity of item bought, return to item and price list, display item[0] , display total quantity of item, display unit price of item,display staff total buys, display saving that have achieved , display Total amount after subsidized, display subsidized message, display appreciation message, exit program.

Line	Choice	Key code	Name	Itemcode	Quantity	Conditions	Input/Output
54	3					Enter only (1-4)	Choice = 3
86						Choice is valid number.	System clears
87							Request keycode
88		Staff				Enter "STAFF" only	Staff
92							Wrong code Request re-enter keycode
94		STAFF				Enter "STAFF" only	STAFF
98							Appreciation message
99-102							Subsidized message
118			Sherlock Holmes			Enter a string	Sherlock Holmes
123						Read unformatted string and print it out	Sherlock Holmes
134				1		Enter itemcode (1-8) or any alphabets	Itemcode =1

136						Item[0] = Microwave	Request quantity of item
137					5	Enter number for quantity of item	5
245							Return to item and price list
134				k		Enter itemcode (1-8) or any alphabets	Itemcode = k checkout
391						Item [0] = Microwave	Microwave Quantity of item Unit price of item
429							Staff total buys
437						subsidy	Savings that have achieved
438						Staff total buys after subsidized >0	
439							Total amount after subsidized
441							Subsidized message
457							Appreciation message
460							Return 0

Input (Case 5 : from user that enter numbers to choice)

Choice = 3 , keycode = Staff , keycode = STAFF , name = Teddy Bear, item code = b

Output :

User identity = Staff , display system clears, display staff code page, prompt user to enter correct Staff key code (STAFF) , display appreciation message, display subsidy message, display user's name, display staff total buys, display unsubsidized message, display appreciation message, exit program.

Line	Choice	Key code	Name	Itemcode	Quantity	Conditions	Input/Output
54	3					Enter only (1-4)	Choice = 3
86						Choice is valid number.	System clears
87							Request keycode
88		Staff				Enter "STAFF" only	Staff
92							Wrong code Request re-enter keycode
94		STAFF				Enter "STAFF" only	STAFF
98							Appreciation message
99-102							Subsidized message
118			Teddy Bear			Enter a string	Teddy Bear
123						Read unformatted string and print it out	Teddy Bear
134				b		Enter itemcode (1-8) or any alphabets	Itemcode =b checkout

429							Staff total buys
437						subsidy	Saving that have achieved
438						Staff total buys after subsidized <=0	
441							Unsubsidized message
457							Appreciation message
460							Return 0

Input (Case 6 : from user that enter numbers to choice)

Choice = 2 , keycode = Member , keycode = MEMBER , name = Spongebob, item code = 5, quantity=3, item code = f

Output :

User identity = Member , display system clears, display member code page, prompt user to enter correct Member key code (MEMBER) , display discount message , display user's name, display item[4] , display quantity of item bought, return to item and price list, display item[4] , display unit price of item, display total quantity of item, display member total buys, display no discount message, display appreciation message, exit program.

Line	Choice	Key code	Name	Itemcode	Quantity	Conditions	Input/Output
54	2					Enter only (1-4)	Choice = 2
70						Choice is valid number.	System clears
71							Request keycode
72		Member				Enter "MEMBER" only	Member
76							Wrong code Request re-enter keycode
78		MEMBER				Enter "MEMBER" only	MEMBER
82							Discount message
83							Discount message
118			Spongebob			Enter a string	Spongebob
123						Read unformatted string and print it out	Spongebob
134				5		Enter itemcode (1-8) or any alphabets	Itemcode =5

136						Item[4] = Shoe_Rack	Request quantity of item
137					3	Enter number for quantity of item	3
245							Return to item and price list
134				f		Enter itemcode (1-8) or any alphabets	Itemcode = f checkout
346						Item[4] = Shoe_Rack	Shoe_Rack Quantity of item Unit price of item
367							Member total buys
378						Member total buys <300	
381							No discount message
457							Appreciation message
460							Return 0

Input (Case 7 : from user that enter numbers to choice)

Choice = 2, keycode = MeMbEr , keycode = MEMBER , name = Tom&Jerry, item code = 1, quantity=8, item code = 3, quantity=10, item code=g

Output:

User identity = Member , display system clears, display member code page, prompt user to enter correct Member key code (MEMBER) , display discount message, display user's name, display item[0], display item[2], display quantity of item , return item and price list display item[0], display item[2], display unit price of item, display member total buys, display discount message, display appreciation message, exit program.

Line	Choice	Key code	Name	Itemcode	Quantity	Conditions	Input/Output
54	2					Enter only (1-4)	Choice = 2
70						Choice is valid number.	System clears
71							Request keycode
72		MeMbEr				Enter "MEMBER" only	MeMbEr
76							Wrong code Request re-enter keycode
78		MEMBER				Enter "MEMBER" only	MEMBER
82							Discount message
83							Discount message
118			Tom&Jerry			Enter a string	Tom&Jerry
123						Read unformatted string and print it out	Tom&Jerry
134				1		Enter itemcode (1-8) or any alphabets	Itemcode =1
136						Item[0] = Microwave	Request quantity of item

137					8	Enter number for quantity of item	8
245							Return to item and price list
134				3		Enter itemcode (1-8) or any alphabets	Itemcode=3
136						Item[2] = Rice_Cooker	Request quantity of item
137					10	Enter number for quantity of item	10
245							Return to item and price list
134				g		Enter itemcode (1-8) or any alphabets	Itemcode = g checkout
330						Item[0] = Microwave	Microwave Quantity of item Unit price of item
338						Item[2] = Rice_Cooker	Rice_Cooker Quantity of item Unit price of item
367							Member total buys
370						Member total buys >=300	
373						Discount	Savings that have achieved
375						Member total discount	Total after discount
376							discount message
457							Appreciation message
460							Return 0

Input (Case 8 : from user that enter numbers to choice)

Choice = 1, name = Pikapika55, item code = 1, quantity=10, item code = 4, quantity=5, item code = 6, quantity=10,item code=c

Output:

User identity = Customer , display user's name, display item[1], display quantity of item, return item and price list ,display item[4], display quantity of item, return item and price list, display item[6], display quantity of item , return item and price list, display item[1],display item[4], display item[6], display unit price of item, display customer total buys, display Amount of discount applied , display Total after discount, display discount message, display appreciation message, exit program.

Line	Choice	Name	Itemcode	Quantity	Conditions	Input/Output
54	1				Enter only (1-4)	Choice = 1
68					Choice is valid number.	
116						System clears
118		Pikapika55			Enter a string	Pikapika55
123					Read unformatted string and print it out	Pikapika55
134			1		Enter itemcode (1-8) or any alphabets	Itemcode =1
136					Item[0] = Microwave	Request quantity of item
137				10	Enter number for quantity of item	10
245						Return to item and price list
134			4		Enter itemcode (1-8) or any alphabets	Itemcode=4
136					Item[3] = Hair_Dryer	Request quantity of item
137				5	Enter number for quantity of item	5

245						Return to item and price list
134			6		Enter itemcode (1-8) or any alphabets	Itemcode = 6
137				10	Enter number for quantity of item	10
245						Return to item and price list
134			c		Enter itemcode (1-8) or any alphabets	Itemcode = c checkout
267					Item[0] = Microwave	Microwave Quantity of item Unit price of item
279					Item[3] = Hair_Dryer	Hair_Dryer Quantity of item Unit price of item
287					Item[5] = Kitchen_Carpet	Kitchen_Carpet Quantity of item Unit price of item
304						Customer total buys
308					Customer total buys >=300	
311					Discount	Amount of discount applied
313					c_total discount	Total after discount
315						discount message
457						Appreciation message
460						Return 0

Input (Case 9 : from user that enter numbers to choice)

Choice = 1, name = Robert Stevan Kaplan , item code = 8, quantity=7, item code = 4, quantity=5, item code = 6, quantity=10,item code=d

Output :

User identity = Customer , display user's name, display item[7], display quantity of item, return item and price list ,display item[7], display unit price of item, display customer total buys, display no discount message, display appreciation message, exit program.

Line	Choice	Name	Itemcode	Quantity	Conditions	Input/Output
54	1				Enter only (1-4)	Choice = 1
68					Choice is valid number.	
116						System clears
118		Robert Stevan Kaplan			Enter a string	Robert Stevan Kaplan
123					Read unformatted string and print it out	Robert Stevan Kaplan
134			8		Enter itemcode (1-8) or any alphabets	Itemcode =8
136					Item[7] = Mini_Speaker	Request quantity of item
137				7	Enter number for quantity of item	7
245						Return to item and price list
134			d		Enter itemcode (1-8) or any alphabets	Itemcode = d checkout
267					Item[7] = Microwave	Microwave Quantity of item Unit price of item
304						Customer total buys

