



اُنِيْوَرْسِيْٓتِيْ تِيْكَنُوْلُوْجِيْ مَآرَا
UNIVERSITI
TEKNOLOGI
MARA

FUNDAMENTALS OF ALGORITHMS AND COMPUTER PROBLEM SOLVING

CSC126

Final Report Project

Title: Spa Booking Service System

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Student Name	Student ID	Group
WAN FATIHAH AMIRAH BINTI WAN AZHAR	2022971269	RCS1101A
NUR HANIS NATASYA BINTI GHAZALI	2022791679	RCS1101A
NURUL HAFSAH BINTI ABDUL HADI	2022791939	RCS1101A
NURAINAA BALQIS BINTI MOHD ADLY HAFEZ HEDAYAT	2022770417	RCS1101B

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EXECUTIVE SUMMARY

The purpose of creating this Spa booking service system is for facilitate the customers to book a spa session and choose package online. This system is beneficial because it can save customers time just by booking online and doesn't have to go directly to spa and queue for a booking a session at our spa. Customers also can check availability date using our system, when the date is not available customer can't proceed the booking. Customers just only come on the booking date and have a relax session without rushing with others booking. With this system customers can check the price total for the booking and choose either they want private lounge or standard lounge. The system will calculate the package for customers and the receipt will display. The system is more systematic and efficient to use. The information data that customers key in the system will be keep in a safe place so they not going to loss.

SPA DETAILS

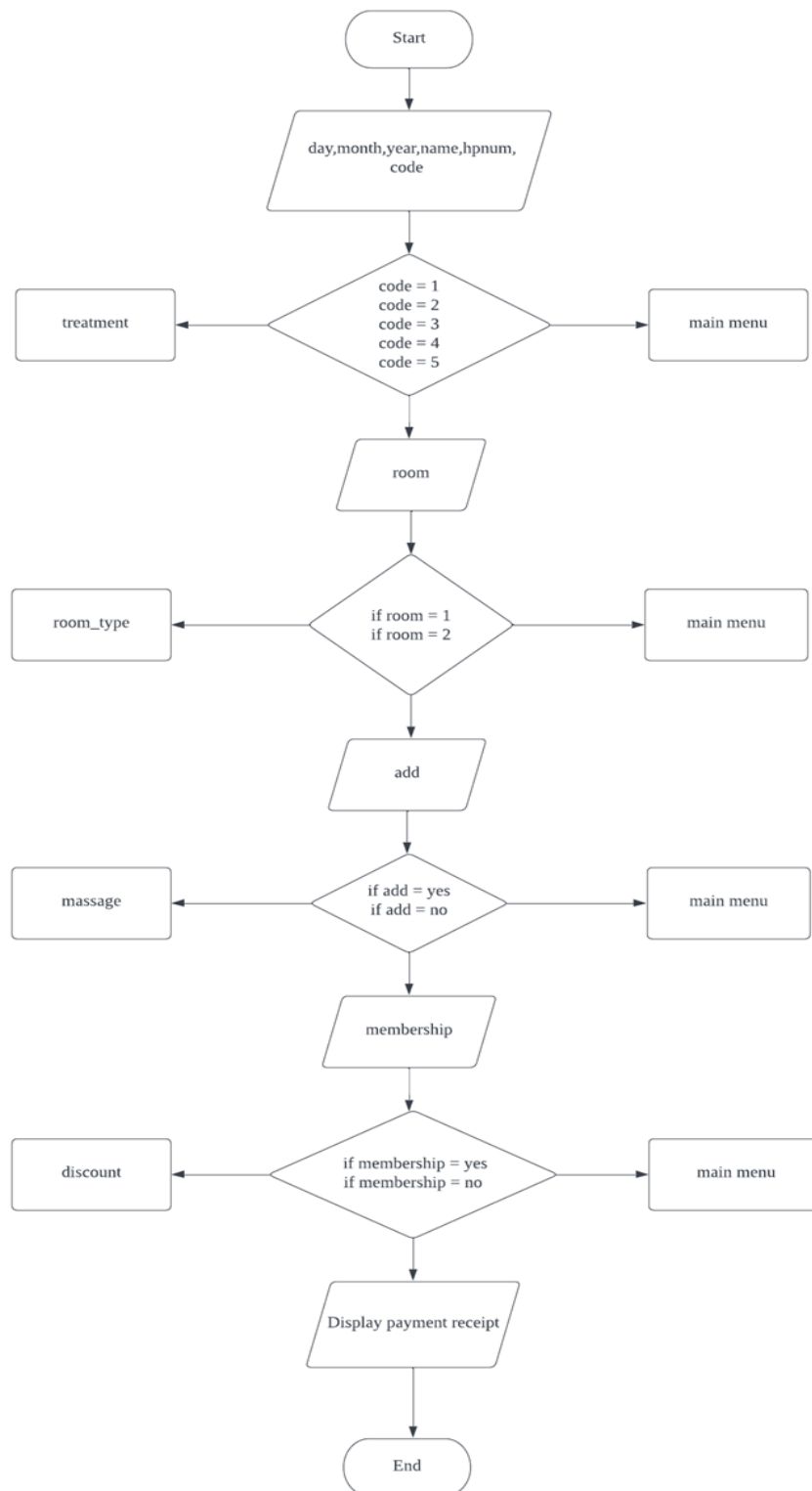
Treatment	Price
Facial	RM200
Manicure	RM100
Pedicure	RM100
Hair cut	RM50
Hair wash	RM60

