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ORGANISATION OF ISLAMIC COOPERATION (OIC)
DEPARTMENT OF ELECTRICAL AND ELECTRONIC ENGINEERING

COURSE NO. : CSE 4271

COURSE TITLE : COMPUTER PROGRAMMING

PROJECT NAME : RESTAURANT MANAGEMENT
SYSTEM

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SUBMITTED BY-

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SECTION : A

Project name: Restaurant Management System

Features implemented in this project:

- (i) The program at first takes some basic information (name and cell phone no.) from the user.
- (ii) Then it will show the menu. The menu will be taken from a file named "menu.txt".
- (iii) The customer decides what they want to order one by one. The program asks the customer if he wants to order more or not every time after entering details of one item.
- (iv) After finishing the order, the program gives the bill to the customer. The bill gets also saved at a file named "details.txt".
- (v) If the customer wants to divide the bill among themselves s/he can also do that.
- (vi) A structure is declared to keep different types of data types (name, cell phone no., item name, item price, item quantity).
- (vii) The program can take input from maximum 50 number of customers.

The code:

```
1 #include<stdio.h>
2 #include<string.h>
3 #include<stdlib.h>
4
5 struct user{
6     char name[50];
7     char cellphone[20];
8     char item[30][50];
9     float price[10];
10    int quantity[10];
11 }details[50];
12
13 float bill(float price[], int quantity){
14
15     if(quantity<=0)
16         return 0;
17     else{
18         return bill(price,quantity-1)+price[quantity-1];
19     }
20
21 }
22
23 int main() {
24
25     int i=1,c,j,k,f;
```

```

26     float itemprice[50],totalbill;
27     char menu;
28     FILE *file1, *file2;
29
30     if((file2=fopen("details.txt", "w"))==NULL){
31         printf("Couldn't write the file.");
32         exit(1);
33     }
34
35     for(c=0;c<50;c++){
36         printf("Enter your name please: \n");
37         fflush(stdin);
38         gets(details[c].name);
39         printf("Enter your cell phone no.: \n");
40         fflush(stdin);
41         scanf("%s", details[c].cellphone);
42         printf("Here's the menu: \n");
43         if((file1=fopen("menu.txt", "r"))==NULL){
44             printf("Couldn't read the file.");
45             exit(1);
46         }
47         while((menu=fgetc(file1))!=EOF){
48             printf("%c", menu);
49         }
50
51         printf("\n");
52
53         for(j=0; i==1;j++){
54             printf("Item? ");
55             fflush(stdin);
56             fgets(details[c].item[j], sizeof(details[c].item[j]), stdin);
57             printf("price? ");
58             fflush(stdin);
59             scanf("%f", &details[c].price[j]);
60             printf("Quantity? ");
61             fflush(stdin);
62             scanf("%d", &details[c].quantity[j]);
63             printf("Want to buy more items (For Yes: press 1, For No:
64 press 0): ");
65             scanf("%d", &i);
66         }
67
68         printf("All details are: \n");
69         printf("Name: %s\n", details[c].name);
70         printf("Cell phone: %s\n", details[c].cellphone);
71
72         for(k=0;k<j;k++){
73             printf("%s\n", details[c].item[k]);
74             printf("%10.2f", details[c].price[k]);
75             printf("%10d\n", details[c].quantity[k]);
76             itemprice[k]=details[c].price[k]*details[c].quantity[k];
77         }

```

```

78
79     totalbill=bill(itemprice,j);
80
81     printf("Your bill is: %10.2f\n",totalbill);
82     printf("Want to devide in friends (press 1 for yes): ");
83     scanf("%d", &i);
84     if(i==1){
85         printf("How many friends? ");
86         scanf("%d", &f);
87         printf("Each friend will have to pay: %.2f\n", totalbill/f);
88     }
89     printf("Your food will be served within 10-15 minutes. Have a
90 happy meal!!!\n");
91
92     fprintf(file2,"All details are: \n");
93     fprintf(file2,"Name: %s\n", details[c].name);
94     fprintf(file2,"Cell phone: %s\n", details[c].cellphone);
95
96     for(k=0;k<j;k++){
97         fprintf(file2,"%s\n", details[c].item[k]);
98         fprintf(file2,"%10.2f", details[c].price[k]);
99         fprintf(file2,"%10d\n", details[c].quantity[k]);
100
101     }
102
103     fprintf(file2,"Bill : %10.2f\n", totalbill);
104     fprintf(file2,"Each friend will have to pay: %.2f\n",
105 totalbill/f);
106
107     printf("New customer? (Press 1 for yes or 0 for no): ");
108     scanf("%d", &i);
109     if(i==0)
110         break;
111 }
112
113     fclose(file1);
114     fclose(file2);

    return 0;
}

```

Step by step explanation:

1. Line 1-3: Necessary header files were declared.
2. Line 5-11: A user defined structure named user was defined. It contains three strings: name, cellphone, item and one array of float variable: price and another array of integer variable: quantity. Then in line the structure variable was declared which is an array of 50 elements.
3. Line 23-112: Main function
4. Line 25-28: Necessary variables were declared.
5. Line 30-33: A file was opened for writing the details of a customer.
6. Line 35-106: A for loop was declared for taking information of maximum 50 number of customers.
7. Line 36-49:
In line 43-46, a file was opened for reading the menu from the text file named "menu.txt"
From line 47-49, a while loop was created for reading character by character from the file until the End Of File (EOF) and printing in the output.
Use of fflush(): This function was used for clearing the output buffer so that the program could take further input of strings after pressing enter button.