317					Customer total buys <300	
320						No discount message
457						Appreciation message
460						Return 0

C++ Program List

```
1.  #include <iostream>
2.  #include <fstream>
3.  #include <cstdlib>
4.  #include <iomanip>
5.  #include <stdlib.h>
6.  #include <string>
7.  #include <ctime>
8.  #include <windows.h>
9.  #include <climits>
10.
11. using namespace std;
12.
13. void showchoice ();
14. void ReadFromFile(string [], double [], double [],const int );
15. void displayFromFile(string [], double [], double []);
16. double cdis_applied(double);
17. double cdis_total(double);
18. double mdis_applied(double);
19. double mdis_total(double);
20. double s_subsidy(double);
21. double sdis_applied(double,double);
22.
23.
24. //*******************************
25. // Main Function of Program
26. //*******************************
27. int main()
28. {
29.     //declare array
30.     const int Array_size = 8;
31.     string itemArray[Array_size];
32.     double priceArray[Array_size];
33.     double M_priceArray[Array_size];
34.
35.     string name;
36.     string m_keycode = "MEMBER";
37.     string s_keycode = "STAFF";
38.
39.     int choice;
40.     int itemcode;
41.     int n1=0,n2=0,n3=0,n4=0,n5=0,n6=0,n7=0,n8=0,num1=0,num2=0,num3=0,num4=0,num5=0,
    num6=0,num7=0,num8=0;
42.     double sum1=0,sum2=0,sum3=0,sum4=0,sum5=0,sum6=0,sum7=0,sum8=0;
43.     double msum1=0,msum2=0,msum3=0,msum4=0,msum5=0,msum6=0,msum7=0,msum8=0,msum;
44.     double discount,amount,c_totaldiscount,m_totaldiscount,subsidy;
45.     double custotal=0, membertotal=0, stafftotal=0;
46.     char *L = " ------------------------------------------------------------------------------
    ---------------\n";
47.
48.     time_t ttime = time(0);
49.     char* dt = ctime(&ttime);
50.     HANDLE color=GetStdHandle(STD_OUTPUT_HANDLE);
51.
52.      ReadFromFile(itemArray, priceArray, M_priceArray,Array_size);
53.      showchoice();
54.      cin >> choice;
55.
56.      // Input validation
57.      while (cin.fail()){
58.         cin.clear(); // clear input buffer to restore cin to a usable state
59.         cin.ignore(INT_MAX, '\n'); // ignore last input
```

```
60.         SetConsoleTextAttribute(color,12);
61.         cout << "\t\t\t\t You can only enter numbers.\n";
62.         cout << "\t\t\t\t Please re-enter your choice :";
63.         SetConsoleTextAttribute(color, 7);
64.         cin >> choice;
65.     }
66.
67.      switch(choice){
68.      case 1 :
69.               break;
70.      case 2 : system("cls");
71.               cout << "\t\t\t\tPlease Enter Member's secret KEYCODE : ";
72.               cin >> m_keycode;
73.               cout << endl;
74.                 while (m_keycode != "MEMBER"){
75.                    SetConsoleTextAttribute(color,12);
76.                    cout << "\t\t\t\tWRONG CODE! Reenter again : ";
77.                    SetConsoleTextAttribute(color, 7);
78.                    cin >> m_keycode;
79.                    cout << endl;
80.                  }
81.               SetConsoleTextAttribute(color, 14);
82.               cout << "\n\n\t\t********************   BIG MEMBER DISCOUNT % on some
    items    ************************\n\n";
83.               cout << "\n\n\t*************** BUY MORE, SAVE MORE !! enjoy 5% discoun
    t if total buy reached RM 300 !! ******************\n";
84.               system("pause");
85.               break;
86.     case 3 : system("cls");
87.               cout << "\t\t\t\tPlease Enter Staff's secret KEYCODE : ";
88.               cin >> s_keycode;
89.               cout << endl;
90.                 while (s_keycode != "STAFF"){
91.                    SetConsoleTextAttribute(color,12);
92.                    cout << "\t\t\t\tWRONG CODE! Reenter again : ";
93.                    SetConsoleTextAttribute(color,7);
94.                    cin >> s_keycode;
95.                    cout << endl;
96.                  }
97.               SetConsoleTextAttribute(color, 14);
98.               cout << "\n\n\t\t\t********************* Thanks for your Hardworking!!
    ***************************\n\n";
99.               cout << "\n\n\t\t\t\t*************** Special for you ***************
    **\n";
100.                    cout << "\n\n\t\t\t If purchase : 1. RM5-
    RM30           reductions of RM1.00\n";
101.                    cout << "\n\n\t\t\t                2. RM31-
    RM99          reductions of RM5.00\n";
102.                    cout << "\n\n\t\t\t                3. RM100 ++           reducti
    ons of RM10.00\n";
103.                    system("pause");
104.                    break;
105.           case 4 : SetConsoleTextAttribute(color,3);
106.                    cout << "\n\t\t\t~~~~~~~~~~ Thanks for support Catherine Mart!~
    ~~~~~~~~~~ \n\n\t\t\t\t\t Have a nice day ~ \n";
107.                    system("pause");
108.                    return 0;
109.           default: SetConsoleTextAttribute(color, 12);
110.                    cout << "\n\t\t\t\t\t\tInvalid Input! " << endl;
111.                    cout << "\t\t\t\t\tSystem will close soon ~~~ " << endl;
112.                    system("pause");
113.                    return 0;
114.           }
115.
```

```
116.            system("cls");
117.            SetConsoleTextAttribute(color, 15);
118.            cout << "\t\t\tPlease enter your name: ";
119.            cin.ignore();
120.            getline (cin, name, '\n');
121.            system("cls");
122.
123.            cout << "\n\t\t\t\t\t\tDear "<<name << endl << endl;
124.            cout << "\t\t\t\t\tWelcome to Catherine Mart!!\n\n";
125.            cout << setw(70) << "\t\t======================== Items and Price Listi
    ng  ========================\n\n";
126.            cout << setw(30) << "Item"<< setw(25) <<"Price(RM)"<< setw(33) <<"Member
     Price(RM)\n";
127.
128.            displayFromFile(itemArray, priceArray, M_priceArray);
129.
130.            cout << endl;
131.            cout << "\t\t============================================================
    ================\n";
132.
133.            cout << "\t\t\tWhat do you want to buy? Enter item code (1-8) : ";
134.                  while (cin >> itemcode){
135.                  switch (itemcode){
136.                  case 1: cout <<"\t\t\tHow many " << itemArray[0] << " would u like
     to buy : ";
137.                          cin >> num1;
138.                          if(choice==1 || choice==3){
139.                            amount = priceArray[0]*num1;
140.                            sum1 += amount;
141.                            n1 += num1;
142.                            }
143.                          else{
144.                            amount = M_priceArray[0]*num1;
145.                            msum1 += amount;
146.                            n1 += num1;
147.                            }
148.                          break;
149.                  case 2: cout <<"\t\t\tHow many " << itemArray[1] << " would u like
     to buy : ";
150.                          cin >> num2;
151.                          if(choice==1 || choice==3){
152.                            amount = priceArray[1]*num2;
153.                            sum2 += amount;
154.                            n2 += num2;
155.                            }
156.                          else{
157.                            amount = M_priceArray[1]*num2;
158.                            msum2 += amount;
159.                            n2 += num2;
160.                            }
161.                         break;
162.                 case 3: cout <<"\t\t\tHow many " << itemArray[2] << " would u like
    to buy : ";
163.                         cin >> num3;
164.                         if(choice==1 || choice==3){
165.                            amount = priceArray[2]*num3;
166.                            sum3 += amount;
167.                            n3 += num3;
168.                            }
169.                         else{
170.                            amount = M_priceArray[2]*num3;
171.                            msum3 += amount;
172.                            n3 += num3;
173.                            }
```

```
                        break;
                case 4: cout <<"\t\t\tHow many " << itemArray[3] << " would u like
    to buy : ";
                        cin >> num4;
                        if(choice==1 || choice==3){
                           amount = priceArray[3]*num4;
                           sum4 += amount;
                           n4 += num4;
                           }
                        else{
                           amount = M_priceArray[3]*num4;
                           msum4 += amount;
                           n4 += num4;
                           }
                        break;
                case 5: cout <<"\t\t\tHow many " << itemArray[4] << " would u like
    to buy : ";
                        cin >> num5;
                        if(choice==1 || choice==3){
                           amount = priceArray[4]*num5;
                           sum5 += amount;
                           n5 += num5;
                           }
                        else{
                           amount = M_priceArray[4]*num5;
                           msum5 += amount;
                           n5 += num5;
                           }
                        break;
                case 6: cout <<"\t\t\tHow many " << itemArray[5] << " would u like
    to buy : ";
                        cin >> num6;
                        if(choice==1 || choice==3){
                           amount = priceArray[5]*num6;
                           sum6 += amount*num6;
                           n6 += num6;
                           }
                        else{
                           amount = M_priceArray[5];
                           msum6 += amount;
                           n6 += num6;
                           }
                        break;
               case 7: cout <<"\t\t\tHow many " << itemArray[6] << " would u like
    to buy : ";
                        cin >> num7;
                        if(choice==1 || choice==3){
                           amount = priceArray[6]*num7;
                           sum7 += amount;
                           n7 += num7;
                           }
                        else{
                           amount = M_priceArray[6]*num7;
                           msum7 += amount;
                           n7 += num7;
                           }
                        break;
                case 8: cout <<"\t\t\tHow many " << itemArray[7] << " would u like
    to buy : ";
                        cin >> num8;
                        if(choice==1 || choice==3){
                           amount = priceArray[7]*num8;
                           sum8 += amount;
                           n8 += num8;
```

```
                           }
                        else{
                           amount = M_priceArray[7]*num8;
                           msum8 += amount;
                           n8 += num8;
                           }
                        break;
                  default:SetConsoleTextAttribute(color, 12);
                        cout << "\n\t\t\tInvalid input. Please try again.\n";
                        break;
               } // end switch
            SetConsoleTextAttribute(color, 7);
           cout << "\n\t\t\tEnter item code (1-
   8) for buying or any alphabet for checkout: ";
           } // end while


           system("cls");
           cout << "\t\t" << dt << "\t\t\t\t\t\t" << "CATHERINE MART " << endl;
           cout << "\t\t\t\t\t\t" << "Address : 54, ABC street" << endl;
           cout << "\t\t\t\t\t\t" << "Telp    : 123456789" << endl;
           cout << "\t\t" << L;
           cout << "\t\t" << setw(50) << " RECEIPT " << endl;
           cout << "\t\t" << L;
           cout << "\t\t ACQUIRENTI : " << name << endl;
           cout << "\t\t" << L;
           cout << "\t\t ITEM\t\t\t\tQUANTITY\tUNIT PRICE\tAMOUNT OF SALE\n";
           cout << "\t\t" << L;

       //************
       // Customer
       //************

           if(choice==1){
              if(n1!=0)
                 cout << "\t\t" << setw(10) << itemArray[0] << "\t\t\t   " << n1 <<
    "\t\tRM  " << priceArray[0] <<"\t RM "<< sum1 <<"\n";
              else
                 cout << "";
              if(n2!=0)
                 cout << "\t\t" << setw(5) << itemArray[1] << "\t\t\t\t   " << n2 <
   < "\t\tRM   " << priceArray[1] <<"\t RM "<< sum2 <<"\n";
              else
                 cout << "";
              if(n3!=0)
                 cout << "\t\t" << setw(12) << itemArray[2] << "\t\t\t   " << n3 <<
    "\t\tRM   " << priceArray[2] <<"\t RM "<< sum3 <<"\n";
              else
                 cout << "";
              if(n4!=0)
                 cout << "\t\t" << setw(11) << itemArray[3] << "\t\t\t   " << n4 <<
   "\t\tRM   " << priceArray[3] <<"\t RM "<< sum4 <<"\n";
              else
                 cout << "";
              if(n5!=0)
                 cout << "\t\t" << setw(10) << itemArray[4] << "\t\t\t   " << n5 <<
   "\t\tRM   " << priceArray[4] <<"\t RM "<< sum5 <<"\n";
              else
                 cout << "";
              if(n6!=0)
                 cout << "\t\t" << setw(15) << itemArray[5] << "\t\t\t   " << n6 <<
    "\t\tRM   " << priceArray[5] <<"\t RM "<< sum6 <<"\n";
              else
                 cout << "";
```

```
290.                if(n7!=0)
291.                    cout << "\t\t" << setw(8) << itemArray[6] << "\t\t\t    " << n7 <<
    "\t\tRM    " << priceArray[6] <<"\t RM "<< sum7 <<"\n";
292.                else
293.                   cout << "";
294.                if(n8!=0)
295.                   cout << "\t\t" << setw(13) << itemArray[7] << "\t\t\t    " << n8 <<
    "\t\tRM    " << priceArray[7] <<"\t RM "<< sum8 <<"\n";
296.                else
297.                   cout << "";
298.
299.             cout << fixed << showpoint << setprecision(2);
300.             custotal = sum1+sum2+sum3+sum4+sum5+sum6+sum7+sum8;
301.
302.             cout<< "\t\t" << L;
303.             SetConsoleTextAttribute(color, 14);
304.             cout<<"\t\t\t\t\t\t\t\tTotal buys :     RM "<< custotal <<"\n";
305.             SetConsoleTextAttribute(color, 15);
306.             cout<< "\t\t" << L;
307.
308.                if(custotal>=300){
309.                    discount = cdis_applied(custotal);
310.                    SetConsoleTextAttribute(color, 14);
311.                    cout << "\t\tAmount of discount applied : RM " << discount << end
    l;
312.                    c_totaldiscount = cdis_total(custotal);
313.                    cout << "\t\tTotal after discount       : RM " <<  c_totaldiscoun
    t << endl;
314.                    cout << endl << endl;
315.                    cout << "\t\t\t Congratulation!! You have achived 5% discount, bu
    y more save more !! " << endl;
316.                }
317.                else{
318.                    cout << endl;
319.                    SetConsoleTextAttribute(color, 14);
320.                    cout << "\t\t\t Sorry ~ you almost hit the target, purchase more
    and save more next time! " << endl;
321.                 }
322.             }// end if
323.
324.        //************
325.        // Member
326.        //************
327.
328.             else if(choice==2){
329.                 if(n1!=0)
330.                    cout <<  "\t\t" << setw(10) << itemArray[0] << "\t\t\t    " << n1
    << "\t\tRM " << M_priceArray[0] <<"\t RM "<< msum1 <<"\n";
331.                 else
332.                    cout << "";
333.                 if(n2!=0)
334.                    cout <<  "\t\t" << setw(5) << itemArray[1] << "\t\t\t\t    " << n2
     << "\t\tRM    " << M_priceArray[1] <<"\t RM "<< msum2 <<"\n";
335.                 else
336.                    cout << "";
337.                 if(n3!=0)
338.                    cout <<  "\t\t" << setw(12) << itemArray[2] << "\t\t\t    " << n3
    << "\t\tRM    " << M_priceArray[2] <<"\t RM "<< msum3 <<"\n";
339.                 else
340.                    cout << "";
341.                 if(n4!=0)
342.                    cout <<  "\t\t" << setw(11) << itemArray[3] << "\t\t\t    " << n4
    <<"\t\tRM    " << M_priceArray[3] <<"\t RM "<< msum4 <<"\n";
343.                 else
```

```
344.                    cout << "";
345.                 if(n5!=0)
346.                    cout <<  "\t\t" << setw(10) << itemArray[4] << "\t\t\t    " << n5
    <<"\t\tRM   " << M_priceArray[4] <<"\t RM "<< msum5 <<"\n";
347.                 else
348.                    cout << "";
349.                 if(n6!=0)
350.                    cout <<  "\t\t" << setw(15) << itemArray[5] << "\t\t\t    " << n6
    << "\t\tRM   " << M_priceArray[5] <<"\t RM "<< msum6 <<"\n";
351.                 else
352.                    cout << "";
353.                 if(n7!=0)
354.                    cout <<  "\t\t" << setw(8) << itemArray[6] << "\t\t\t    " << n7 <
    <"\t\tRM   " << M_priceArray[6] <<"\t RM "<< msum7 <<"\n";
355.                 else
356.                    cout << "";
357.                 if(n8!=0)
358.                    cout <<  "\t\t" << setw(13) << itemArray[7] << "\t\t\t    " << n8
    <<"\t\tRM   " << M_priceArray[7] <<"\t RM "<< msum8 <<"\n";
359.                 else
360.                    cout << "";
361.
362.
363.             cout << fixed << showpoint << setprecision(2);
364.             membertotal = msum1+msum2+msum3+msum4+msum5+msum6+msum7+msum8;
365.             cout << "\t\t" << L;
366.             SetConsoleTextAttribute(color, 14);
367.             cout << "\t\t\t\t\t\t\t\tTotal buys :     RM "<< membertotal <<"\n";
368.             SetConsoleTextAttribute(color, 15);
369.             cout << "\t\t" << L;
370.                if(membertotal>=300){
371.                    discount = mdis_applied(membertotal);
372.                    SetConsoleTextAttribute(color, 14);
373.                    cout << "\t\t Savings that u have achieved : RM " << discount <<
    endl;
374.                    m_totaldiscount = mdis_total(membertotal);
375.                    cout << "\t\t Total after discount       : RM " <<  m_totaldiscou
    nt << endl << endl;
376.                    cout << "\t\t\t Congratulation!! You have achived 5% discount, bu
    y more save more ~~~~ " << endl;
377.                }
378.                else{
379.                    cout << endl;
380.                    SetConsoleTextAttribute(color, 14);
381.                    cout << "\t\t\t Sorry ~ you almost hit the target, purchase more
    and save more next time! " << endl;
382.                 }
383.             }// end if
384.
385.         //**********
386.         // Staff
387.         //**********
388.
389.             else if(choice==3){
390.                if(n1!=0)
391.                   cout <<  "\t\t" << setw(10) << itemArray[0] << "\t\t\t    " << n1 <
    < "\t\tRM " << priceArray[0] <<"\t RM "<< sum1 <<"\n";
392.                else
393.                   cout << "";
394.                if(n2!=0)
395.                   cout <<  "\t\t" << setw(5) << itemArray[1] << "\t\t\t\t    " << n2
    << "\t\tRM   " << priceArray[1] <<"\t RM "<< sum2 <<"\n";
396.                else
397.                   cout << "";
```

```
398.              if(n3!=0)
399.                 cout <<  "\t\t" << setw(12) << itemArray[2] << "\t\t\t    " << n3 <
    < "\t\tRM    " << priceArray[2] <<"\t RM "<< sum3 <<"\n";
400.              else
401.                 cout << "";
402.              if(n4!=0)
403.                 cout <<  "\t\t" << setw(11) << itemArray[3] << "\t\t\t    " << n4 <
    <"\t\tRM    " << priceArray[3] <<"\t RM "<< sum4 <<"\n";
404.              else
405.                 cout << "";
406.              if(n5!=0)
407.                 cout <<  "\t\t" << setw(10) << itemArray[4] << "\t\t\t    " << n5 <
    <"\t\tRM    " << priceArray[4] <<"\t RM "<< sum5 <<"\n";
408.              else
409.                 cout << "";
410.              if(n6!=0)
411.                 cout <<  "\t\t" << setw(15) << itemArray[5] << "\t\t\t    " << n6 <
    < "\t\tRM    " << priceArray[5] <<"\t RM "<< sum6 <<"\n";
412.              else
413.                 cout << "";
414.              if(n7!=0)
415.                 cout <<  "\t\t" << setw(8) << itemArray[6] << "\t\t\t    " << n7 <<
    "\t\tRM    " << priceArray[6] <<"\t RM "<< sum7 <<"\n";
416.              else
417.                 cout << "";
418.              if(n8!=0)
419.                 cout <<  "\t\t" << setw(13) << itemArray[7] << "\t\t\t    " << n8 <
    <"\t\tRM    " << priceArray[7] <<"\t RM "<< sum8 <<"\n";
420.              else
421.                 cout << "";
422.
423.
424.           cout << fixed << showpoint << setprecision(2);
425.           stafftotal = sum1+sum2+sum3+sum4+sum5+sum6+sum7+sum8;
426.
427.           cout << "\t\t" << L;
428.           SetConsoleTextAttribute(color, 14);
429.           cout <<"\t\t\t\t\t\t\t\tTotal buys :     RM "<< stafftotal <<"\n";
430.           SetConsoleTextAttribute(color, 15);
431.           cout << "\t\t" << L;
432.
433.           subsidy = s_subsidy(stafftotal);
434.
435.           discount = sdis_applied(subsidy,stafftotal);
436.           SetConsoleTextAttribute(color, 14);
437.           cout << "\t\tSavings that u have achieved : RM " << subsidy << endl;
438.               if(discount > 0){
439.                 cout << "\t\tTotal amount after subsidize : RM " << discount << en
    dl;
440.                 cout << endl << endl;
441.                 cout << "\t\t\t Congratulation!! You can enjoy staff subsidy, buy
    more save more ~~~~ " << endl;
442.                }
443.               else{
444.                 cout << endl;
445.                 SetConsoleTextAttribute(color, 14);
446.                 cout << "\t\t\t Sorry ~ you almost hit the target, purchase more a
    nd save more next time! " << endl;
447.                }
448.           }// end if
449.
450.           else{
451.             SetConsoleTextAttribute(color, 12);
452.             cout << "The data is invalid X..X " << endl;
```