* Adds on RM50 for private lounge

*Extra massage service adds on RM100 only

* 20% off for membership

FLOWCHART



CODE

```

1 #include <iostream>
2 #include <iomanip>
3 #include <fstream>
4 #include <string>
5 #include <conio.h>
6
7 using namespace std;
8
9 void myPayment(double room_price,double total,double priceR,double priceT,double priceM,double discount,double final_total,double final_discount,string name,string hpnum,string membership,string room_t
10 {
11
12     double tax = 0;
13     total = 0.0;
14     final_discount = 0.0;
15
16     total = priceR + priceT + priceM;
17     tax = total * 0.1;
18     final_total = tax + total;
19
20
21
22     if (membership == "yes" || membership == "Yes")
23     {
24         cout << "\nPlease enter your member ID : ";
25         cin >> cust_id;
26
27         cout << "\nWe will give you 20% discount " << endl;
28
29         discount = (final_total*20) / 100;
30         final_discount = final_total - discount;
31     }
32
33
34     else if (membership == "no" || membership == "No")
35     {
36         cout << "The price is still the same." << endl;
37

```

```

38         discount = 0 ;
39         final_discount = final_total - discount;
40     }
41
42     else
43     {
44         goto start;
45     }
46
47
48     system("pause");
49     system("cls");
50
51     system("color B");
52     start:
53     cout << "\t\t\t\t\t*****\n" << endl;
54     cout << "\t\t\t\t\t Escape Reality Spa " << endl;
55     cout << "\t\t\t\t\t*****" << endl << endl;
56     cout << "Name : " << name << endl;
57     cout << "Phone Number : " << hpnrm << endl << endl;
58     cout << "Room \t\t\t: " << room_type << endl;
59     cout << "Treatment you choose\t: " << treatment << endl;
60     cout << "Booking date \t\t: " << day << "/" << month << "/" << year << endl;
61     cout << fixed << showpoint;
62     cout << "Treatment price \t: RM " << setprecision(2) << price << endl;
63     cout << "Lounge fee \t\t: RM " << setprecision(2) << price << endl;
64     cout << "Membership discount \t: RM " << setprecision(2) << discount << endl;
65     cout << "Additional fees \t: RM " << setprecision(2) << price << endl;
66     cout << "Service tax (10%)\t: RM " << setprecision(2) << tax << endl;
67     cout << "Final Total \t\t: RM " << setprecision(2) << final_discount << endl;