Output:

```
C:\Users\Nazmul\OneDrive\Documents\practice1\cseproject.exe
Enter your name please:
Nazmul Aman
Enter your cell phone no.:
01699999000
Here's the menu:
Appetizer:
Hot fries                115
Wedges                  115
Onion rings              119
Tacos                   220
Fried strip chicken     239
Garlic mushroom         249

Rice Meals:
Gyro chicken            239
Grilled chicken steak   279
Fried katsu chicken     299
Roasted tandoori chicken 329
Spicy basil chicken     359
Peri peri steak         389
Creamy shroom stuffed chicken 479

Meat platters:
Katsu chicken           309
Peri peri steak         349
Roasted tandoori        379
Chicken steak           399
Peri peri steak couple(1:2) 799
Shroom stuffed chicken  549

Drinks:
Cold Coffee             110
Choco cold coffee       120
Strawberry shake         120
Oreo cracker            160
Kitkat shake             180
Soft drinks             20
Water                   20
```

8. Line 53-65:

A for loop was created for storing the values of item name, price and quantity in their respected variables. At the end of loop it was asked if the customer wanted to order more items or not. The loop would run until user pressed 0.

Output:

```
Want to buy more items (For Yes: press 1, For No: press 0): 1
Item? Chicken steak
price? 399
Quantity? 1
Want to buy more items (For Yes: press 1, For No: press 0): 1
Item? Oreo cracker
price? 160
Quantity? 1
Want to buy more items (For Yes: press 1, For No: press 0): 0
```

9. Line 67-88:

All the details were printed.

In line 78 a user defined function was called which was defined in line 13-21. The function was a float type function as the output might be in decimal places. The arguments were price and quantity. The function was a recursive function.

Output:

```
All details are:
Name: Nazmul Aman
Cell phone: 01699999000
Hot fries
    115.00      1
Chicken steak
    399.00      1
Oreo cracker
    160.00      1
Your bill is:  674.00
```

From line 81-87, if else statement was declared if the user wanted to divide the bill among friends.

10. Line 90-102: All the details were printed to a file named "details.txt".

11. Line 104-108: If else condition for any new customer.

Output:

```
New customer? (Press 1 for yes or 0 for no): 1
Enter your name please:
Samin Yasar
Enter your cell phone no.:
01333330000
Here's the menu:
Appetizer:
Hot fries                115
Wedges                  115
Onion rings              119
Tacos                    220
Fried strip chicken     239
Garlic mushroom         249

Rice Meals:
Gyro chicken            239
Grilled chicken steak   279
Fried katsu chicken     299
Roasted tandoori chicken 329
Spicy basil chicken     359
Peri peri steak         389
Creamy shroom stuffed chicken 479

Meat platters:
Katsu chicken           309
Peri peri steak         349
Roasted tandoori        379
Chicken steak           399
Peri peri steak couple(1:2) 799
Shroom stuffed chicken  549

Drinks:
Cold Coffee             110
Choco cold coffee       120
Strawberry shake         120
Oreo cracker            160
Kitkat shake             180
Soft drinks             20
Water                   20
```

And the process will continue.

```
Item? Tacos
price? 220
Quantity? 3
Want to buy more items (For Yes: press 1, For No: press 0): 1
Item? Gyro chicken
price? 239
Quantity? 2
Want to buy more items (For Yes: press 1, For No: press 0): 1
Item? Spicy basil chicken
price? 359
Quantity? 1
Want to buy more items (For Yes: press 1, For No: press 0): 1
Item? Kitkat shake
price? 180
Quantity? 1
Want to buy more items (For Yes: press 1, For No: press 0): 1
Item? Strawberry shake
price? 120
Quantity? 1
Want to buy more items (For Yes: press 1, For No: press 0): 1
Item? Soft drinks
price? 20
Quantity? 1
Want to buy more items (For Yes: press 1, For No: press 0): 0
```

```
All details are:
Name: Samin Yasar
Cell phone: 01333330000
Tacos
```

```
220.00      3
Gyro chicken
```

```
239.00      2
Spicy basil chicken
```

```
359.00      1
Kitkat shake
```

```
180.00      1
Strawberry shake
```

```
120.00      1
Soft drinks
```

```
20.00      1
```

```
Your bill is: 1817.00
```

```
Want to devide in friends (press 1 for yes): 1
```

```
How many friends? 3
```

```
Each friend will have to pay: 605.67
```

```
Your food will be served within 10-15 minutes. Have a happy meal!!!
```

```
New customer? (Press 1 for yes or 0 for no): 0
```

```
Process returned 0 (0x0) execution time : 990.368 s
Press any key to continue.
```


The output saved in the file "details.txt":

```
details.txt - Notepad
File Edit View
All details are:
Name: Nazmul Aman
Cell phone: 01699999000
Hot fries
    115.00      1
Chicken steak
    399.00      1
Oreo cracker
    160.00      1
Bill :      674.00
Each friend will have to pay: 84.25
All details are:
Name: Samin Yasar
Cell phone: 01333330000
Tacos
    220.00      3
Gyro chicken
    239.00      2
Spicy basil chicken
    359.00      1
Kitkat shake
    180.00      1
Strawberry shake
    120.00      1
Soft drinks
    20.00       1
Bill :      1817.00
Each friend will have to pay: 605.67
Ln 1, Col 1
100% Windows (CRLF) UTF-8
```