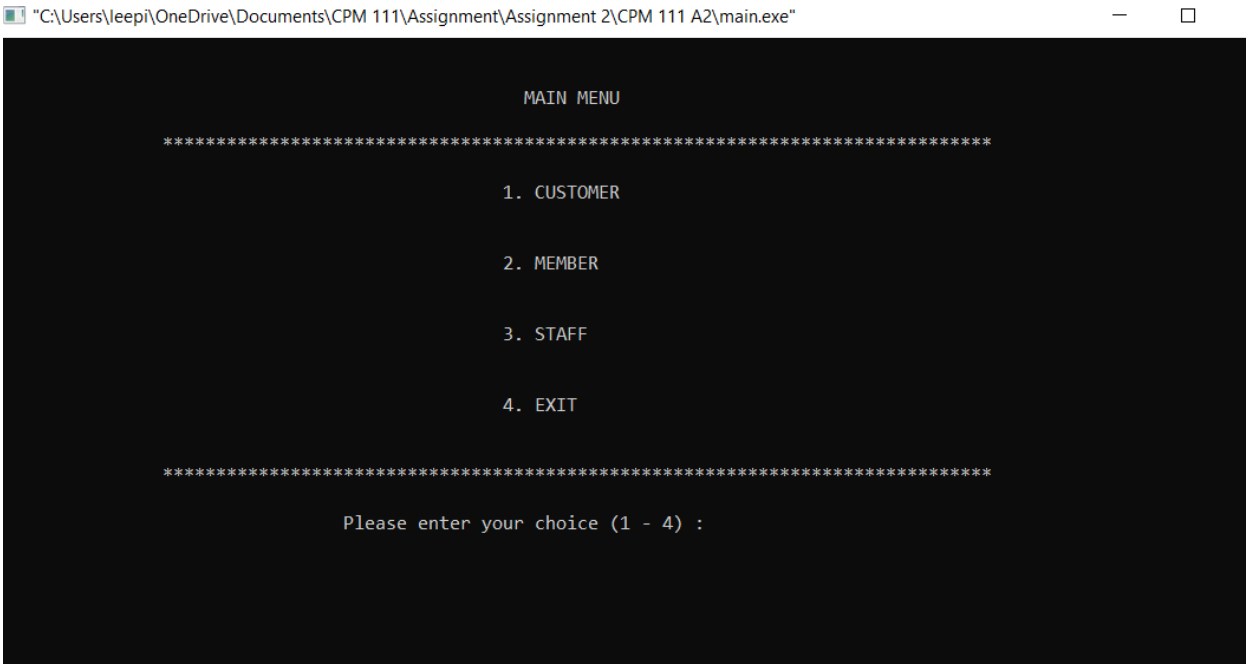
```
453.            }
454.
455.            SetConsoleTextAttribute(color, 14);
456.            cout << endl;
457.            cout << "\t\t\t\t Thanks for supporting Catherine Mart, Have A Nice Day
    ~ " << endl;
458.
459.            system("pause");
460.            return 0;
461.        }
462.
463.
464.        //************************************
465.        // The Main Menu Function of Program
466.        //************************************
467.
468.        void showchoice()
469.        {
470.                cout << "\n\n" << setw(60) << "MAIN MENU ";
471.                cout << "\n\n\t\t*************************************************
    ***************************\n\n";
472.                cout << setw(62) << "1. CUSTOMER\n\n\n";
473.                cout << setw(60) << "2. MEMBER\n\n\n";
474.                cout << setw(59) << "3. STAFF\n\n\n";
475.                cout << setw(56) << "4. EXIT\n";
476.                cout << "\n\n\t\t*************************************************
    ***************************\n\n";
477.                cout << setw(68) << "Please enter your choice (1 - 4) : ";
478.        }
479.
480.        //************************************************
481.        // Function Read Text File and stored in array
482.        //************************************************
483.
484.        void ReadFromFile(string itm[], double p[], double mp[] , const int arraySiz
    e)
485.        {
486.               ifstream inFile;
487.               inFile.open("products.txt");
488.               if(!inFile){ // check for file open failure
489.                   cout << "File open failure!" << endl;
490.                   cout << endl << "System closing ~ " << endl;
491.                   exit(0);
492.                }
493.                else if(inFile.peek(), inFile.eof() )
494.                {
495.                    cout << "File is empty! " << endl;
496.                    cout << endl << "Program will be halted soon ~ " << endl;
497.                    exit(0);
498.                }
499.                else{
500.                for(int i=0; i<arraySize;i++)
501.                   {
502.                    getline(inFile,itm[i]);
503.                   inFile >> itm[i] >> p[i] >> mp[i];
504.                   }
505.                }
506.               inFile.close();
507.        }
508.
509.        //**************************
510.        // Function to display Text
511.        //**************************
512.
```

```
513.        void displayFromFile(string itm[], double p[], double mp[])
514.        {
515.
516.                    cout << fixed << showpoint << setprecision(2);
517.                    cout << "\t\t\t1. " << itm[0] << "\t\t" << p[0] << "\t\t\t" << mp
    [0] << endl;
518.                    cout << "\t\t\t2. " << itm[1] << "\t\t\t" << p[1] << "\t\t\t" <<
    mp[1] << endl;
519.                    cout << "\t\t\t3. " << itm[2] << "\t\t" << p[2] << "\t\t\t" << mp
    [2] << endl;
520.                    cout << "\t\t\t4. " << itm[3] << "\t\t" << p[3] << "\t\t\t" << mp
    [3] << endl;
521.                    cout << "\t\t\t5. " << itm[4] << "\t\t" << p[4] << "\t\t\t" << mp
    [4] << endl;
522.                    cout << "\t\t\t6. " << itm[5] << "\t" << p[5] << "\t\t\t" << mp[5
    ] << endl;
523.                    cout << "\t\t\t7. " << itm[6] << "\t\t" << p[6] << "\t\t\t" << mp
    [6] << endl;
524.                    cout << "\t\t\t8. " << itm[7] << "\t\t" << p[7] << "\t\t\t" << mp
    [7] << endl;
525.
526.
527.        }
528.
529.        //*****************************************
530.        // Function to calculate customer discount
531.        //*****************************************
532.        double cdis_applied(double  c)
533.        {
534.            double discount;
535.            discount = c*0.05;
536.            return discount;
537.        }
538.
539.        //*****************************************************
540.        // Function to calculate customer total after discount
541.        //*****************************************************
542.        double cdis_total(double ct)
543.        {
544.            double ctotal;
545.            ctotal = ct*0.95;
546.            return ctotal;
547.        }
548.
549.        //*****************************************
550.        // Function to calculate member discount
551.        //*****************************************
552.
553.        double mdis_applied(double m)
554.        {
555.            double discount;
556.            discount = m*0.05;
557.            return discount;
558.        }
559.
560.        //*****************************************************
561.        // Function to calculate customer total after discount
562.        //*****************************************************
563.        double mdis_total(double mt)
564.        {
565.            double mtotal;
566.            mtotal = mt*0.95;
567.            return mtotal;
568.        }
```