```

```

68 cout << "vThank you for booking with us! Enjoy your treatment!" << endl << endl;
69 cout << "For more information, contact us at 019-9843760 or visit our Instagram @EscapeRealitySpa" << endl;
70
71 ofstream myfile;
72 myfile.open ("receipt.txt");
73 myfile << "\t\t\t\t*****\n" << endl;
74 myfile << "\t\t\t\t Escape Reality Spa " << endl;
75 myfile << "\n\t\t\t\t***** " << endl << endl;
76 myfile << "Name : " << name << endl;
77 myfile << "Phone Number : " << hnum << endl << endl;
78 myfile << "Room \t\t\t: " << room_type << endl;
79 myfile << "Treatment you choose\t: " << treatment << endl;
80 myfile << "Booking date \t\t: " << day << "/" << month << "/" << year << endl;
81 myfile << fixed << showpoint;
82 myfile << "Treatment price \t: RM " << setprecision(2) << pricef << endl;
83 myfile << "Lounge fee \t\t: RM " << setprecision(2) << pricee << endl;
84 myfile << "Additional fees \t: RM " << setprecision(2) << pricea << endl;
85 myfile << "Service tax (10%)\t: RM " << setprecision(2) << tax << endl;
86 myfile << "Final Total \t\t: RM " << setprecision(2) << final_discount << endl << endl;
87 myfile << "vThank you for booking with us! Enjoy your treatment!" << endl;
88 myfile << "For more information, contact us at 019-9843760 or visit our Instagram @EscapeRealitySpa" << endl;
89
90 myfile.close();
91
92 }
93
94
95
96 int main()
97 {
98     system("color 6");
99     float pricef;
100     double total = 0;
101     double room_price, pricee, pricea, discount, final_total, final_discount;
102     string membership, hnum, name, room_type;
103     int cust_id, day, month, year, room;

```

```

1004
1005 start:
1006 cout << "\n\t\t\t\t*****";
1007 cout << "\n\t\t\t\t SPA BOOKING SERVICE ";
1008 cout << "\n\t\t\t\t * MAIN MENU *";
1009 cout << "\n\t\t\t\t*****";
1010
1011 cout << "\n\nEnter the session date: "<< endl;
1012 cin >> day >> month >> year;
1013 cout << day << "/" << month << "/" << year << endl;
1014
1015 system("cls");
1016
1017 cin.ignore();
1018 cout << "\nEnter your name" << endl;
1019 getline(cin,name);
1020
1021 cout << "\nEnter your phone number" << endl;
1022 cin >> hpnum;
1023
1024 system("cls");
1025
1026 cout << "\n\nAVAILABLE TREATMENT " << endl;
1027 cout << "1 - Facial" << endl;
1028 cout << "2 - Manicure" << endl;
1029 cout << "3 - Pedicure" << endl;
1030 cout << "4 - Hair cut" << endl;
1031 cout << "5 - Hair wash" << endl;
1032
1033
1034 int code;
1035 cout << "\nPlease choose treatment that you want : ";
1036 cin >> code;
1037
1038 string treatment ;
1039 switch (code)

```

```

140 {
141     case 1:
142         priceT = 200;
143         treatment = "Facial";
144         break;
145     case 2:
146         priceT = 100;
147         treatment = "Manicure";
148         break;
149     case 3:
150         priceT = 100;
151         treatment = "Pedicure";
152         break;
153     case 4:
154         priceT = 50;
155         treatment = "Hair cut";
156         break;
157     case 5:
158         priceT = 60;
159         treatment = "Hair wash";
160 }
161
162 if (code == 1 || code == 2 || code == 3 || code == 4 || code == 5)
163 {
164     cout << "\nYou have selected the treatment that you want : " << treatment << endl;
165 }
166 else
167 {
168     cout << "ERROR!! The code is invalid." << endl;
169     system("pause");
170     system("cls");
171     goto start;
172 }
173
174 cout << "\n\nChoose your preferred comfort" << endl;
175