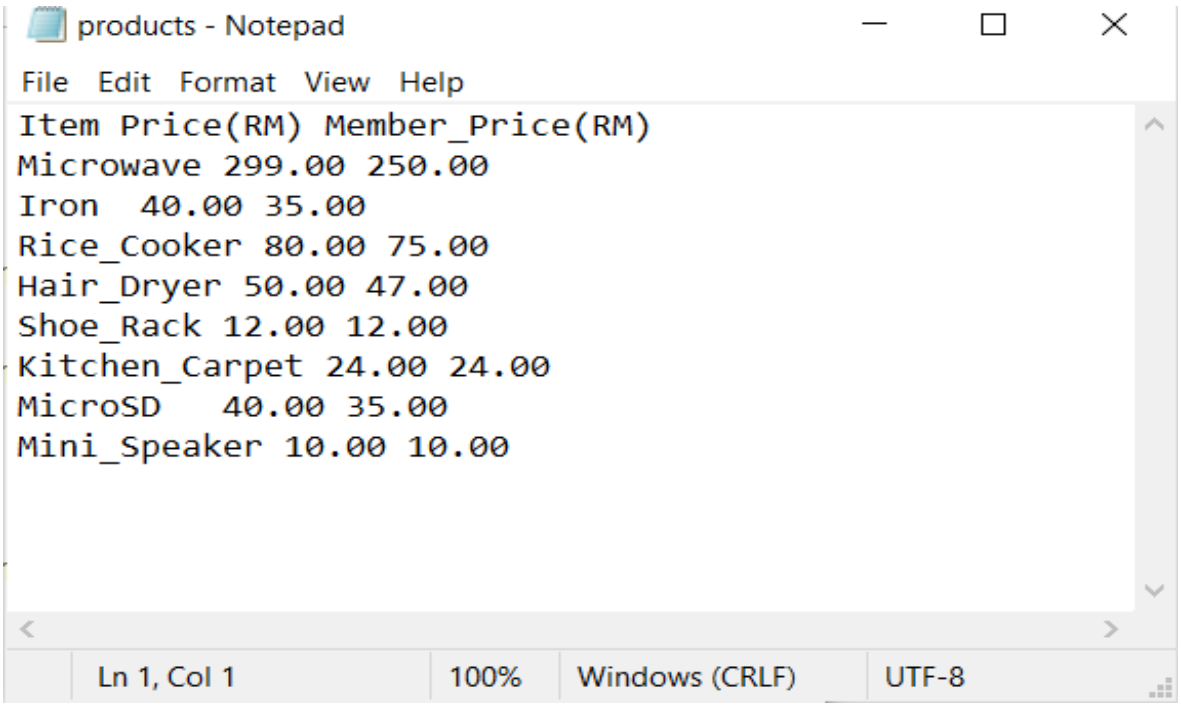
```
569.
570.
571.
572.
573.
574.        //***************************************
575.        // Function to calculate staff subsidy
576.        //***************************************
577.        double s_subsidy(double s)
578.        {
579.            double subsidy;
580.            if(s>=5 && s<=30){
581.                  subsidy = 1.00;
582.                }
583.            else if(s>=31 && s<=99){
584.                  subsidy = 5.00;
585.                }
586.            else if(s>=100){
587.                  subsidy = 10.00;
588.                }
589.            else{
590.                  subsidy = 0.00;
591.                }
592.            return subsidy;
593.        }
594.
595.        //***********************************************
596.        // Function to calculate staff saving achieved
597.        //***********************************************
598.        double sdis_applied(double sb,double s)
599.        {
600.            double discount;
601.            if(s>=5 && s<=30){
602.                  sb = 1.00;
603.                  discount = s - sb;
604.                }
605.            else if(s>=31 && s<=99){
606.                  sb = 5.00;
607.                  discount = s - sb;
608.                }
609.            else if(s>=100){
610.                  sb = 10.00;
611.                  discount = s - sb;
612.                }
613.            else{
614.                  sb = 0.00;
615.                  discount = s;
616.                }
617.            return discount;
618.        }
```

Print Screen of Actual Runs

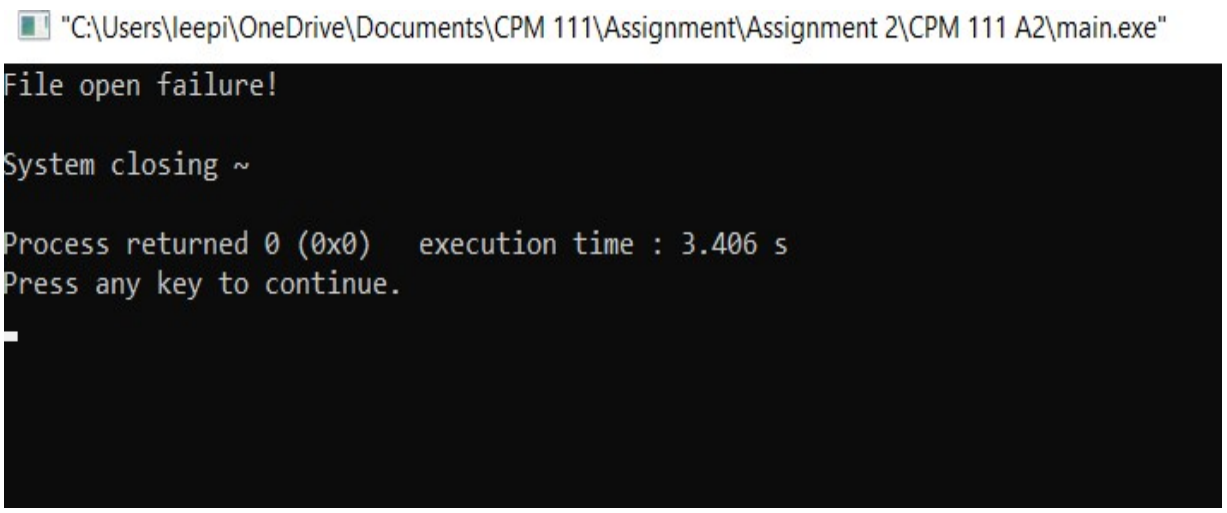
Main menu display :



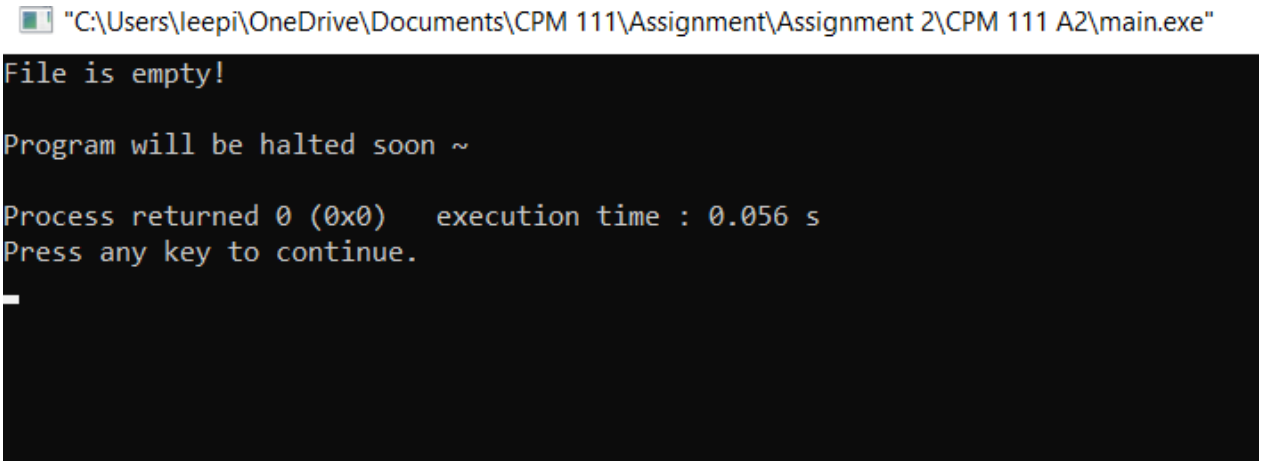
Text File named products :



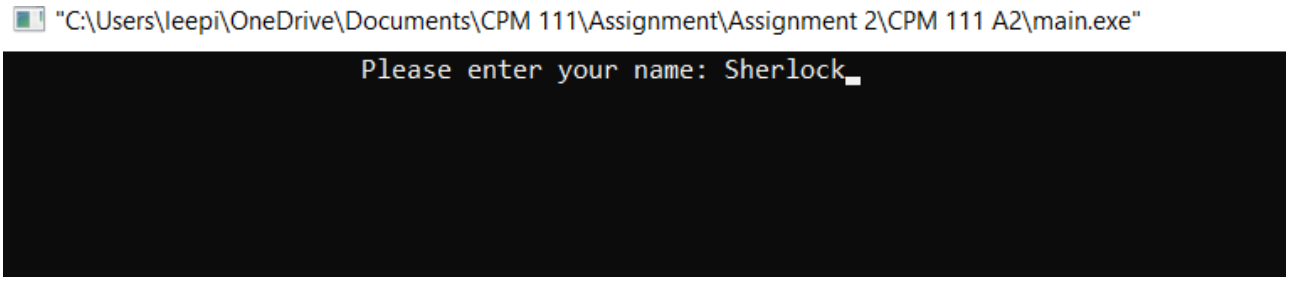
When Text File failed to open :



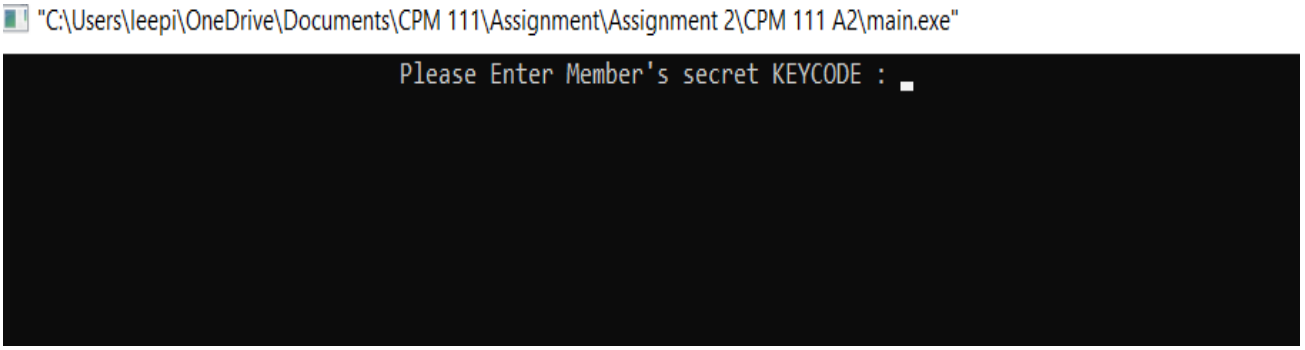
When Text File is empty :