```

```

176 cout << "\nPress '1' for Standard Lounge" << endl;
177 cout << "Press '2' for Private Lounge\n" << endl;
178 cin >> room;
179
180 if (room == 1)
181 {
182     room_type = "Standard Lounge";
183     {priceR = 0;}
184 }
185 else if (room == 2)
186 {
187     room_type = "Private Lounge";
188     {priceR += 50;}
189 }
190 else
191 {
192     goto start;
193 }
194
195 system("cls");
196
197 string add, message;
198 cout << "\nDo you want an addition of any other services? (yes or no) : " << endl;
199 cin >> add;
200
201 if (add == "yes" || add == "Yes")
202 {
203     cout << "\nWould you like a massage session? (yes/no) : " << endl;
204     cin >> message;
205
206     if (message == "yes" || message == "Yes")
207     {
208         priceM += 100;
209         cout << "\nThe price for 1 massage session is RM "<< priceM << "." << endl;
210     }
211     else if (message == "no" || message == "No")

```

```

212     {
213         priceM = 0;
214     }
215     else
216     {
217         goto start;
218     }
219 }
220
221 else if ( add == "no" || add == "No")
222 {
223     priceM = 0;
224     cout << "There's no additional service added." << endl;
225 }
226
227 else
228 {
229     goto start;
230 }
231
232
233 cout << "\nDo you have our membership? (yes/no) : " << endl;
234 cin >> membership;
235
236 myPayment(room_price, total, priceR, priceT, priceM, discount, final_total, final_discount, name, hnum, membership, room_type, treatment, cust_id, day, month, year);
237
238
239 return 0;
240 }

```

DETAILS OF INPUT AND OUTPUT

```
*****
SPA BOOKING SERVICE
* MAIN MENU *
*****

Enter the session date:
28
07
2022_
```

```
Enter your name
SARAH

Enter your phone number
01123456789_
```

```
AVAILABLE TREATMENT

1 - Facial
2 - Manicure
3 - Pedicure
4 - Hair cut
5 - Hair wash

Please choose treatment that you want : 1

You have selected the treatment that you want : Facial

Choose your preferred comfort

Press '1' for Standard Lounge
Press '2' for Private Lounge

2
```


Do you want an addition of any other services? (yes or no) :
yes

Would you like a massage session? (yes/no) :
yes

The price for 1 massage session is RM 100.

Do you have our membership? (yes/no) :
yes

Please enter your member ID : 2022770417

We will give you 20% discount
Press any key to continue . . . █

Escape Reality Spa

Name : SARAH
Phone Number : 01123456789

Room	: Private Lounge
Treatment you choose	: Facial
Booking date	: 28/7/2022
Treatment price	: RM 200.00
Lounge fee	: RM 50.00
Membership discount	: RM 77.00
Additional fees	: RM 100.00
Service tax (10%)	: RM 35.00
Final Total	: RM 308.00

Thank you for booking with us! Enjoy your treatment!

For more information, contact us at 019-9843760 or visit our instagram @EscapeRealitySpa

Process exited after 34.98 seconds with return value 0
Press any key to continue . . . █

SCREEN LAYOUT

1. Output

```
*****
SPA BOOKING SERVICE
* MAIN MENU *
*****

Enter the session date:
28
07
2022_
```

Sample of codes:

```
96 int main()
97 {
98     system("color 6");
99     float priceT;
100     double total = 0;
101     double room_price, priceM, priceR, discount, final_total, final_discount;
102     string membership, hpnum, name, room_type;
103     int cust_id, day, month, year, room;
104
105     start:
106     cout << "\n\t\t\t\t*****";
107     cout << "\n\t\t\t\t SPA BOOKING SERVICE ";
108     cout << "\n\t\t\t\t * MAIN MENU *";
109     cout << "\n\t\t\t\t*****";
110
111     cout << "\n\nEnter the session date: "<< endl;
112     cin >> day >> month >> year;
113     cout << day << "/" << month << "/" << year << endl;
114
115     system("cls");
```

2. Output

```
Enter your name
SARAH

Enter your phone number
01123456789_
```

Sample of codes:

```
116     cin.ignore();
117     cout << "\nEnter your name" << endl;
118     getline(cin,name);
119
120
121     cout << "\nEnter your phone number" << endl;
122     cin >> hpnum;
123
124     system("cls");
```

3. Output

```
AVAILABLE TREATMENT

1 - Facial
2 - Manicure
3 - Pedicure
4 - Hair cut
5 - Hair wash

Please choose treatment that you want : 1

You have selected the treatment that you want : Facial

Choose your preferred comfort

Press '1' for Standard Lounge
Press '2' for Private Lounge

2
```

Sample of codes:

```
125 cout << "\n\nAVAILABLE TREATMENT " << endl;
126 cout << "\n1 - Facial" << endl;
127 cout << "\n2 - Manicure" << endl;
128 cout << "\n3 - Pedicure" << endl;
129 cout << "\n4 - Hair cut" << endl;
130 cout << "\n5 - Hair wash" << endl;
131
132
133
134 int code;
135 cout << "\nPlease choose treatment that you want : ";
136 cin >> code;
137
138 string treatment ;
139 switch (code)
140 {
141     case 1:
142         priceT = 200;
143         treatment = "Facial";
144         break;
145     case 2:
146         priceT = 100;
147         treatment = "Manicure";
148         break;
149     case 3:
150         priceT = 100;
151         treatment = "Pedicure";
152         break;
153     case 4:
154         priceT = 50;
155         treatment = "Hair cut";
156         break;
157     case 5:
158         priceT = 60;
159         treatment = "Hair wash";
160 }
161
162 if (code == 1 || code == 2 || code == 3 || code == 4 || code == 5)
163 {
164     cout << "\nYou have selected the treatment that you want : " << treatment << endl;
165 }
166 else
167 {
168     cout << "ERROR!! The code is invalid." << endl;
169     system("pause");
170     system("cls");
171     goto start;
172 }
```

```

172     }
173
174
175     cout << "\n\nChoose your preferred comfort" << endl;
176     cout << "\nPress '1' for Standard Lounge" << endl;
177     cout << "Press '2' for Private Lounge\n" << endl;
178     cin >> room;
179
180     if (room == 1)
181     {
182         room_type = "Standard Lounge";
183         {priceR = 0;}
184     }
185     else if (room == 2)
186     {
187         room_type = "Private Lounge";
188         {priceR += 50;}
189     }
190     else
191     {
192         goto start;
193     }
194
195     system("cls");

```

4. Output

```
Do you want an addition of any other services? (yes or no) :  
yes  
  
Would you like a massage session? (yes/no) :  
yes  
  
The price for 1 massage session is RM 100.  
  
Do you have our membership? (yes/no) :  
yes  
  
Please enter your member ID : 2022770417  
  
We will give you 20% discount  
Press any key to continue . . .
```

Sample of codes:

```
196     string add, message;  
197     cout << "\nDo you want an addition of any other services? (yes or no) : " << endl;  
198     cin >> add;  
199  
200  
201     if (add == "yes" || add == "Yes")  
202     {  
203         cout << "\nWould you like a massage session? (yes/no) : " << endl;  
204         cin >> message;  
205  
206         if (message == "yes" || message == "Yes")  
207         {  
208             priceM += 100;  
209             cout << "\nThe price for 1 massage session is RM "<< priceM << "." << endl;  
210         }  
211         else if (message == "no" || message == "No")  
212         {  
213             priceM = 0;  
214         }  
215         else  
216         {  
217             goto start;  
218         }  
219     }  
220  
221     else if (add == "no" || add == "No")  
222     {  
223         priceM = 0;  
224         cout << "There's no additional service added." << endl;  
225     }  
226     else  
227     {  
228         goto start;  
229     }  
230  
231     cout << "\nDo you have our membership? (yes/no) : " << endl;  
232     cin >> membership;  
233  
234     myPayment(room_price, total, priceR, priceT, priceM, discount, final_total, final_discount, name, hpnum, membership, room_type, treatment, cust_id, day, month, year);  
235  
236     return 0;  
237  
238  
239  
240
```

```

22
23
24     if (membership == "yes" || membership == "Yes")
25     {
26         cout << "\nPlease enter your member ID : ";
27         cin >> cust_id;
28
29         cout << "\nWe will give you 20% discount " << endl;
30
31         discount = (final_total*20) / 100;
32         final_discount = final_total - discount;
33     }
34
35     else if (membership == "no" || membership == "No")
36     {
37         cout << "The price is still the same." << endl;
38         discount = 0 ;
39         final_discount = final_total - discount;
40     }
41
42     else
43     {
44         goto start;
45     }
46