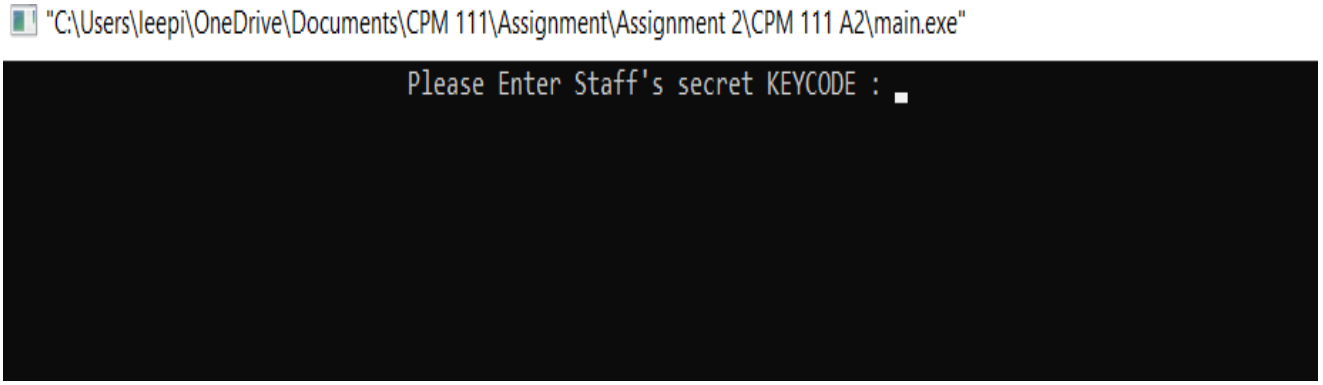
After user input ‘1’



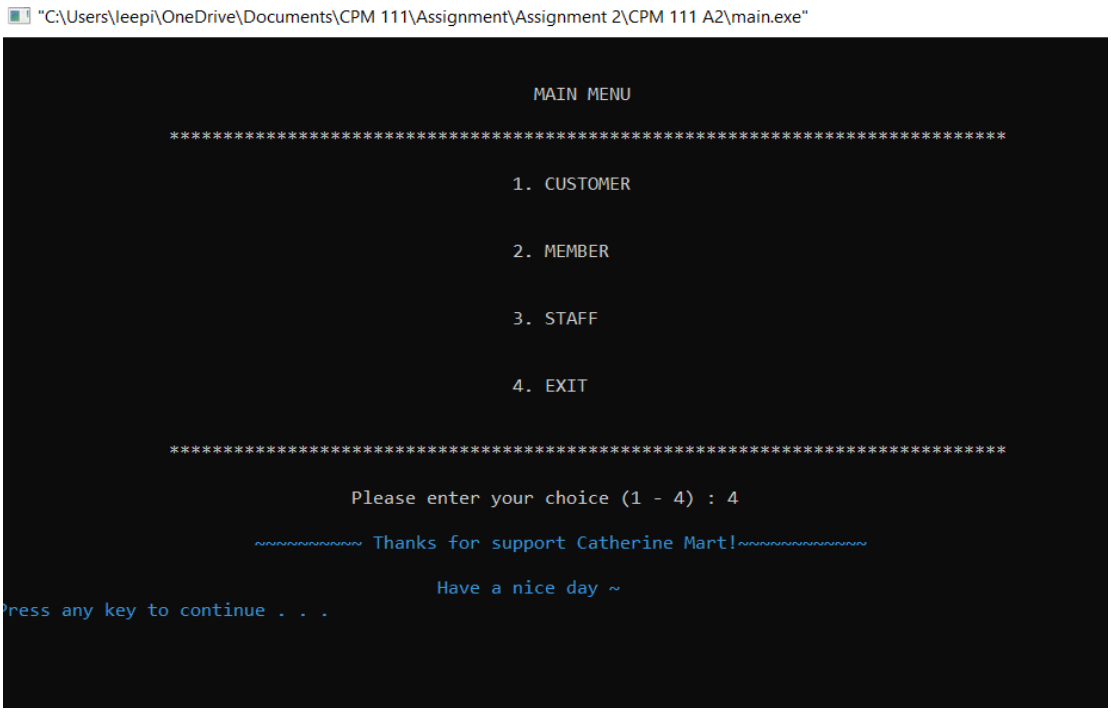
After user input ‘2’



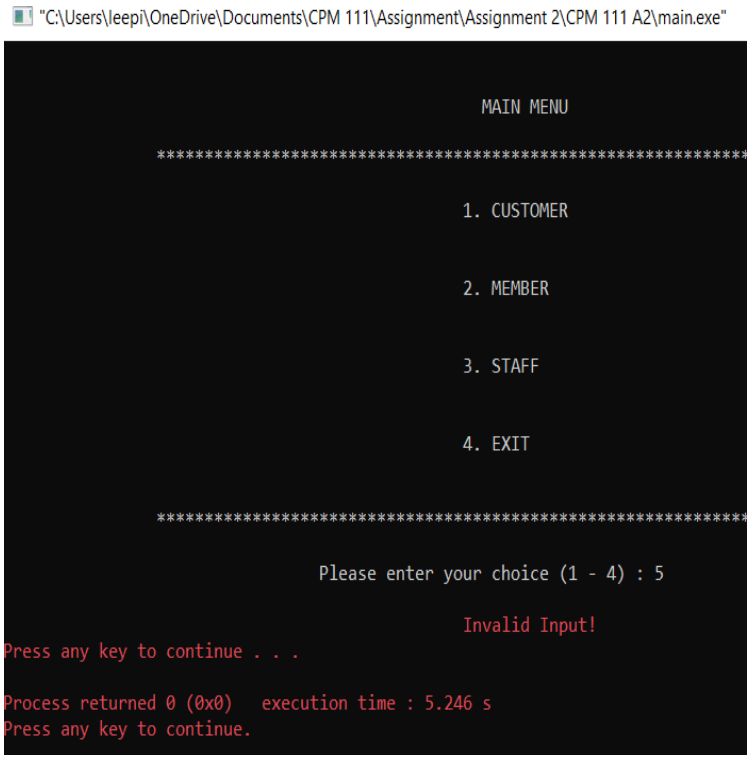
After user input ‘3’

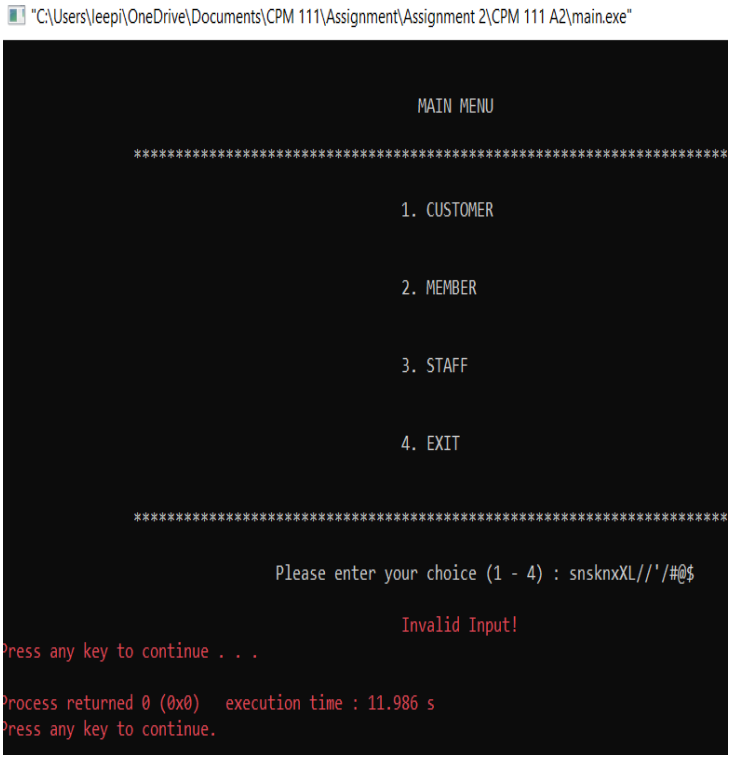


After user input ‘4’

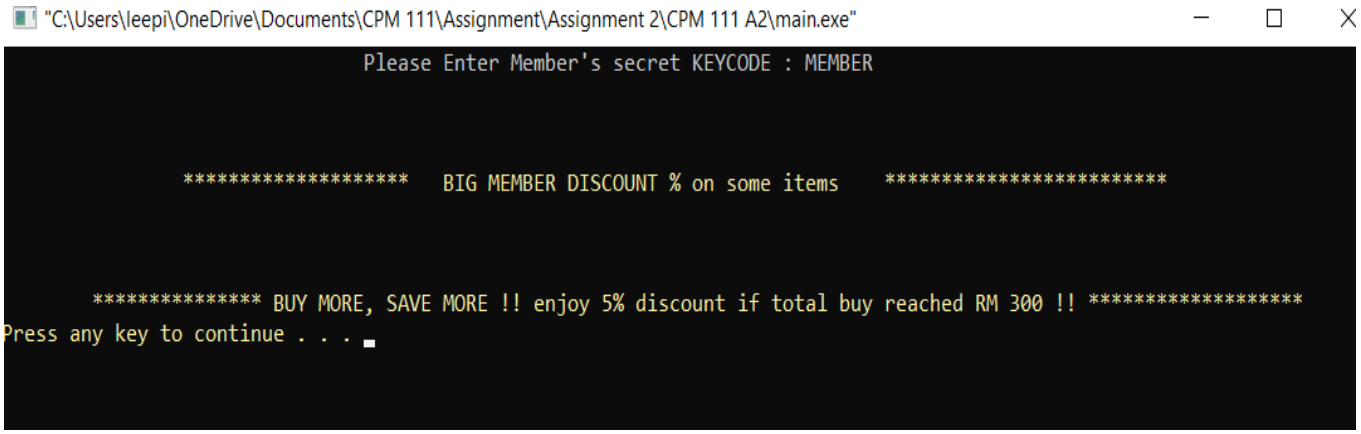


When user input numbers other than 1-4 or alphabets :