```

5. Output

```

*****
                        Escape Reality Spa
*****

Name : SARAH
Phone Number : 01123456789

Room          : Private Lounge
Treatment you choose : Facial
Booking date   : 28/7/2022
Treatment price : RM 200.00
Lounge fee     : RM 50.00
Membership discount : RM 77.00
Additional fees : RM 100.00
Service tax (10%) : RM 35.00
Final Total    : RM 308.00

Thank you for booking with us! Enjoy your treatment!

For more information, contact us at 019-9843760 or visit our instagram @EscapeRealitySpa

-----
Process exited after 34.98 seconds with return value 0
Press any key to continue . . .

```

Sample of codes:

```

47     system("pause");
48     system("cls");
49
50
51     system("color B");
52     start:
53     cout << "\t\t\t\t*****\n" << endl;
54     cout << "\t\t\t\t\t Escape Reality Spa " << endl;
55     cout << "\n\t\t\t\t*****" << endl << endl;
56     cout << "Name : " << name << endl;
57     cout << "Phone Number : " << hnum << endl << endl;
58     cout << "Room \t\t\t: " << room_type << endl;
59     cout << "Treatment you choose\t: " << treatment << endl;
60     cout << "Booking date \t\t: " << day << "/" << month << "/" << year << endl;
61     cout << fixed << showpoint;
62     cout << "Treatment price \t: RM " << setprecision(2) << priceT << endl;
63     cout << "Lounge fee \t\t: RM " << setprecision(2) << priceR << endl;
64     cout << "Membership discount \t: RM " << setprecision(2) << discount << endl;
65     cout << "Additional fees \t: RM " << setprecision(2) << priceM << endl;
66     cout << "Service tax (10%\t: RM " << setprecision(2) << tax << endl;
67     cout << "Final Total \t\t: RM " << setprecision(2) << final_discount << endl;
68     cout << "\nThank you for booking with us! Enjoy your treatment!" << endl << endl;
69     cout << "For more information, contact us at 019-9843760 or visit our instagram @EscapeRealitySpa" << endl;
70
71     fstream myfile;
72     myfile.open("receipt.txt");
73     myfile << "\t\t\t\t*****\n" << endl;
74
75     myfile << "\t\t\t\t\t Escape Reality Spa " << endl;
76     myfile << "\n\t\t\t\t*****" << endl << endl;
77     myfile << "Name : " << name << endl;
78     myfile << "Phone Number : " << hnum << endl << endl;
79     myfile << "Room \t\t\t: " << room_type << endl;
80     myfile << "Treatment you choose\t: " << treatment << endl;
81     myfile << "Booking date \t\t: " << day << "/" << month << "/" << year << endl;
82     myfile << fixed << showpoint;
83     myfile << "Treatment price \t: RM " << setprecision(2) << priceT << endl;
84     myfile << "Lounge fee \t\t: RM " << setprecision(2) << priceR << endl;
85     myfile << "Additional fees \t: RM " << setprecision(2) << priceM << endl;
86     myfile << "Service tax (10%\t: RM " << setprecision(2) << tax << endl;
87     myfile << "Final Total \t\t: RM " << setprecision(2) << final_discount << endl << endl;
88     myfile << "\nThank you for booking with us! Enjoy your treatment!" << endl;
89     myfile << "For more information, contact us at 019-9843760 or visit our instagram @EscapeRealitySpa" << endl;
90
91     myfile.close();
92
93 }
94

```


SUMMARY

The conclusion of all the based from the coding and creating the Spa is about the Paradigm of Algorithm used in this project were using functions to simplify a “chunk” of code that we can use over and over again, rather than writing it out multiple times. Functions enable programmers to break down or decompose a problem into smaller chunks, each of which performs a particular task. For example, myPayment method was used to calculate the total of price cost and filter which membership type of user choice in this program. Besides, this program had fstream library to open a file for writing. ifstream object is used to open a file for reading purpose only. Following is the standard syntax for open(“receipt.txt”) function, which is a member access and write the text file.