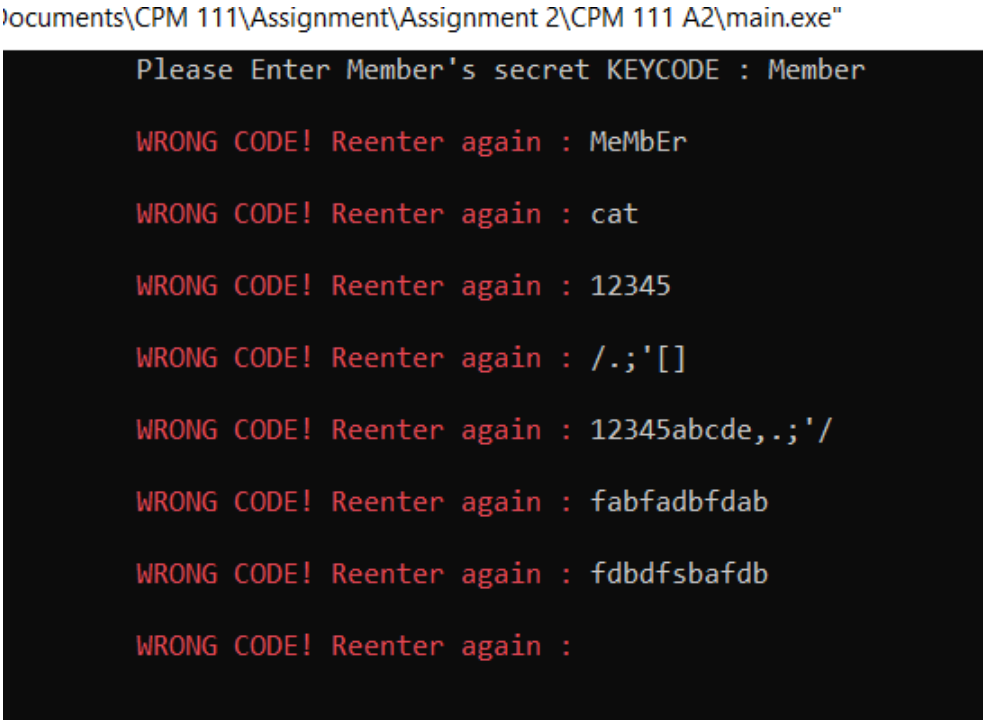




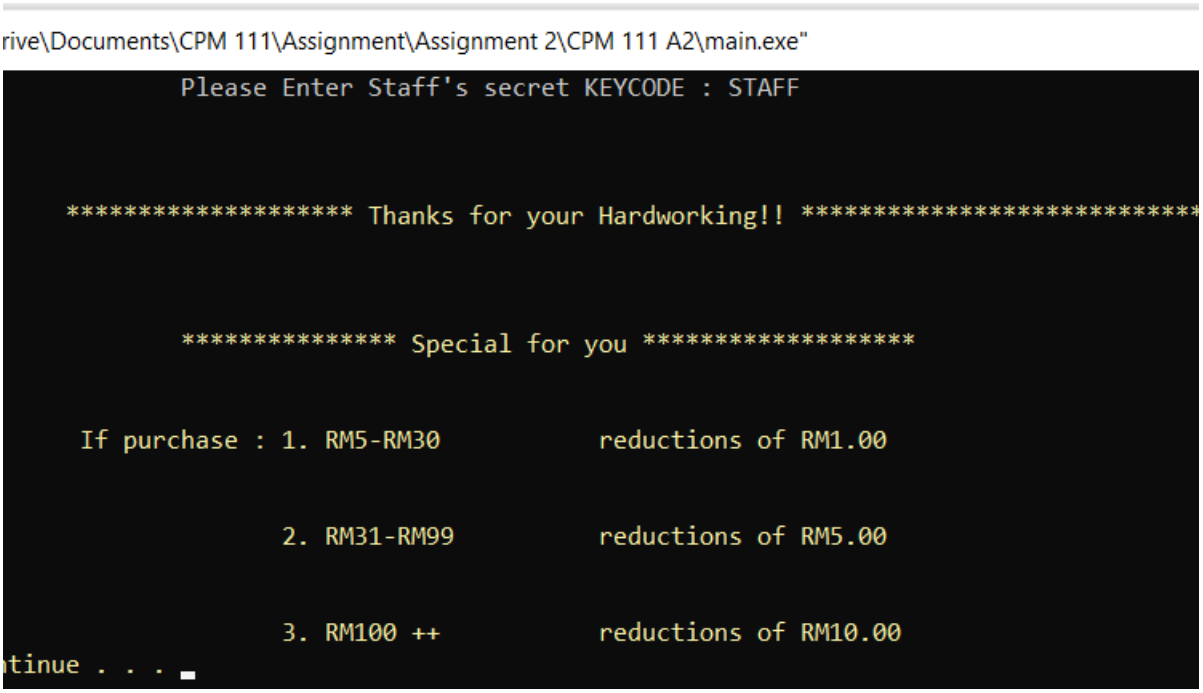
When user input correct member key code :



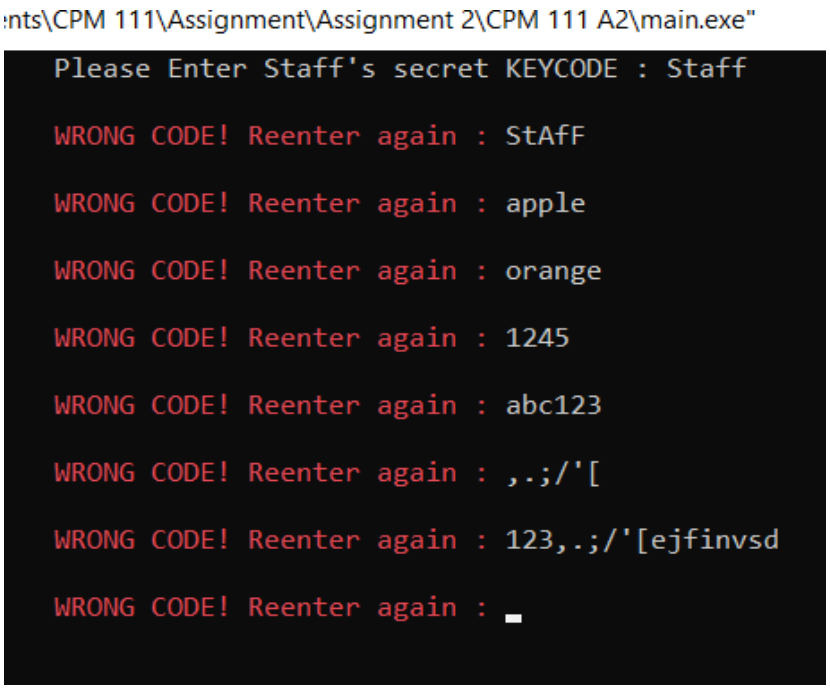
When user input wrong member key code :



When user input correct staff key code :



When user input wrong staff key code :



After user input name :

pi\OneDrive\Documents\CPM 111\Assignment\Assignment 2\CPM 111 A2\main.exe"

```
                              Dear Sherlock

                       Welcome to Catherine Mart!!

 ========================  Items and Price Listing  ========================

          Item                Price(RM)                Member Price(RM)
        1. Microwave            299.00                   250.00
        2. Iron                 40.00                    35.00
        3. Rice_Cooker          80.00                    75.00
        4. Hair_Dryer           50.00                    47.00
        5. Shoe_Rack            12.00                    12.00
        6. Kitchen_Carpet       24.00                    24.00
        7. MicroSD              40.00                    35.00
        8. Mini_Speaker         10.00                    10.00

 ==========================================================================
        What do you want to buy? Enter item code (1-8) : _
```

When user input ‘1’ :

Drive\Documents\CPM 111\Assignment\Assignment 2\CPM 111 A2\main.exe"

```
                              Dear Sherlock

                       Welcome to Catherine Mart!!

=====================  Items and Price Listing  ========================

        Item                Price(RM)                Member Price(RM)
     1. Microwave            299.00                   250.00
     2. Iron                 40.00                    35.00
     3. Rice_Cooker          80.00                    75.00
     4. Hair_Dryer           50.00                    47.00
     5. Shoe_Rack            12.00                    12.00
     6. Kitchen_Carpet       24.00                    24.00
     7. MicroSD              40.00                    35.00
     8. Mini_Speaker         10.00                    10.00

==========================================================================
     What do you want to buy? Enter item code (1-8) : 1
     How many Microwave would u like to buy : _
```

After user enter quantity of item1 :

```
==========================================================================
 What do you want to buy? Enter item code (1-8) : 1
 How many Microwave would u like to buy : 10

 Enter item code (1-8) for buying or any alphabet for checkout:
```

```
eDrive\Documents\CPM 111\Assignment\Assignment 2\CPM 111 A2\main.exe"
                              Dear Sherlock

                        Welcome to Catherine Mart!!

======================  Items and Price Listing  ======================

        Item                  Price(RM)                 Member Price(RM)
      1. Microwave              299.00                     250.00
      2. Iron                   40.00                      35.00
      3. Rice_Cooker            80.00                      75.00
      4. Hair_Dryer             50.00                      47.00
      5. Shoe_Rack              12.00                      12.00
      6. Kitchen_Carpet         24.00                      24.00
      7. MicroSD                40.00                      35.00
      8. Mini_Speaker           10.00                      10.00

========================================================================
      What do you want to buy? Enter item code (1-8) : 2
      How many Iron would u like to buy : _
```

After user enter quantity of item2:

```
========================================================================
 What do you want to buy? Enter item code (1-8) : 2
 How many Iron would u like to buy : 10

 Enter item code (1-8) for buying or any alphabet for checkout: _
```

When user input '3':

```
                            Dear Sherlock

                      Welcome to Catherine Mart!!

====================  Items and Price Listing  ======================

     Item                  Price(RM)                 Member Price(RM)
   1. Microwave              299.00                     250.00
   2. Iron                   40.00                      35.00
   3. Rice_Cooker            80.00                      75.00
   4. Hair_Dryer             50.00                      47.00
   5. Shoe_Rack              12.00                      12.00
   6. Kitchen_Carpet         24.00                      24.00
   7. MicroSD                40.00                      35.00
   8. Mini_Speaker           10.00                      10.00

========================================================================
   What do you want to buy? Enter item code (1-8) : 3
   How many Rice_Cooker would u like to buy : _
```

After user enter quantity of item3:

```
========================================================================
 What do you want to buy? Enter item code (1-8) : 3
 How many Rice_Cooker would u like to buy : 10

 Enter item code (1-8) for buying or any alphabet for checkout: _
```

When user input '4':

```
                          Dear Sherlock

                    Welcome to Catherine Mart!!

====================  Items and Price Listing  ======================

      Item                  Price(RM)              Member Price(RM)
    1. Microwave              299.00                  250.00
    2. Iron                   40.00                   35.00
    3. Rice_Cooker            80.00                   75.00
    4. Hair_Dryer             50.00                   47.00
    5. Shoe_Rack              12.00                   12.00
    6. Kitchen_Carpet         24.00                   24.00
    7. MicroSD                40.00                   35.00
    8. Mini_Speaker           10.00                   10.00

=======================================================================
    What do you want to buy? Enter item code (1-8) : 4
    How many Hair_Dryer would u like to buy : _
```

After user enter quantity of item4:

```
=======================================================================
What do you want to buy? Enter item code (1-8) : 4
How many Hair_Dryer would u like to buy : 10

Enter item code (1-8) for buying or any alphabet for checkout: _
```

When user input '5':

```
                          Dear Sherlock

                    Welcome to Catherine Mart!!

====================  Items and Price Listing  ======================

      Item                  Price(RM)              Member Price(RM)
    1. Microwave              299.00                  250.00
    2. Iron                   40.00                   35.00
    3. Rice_Cooker            80.00                   75.00
    4. Hair_Dryer             50.00                   47.00
    5. Shoe_Rack              12.00                   12.00
    6. Kitchen_Carpet         24.00                   24.00
    7. MicroSD                40.00                   35.00
    8. Mini_Speaker           10.00                   10.00

=======================================================================
    What do you want to buy? Enter item code (1-8) : 5
    How many Shoe_Rack would u like to buy : _
```

After user enter quantity of item5:

```
=======================================================================
What do you want to buy? Enter item code (1-8) : 5
How many Shoe_Rack would u like to buy : 10

Enter item code (1-8) for buying or any alphabet for checkout:
```

When user input '6' :

```
                        Dear Sherlock

                Welcome to Catherine Mart!!

==================  Items and Price Listing  ====================

      Item                Price(RM)              Member Price(RM)
    1. Microwave            299.00                  250.00
    2. Iron                 40.00                   35.00
    3. Rice_Cooker          80.00                   75.00
    4. Hair_Dryer           50.00                   47.00
    5. Shoe_Rack            12.00                   12.00
    6. Kitchen_Carpet       24.00                   24.00
    7. MicroSD              40.00                   35.00
    8. Mini_Speaker         10.00                   10.00

================================================================
    What do you want to buy? Enter item code (1-8) : 6
    How many Kitchen_Carpet would u like to buy : _
```

After user enter quantity of item6 :

```
================================================================
What do you want to buy? Enter item code (1-8) : 6
How many Kitchen_Carpet would u like to buy : 10

Enter item code (1-8) for buying or any alphabet for checkout:
```

When user input '7' :

```
Drive\Documents\CPM 111\Assignment\Assignment 2\CPM 111 A2\main.exe
                        Dear Sherlock

                Welcome to Catherine Mart!!

==================  Items and Price Listing  ====================

      Item                Price(RM)              Member Price(RM)
    1. Microwave            299.00                  250.00
    2. Iron                 40.00                   35.00
    3. Rice_Cooker          80.00                   75.00
    4. Hair_Dryer           50.00                   47.00
    5. Shoe_Rack            12.00                   12.00
    6. Kitchen_Carpet       24.00                   24.00
    7. MicroSD              40.00                   35.00
    8. Mini_Speaker         10.00                   10.00

================================================================
    What do you want to buy? Enter item code (1-8) : 7
    How many MicroSD would u like to buy : _
```

After user enter quantity of item7 :

```
================================================================
What do you want to buy? Enter item code (1-8) : 7
How many MicroSD would u like to buy : 10

Enter item code (1-8) for buying or any alphabet for checkout:
```

When user input ‘8’ :

```
ive\Documents\CPM 111\Assignment\Assignment 2\CPM 111 A2\main.exe"

                          Dear Sherlock

                  Welcome to Catherine Mart!!

====================  Items and Price Listing  ======================

      Item                Price(RM)              Member Price(RM)
    1. Microwave            299.00                  250.00
    2. Iron                 40.00                   35.00
    3. Rice_Cooker          80.00                   75.00
    4. Hair_Dryer           50.00                   47.00
    5. Shoe_Rack            12.00                   12.00
    6. Kitchen_Carpet       24.00                   24.00
    7. MicroSD              40.00                   35.00
    8. Mini_Speaker         10.00                   10.00

========================================================================
    What do you want to buy? Enter item code (1-8) : 8
    How many Mini_Speaker would u like to buy :
```

After user enter quantity of item8 :

```
========================================================================
 What do you want to buy? Enter item code (1-8) : 8
 How many Mini_Speaker would u like to buy : 10

 Enter item code (1-8) for buying or any alphabet for checkout:
```

When user input number out of (1-8) range :

```
rive\Documents\CPM 111\Assignment\Assignment 2\CPM 111 A2\main.exe"

                          Dear Sherlock

                  Welcome to Catherine Mart!!

====================  Items and Price Listing  ======================

      Item                Price(RM)              Member Price(RM)
    1. Microwave            299.00                  250.00
    2. Iron                 40.00                   35.00
    3. Rice_Cooker          80.00                   75.00
    4. Hair_Dryer           50.00                   47.00
    5. Shoe_Rack            12.00                   12.00
    6. Kitchen_Carpet       24.00                   24.00
    7. MicroSD              40.00                   35.00
    8. Mini_Speaker         10.00                   10.00

========================================================================
    What do you want to buy? Enter item code (1-8) : 9

    Invalid input. Please try again.

    Enter item code (1-8) for buying or any alphabet for checkout: 10

    Invalid input. Please try again.

    Enter item code (1-8) for buying or any alphabet for checkout: 12

    Invalid input. Please try again.
```

When user input non numbers (for checkout) :

```
                          Dear Sherlock

                  Welcome to Catherine Mart!!

==================  Items and Price Listing  ======================

     Item                 Price(RM)                Member Price(RM)
   1. Microwave             299.00                    250.00
   2. Iron                  40.00                     35.00
   3. Rice_Cooker           80.00                     75.00
   4. Hair_Dryer            50.00                     47.00
   5. Shoe_Rack             12.00                     12.00
   6. Kitchen_Carpet        24.00                     24.00
   7. MicroSD               40.00                     35.00
   8. Mini_Speaker          10.00                     10.00

=====================================================================
   What do you want to buy? Enter item code (1-8) : a
```

```
=====================================================================
What do you want to buy? Enter item code (1-8) : kjnaskca'/]/]
```

```
OneDrive\Documents\CPM 111\Assignment\Assignment 2\CPM 111 A2\main.exe"
Tue May 26 21:49:51 2020
                            CATHERINE MART
                            Address : 54, ABC street
                            Telp    : 123456789
 ---------------------------------------------------------------------------
                                    RECEIPT
 ---------------------------------------------------------------------------
 ACQUIRENTI : Sherlock
 ---------------------------------------------------------------------------
 ITEM                       QUANTITY       UNIT PRICE      AMOUNT OF SALE
 ---------------------------------------------------------------------------
 ---------------------------------------------------------------------------
                                          Total buys :     RM 0.00
 ---------------------------------------------------------------------------

        Sorry ~ you almost hit the target, purchase more and save more next time!

                Thanks for supporting Catherine Mart, Have A Nice Day ~
) continue . . .
```

For customer (user that input ‘1’ for choice) :

i. Customer buying below RM300

i\OneDrive\Documents\CPM 111\Assignment\Assignment 2\CPM 111 A2\main.exe

```
Tue May 26 22:08:19 2020
                                CATHERINE MART
                                Address : 54, ABC street
                                Telp    : 123456789
 ---------------------------------------------------------------------------
                                      RECEIPT
 ---------------------------------------------------------------------------
 ACQUIRENTI : Sherlock
 ---------------------------------------------------------------------------
 ITEM                           QUANTITY        UNIT PRICE      AMOUNT OF SALE
 ---------------------------------------------------------------------------
 Iron                              1            RM   40.00       RM 40.00
 Rice_Cooker                       1            RM   80.00       RM 80.00
 Mini_Speaker                      3            RM   10.00       RM 30.00
 ---------------------------------------------------------------------------
                                                Total buys :     RM 150.00
 ---------------------------------------------------------------------------

        Sorry ~ you almost hit the target, purchase more and save more next time!

                Thanks for supporting Catherine Mart, Have A Nice Day ~
to continue . . .
```

ii. Customer buying above RM300

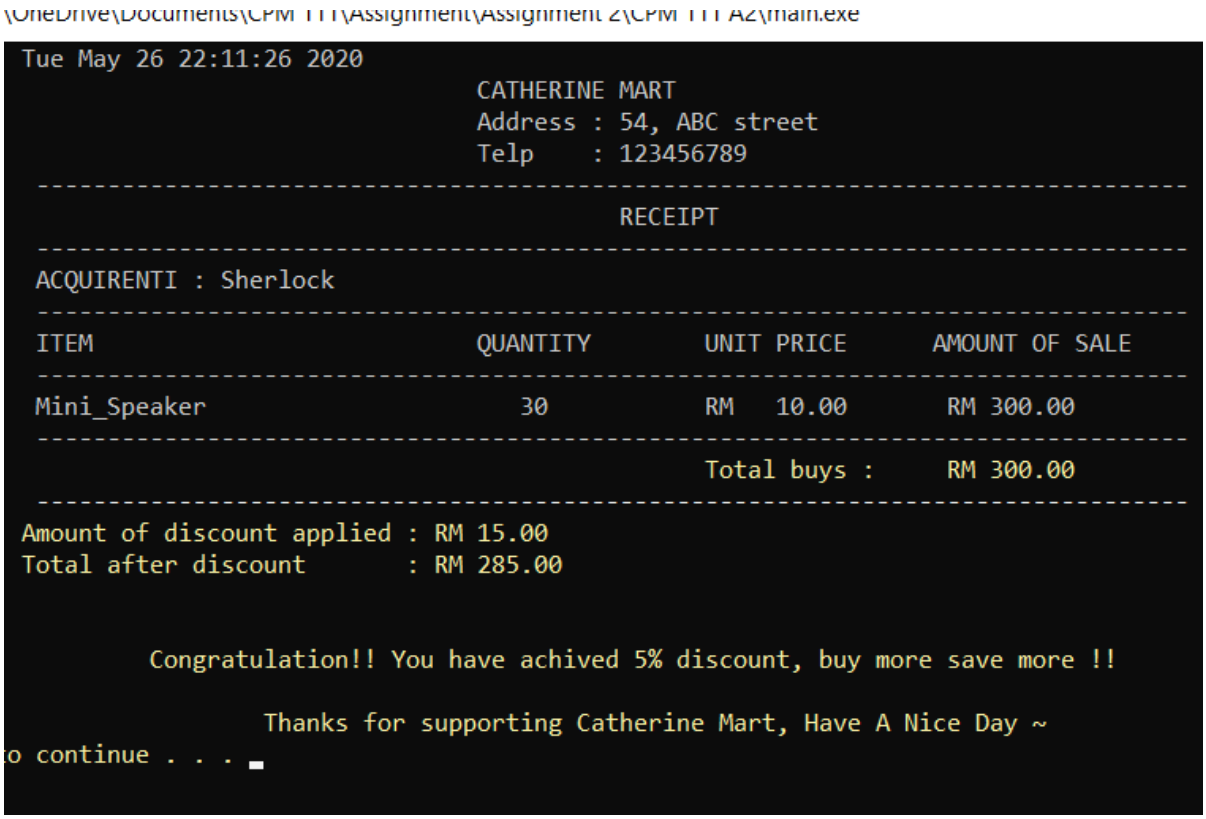
i\OneDrive\Documents\CPM 111\Assignment\Assignment 2\CPM 111 A2\main.exe"

```
Tue May 26 22:09:28 2020
                                CATHERINE MART
                                Address : 54, ABC street
                                Telp    : 123456789
 ---------------------------------------------------------------------------
                                      RECEIPT
 ---------------------------------------------------------------------------
 ACQUIRENTI : Sherlock
 ---------------------------------------------------------------------------
 ITEM                           QUANTITY        UNIT PRICE      AMOUNT OF SALE
 ---------------------------------------------------------------------------
 Microwave                         10           RM  299.00       RM 2990.00
 Rice_Cooker                       10           RM   80.00       RM 800.00
 Hair_Dryer                        10           RM   50.00       RM 500.00
 Mini_Speaker                      10           RM   10.00       RM 100.00
 ---------------------------------------------------------------------------
                                                Total buys :     RM 4390.00
 ---------------------------------------------------------------------------
 Amount of discount applied : RM 219.50
 Total after discount       : RM 4170.50

        Congratulation!! You have achived 5% discount, buy more save more !!

                Thanks for supporting Catherine Mart, Have A Nice Day ~
to continue . . .
```

iii. Customer buying at RM300



For Member (user that input ‘2’ for choice) :

i. Member buying below RM300

```
i\OneDrive\Documents\CPM 111\Assignment\Assignment 2\CPM 111 A2\main.exe
Tue May 26 22:12:47 2020
                                CATHERINE MART
                                Address : 54, ABC street
                                Telp    : 123456789
 ------------------------------------------------------------------------------
                                      RECEIPT
 ------------------------------------------------------------------------------
 ACQUIRENTI : Sherlock
 ------------------------------------------------------------------------------
 ITEM                           QUANTITY        UNIT PRICE      AMOUNT OF SALE
 ------------------------------------------------------------------------------
 Iron                              1            RM   35.00       RM 35.00
 Rice_Cooker                       1            RM   75.00       RM 75.00
 Shoe_Rack                         2            RM   12.00       RM 24.00
 Kitchen_Carpet                    3            RM   24.00       RM 24.00
 ------------------------------------------------------------------------------
                                                Total buys :     RM 158.00
 ------------------------------------------------------------------------------

         Sorry ~ you almost hit the target, purchase more and save more next time!

                  Thanks for supporting Catherine Mart, Have A Nice Day ~
to continue . . .
```

ii. Member buying above RM300

```
i\OneDrive\Documents\CPM 111\Assignment\Assignment 2\CPM 111 A2\main.exe"
Tue May 26 22:13:41 2020
                                CATHERINE MART
                                Address : 54, ABC street
                                Telp    : 123456789
 ------------------------------------------------------------------------------
                                      RECEIPT
 ------------------------------------------------------------------------------
 ACQUIRENTI : Sherlock
 ------------------------------------------------------------------------------
 ITEM                           QUANTITY        UNIT PRICE      AMOUNT OF SALE
 ------------------------------------------------------------------------------
 Microwave                         10           RM  250.00       RM 2500.00
 Iron                              10           RM   35.00       RM 350.00
 Rice_Cooker                       10           RM   75.00       RM 750.00
 Shoe_Rack                         5            RM   12.00       RM 60.00
 Kitchen_Carpet                    3            RM   24.00       RM 24.00
 MicroSD                           2            RM   35.00       RM 70.00
 ------------------------------------------------------------------------------
                                                Total buys :     RM 3754.00
 ------------------------------------------------------------------------------
 Savings that u have achieved : RM 187.70
 Total after discount         : RM 3566.30

         Congratulation!! You have achived 5% discount, buy more save more ~~~~

                  Thanks for supporting Catherine Mart, Have A Nice Day ~
to continue . . .
```

iii. Member buying at RM 300

```
)i\OneDrive\Documents\CPM 111\Assignment\Assignment 2\CPM 111 A2\main.exe"
  Tue May 26 22:16:33 2020
                                CATHERINE MART
                                Address : 54, ABC street
                                Telp    : 123456789
   ------------------------------------------------------------------------------
                                          RECEIPT
   ------------------------------------------------------------------------------
   ACQUIRENTI : Sherlock
   ------------------------------------------------------------------------------
   ITEM                          QUANTITY        UNIT PRICE      AMOUNT OF SALE
   ------------------------------------------------------------------------------
   Microwave                        1            RM  250.00       RM 250.00
   Mini_Speaker                     5            RM   10.00       RM 50.00
   ------------------------------------------------------------------------------
                                                 Total buys :     RM 300.00
   ------------------------------------------------------------------------------
   Savings that u have achieved : RM 15.00
   Total after discount       : RM 285.00

           Congratulation!! You have achived 5% discount, buy more save more ~~~~

                    Thanks for supporting Catherine Mart, Have A Nice Day ~
to continue . . .
```

For Staff (user that input ‘3’ for choice) :

i. Staff buying below RM300

```
Tue May 26 22:21:03 2020
                                CATHERINE MART
                                Address : 54, ABC street
                                Telp    : 123456789
 ---------------------------------------------------------------------------
                                      RECEIPT
 ---------------------------------------------------------------------------
 ACQUIRENTI : Sherlock
 ---------------------------------------------------------------------------
 ITEM                           QUANTITY        UNIT PRICE      AMOUNT OF SALE
 ---------------------------------------------------------------------------
 Hair_Dryer                        1            RM   50.00       RM 50.00
 Shoe_Rack                         1            RM   12.00       RM 12.00
 Kitchen_Carpet                    1            RM   24.00       RM 24.00
 MicroSD                           1            RM   40.00       RM 40.00
 Mini_Speaker                      1            RM   10.00       RM 10.00
 ---------------------------------------------------------------------------
                                                Total buys :     RM 136.00
 ---------------------------------------------------------------------------
Savings that u have achieved : RM 10.00
Total amount after subsidize : RM 126.00


         Congratulation!! You can enjoy staff subsidy, buy more save more ~~~~

                Thanks for supporting Catherine Mart, Have A Nice Day ~
to continue . . .
```

ii. Staff buying above RM300

```
Tue May 26 22:22:31 2020
                                CATHERINE MART
                                Address : 54, ABC street
                                Telp    : 123456789
 ---------------------------------------------------------------------------
                                      RECEIPT
 ---------------------------------------------------------------------------
 ACQUIRENTI : Sherlock
 ---------------------------------------------------------------------------
 ITEM                           QUANTITY        UNIT PRICE      AMOUNT OF SALE
 ---------------------------------------------------------------------------
 Microwave                         2            RM  299.00       RM 598.00
 Iron                              3            RM   40.00       RM 120.00
 Rice_Cooker                       4            RM   80.00       RM 320.00
 Shoe_Rack                         1            RM   12.00       RM 12.00
 Kitchen_Carpet                    2            RM   24.00       RM 96.00
 Mini_Speaker                      2            RM   10.00       RM 20.00
 ---------------------------------------------------------------------------
                                                Total buys :     RM 1166.00
 ---------------------------------------------------------------------------
Savings that u have achieved : RM 10.00
Total amount after subsidize : RM 1156.00

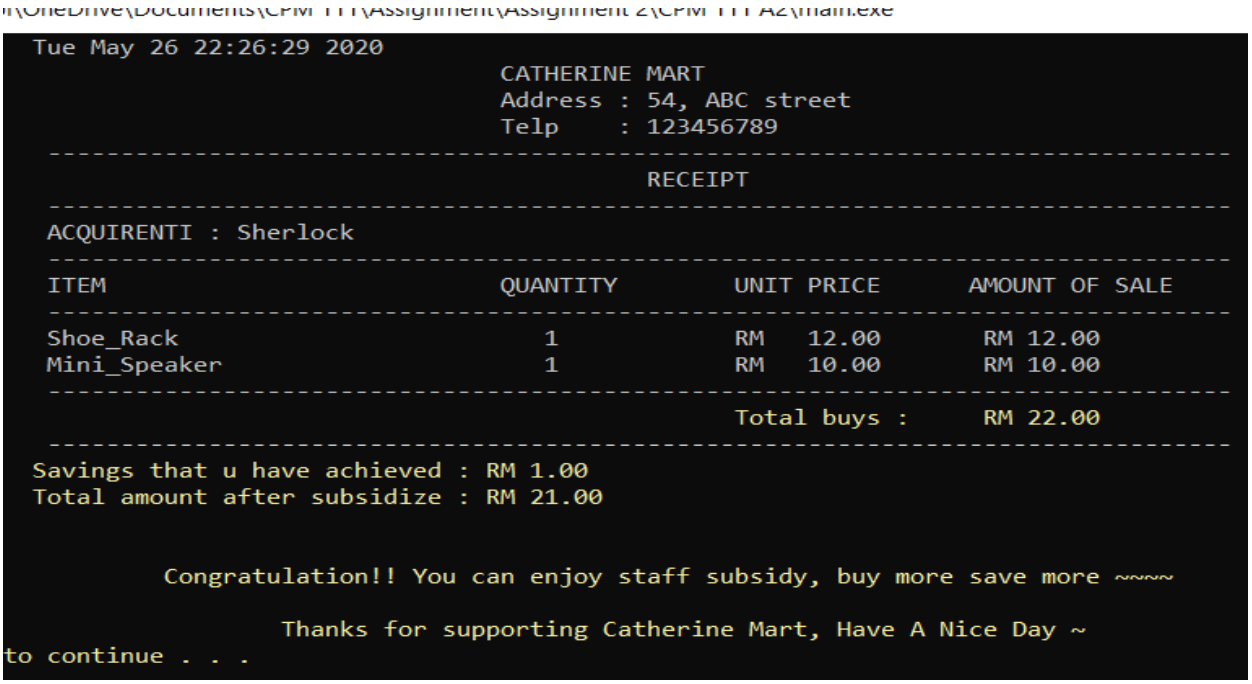

         Congratulation!! You can enjoy staff subsidy, buy more save more ~~~~

                Thanks for supporting Catherine Mart, Have A Nice Day ~
to continue . . .
```

iii. Staff buying at RM300

For Staff subsidy case :

i. Staff buying at RM 5- RM 30



```
Tue May 26 22:27:41 2020
                                CATHERINE MART
                                Address : 54, ABC street
                                Telp    : 123456789
 ------------------------------------------------------------------------------
                                        RECEIPT
 ------------------------------------------------------------------------------
 ACQUIRENTI : Sherlock
 ------------------------------------------------------------------------------
 ITEM                           QUANTITY        UNIT PRICE      AMOUNT OF SALE
 ------------------------------------------------------------------------------
 Mini_Speaker                      1            RM   10.00       RM 10.00
 ------------------------------------------------------------------------------
                                                Total buys :     RM 10.00
 ------------------------------------------------------------------------------
Savings that u have achieved : RM 1.00
Total amount after subsidize : RM 9.00


         Congratulation!! You can enjoy staff subsidy, buy more save more ~~~~

                  Thanks for supporting Catherine Mart, Have A Nice Day ~
to continue . . .
```

ii. Staff buying at RM31-RM99

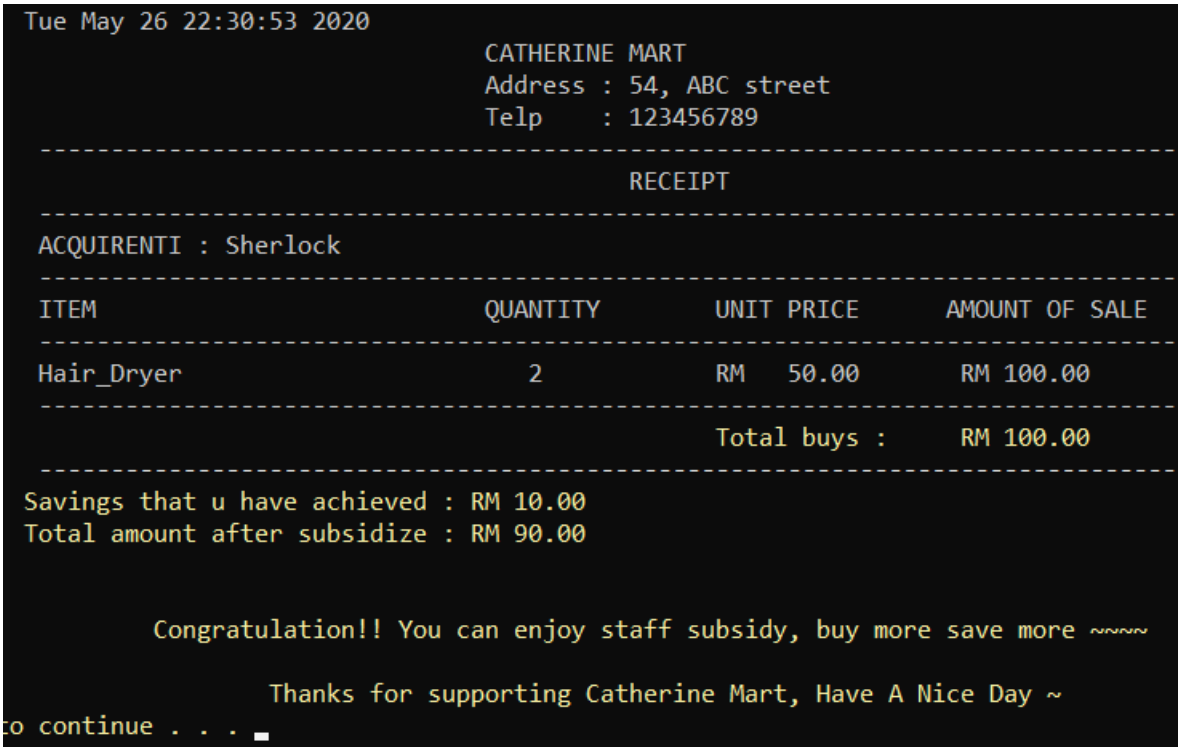
epi\OneDrive\Documents\CPM 111\Assignment\Assignment 2\CPM 111 A2\main.exe

```
  Tue May 26 22:28:46 2020
                                CATHERINE MART
                                Address : 54, ABC street
                                Telp    : 123456789
  ------------------------------------------------------------------------------
                                        RECEIPT
  ------------------------------------------------------------------------------
  ACQUIRENTI : Sherlock
  ------------------------------------------------------------------------------
  ITEM                           QUANTITY        UNIT PRICE      AMOUNT OF SALE
  ------------------------------------------------------------------------------
  Hair_Dryer                        1            RM   50.00       RM 50.00
  Kitchen_Carpet                    1            RM   24.00       RM 24.00
  Mini_Speaker                      1            RM   10.00       RM 10.00
  ------------------------------------------------------------------------------
                                                 Total buys :     RM 84.00
  ------------------------------------------------------------------------------
Savings that u have achieved : RM 5.00
Total amount after subsidize : RM 79.00


         Congratulation!! You can enjoy staff subsidy, buy more save more ~~~~

                  Thanks for supporting Catherine Mart, Have A Nice Day ~
 to continue . . .
```

ii. Staff buying at RM100 or above



```
ɔi\OneDrive\Documents\CPM 111\Assignment\Assignment 2\CPM 111 A2\main.exe"
  Tue May 26 22:31:29 2020
                                CATHERINE MART
                                Address : 54, ABC street
                                Telp    : 123456789
   ---------------------------------------------------------------------------
                                        RECEIPT
   ---------------------------------------------------------------------------
   ACQUIRENTI : Sherlock
   ---------------------------------------------------------------------------
   ITEM                          QUANTITY        UNIT PRICE      AMOUNT OF SALE
   ---------------------------------------------------------------------------
   Microwave                        10           RM  299.00       RM 2990.00
   Iron                             10           RM   40.00       RM 400.00
   Rice_Cooker                      10           RM   80.00       RM 800.00
   Shoe_Rack                        10           RM   12.00       RM 120.00
   Kitchen_Carpet                   10           RM   24.00       RM 2400.00
   MicroSD                          10           RM   40.00       RM 400.00
   Mini_Speaker                     10           RM   10.00       RM 100.00
   ---------------------------------------------------------------------------
                                                 Total buys :     RM 7210.00
   ---------------------------------------------------------------------------
  Savings that u have achieved : RM 10.00
  Total amount after subsidize : RM 7200.00


          Congratulation!! You can enjoy staff subsidy, buy more save more ~~~~

                  Thanks for supporting Catherine Mart, Have A Nice Day ~
to continue . . .
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