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	Marks	
	Available	Actual
Part I	---------	---------
Part II	---------	---------
Total Grade	---------	---------

Lecturer	Name: ---
	Signature: --
	Date: --

Airlines Reservation System Database functions

```c
1    #include <stdio.h>
2    #include <string.h>
3    #include <math.h>
4    #include <stdlib.h>
5    char null;
6    struct user_info
7    {
8        int passport_no;
9        char name[50];
10       int flight_no;
11       int seat_no;
12   } u[50], temp1;
13
14   struct flight_info
15   {
16       int flight_no;
17       char departure[50];
18       char destination[50];
19       int ticket_price;
20   } f[50],temp2;
```

These are the structs are used to store data.

.

```c
22   int scan_user(int n)
23   {
24       int i = n;
25       char choice[4];
26       do
27       {
28           printf("Enter the traveller's passport's number: ");
29           scanf("%d",&u[i].passport_no);
30           printf("Enter the traveller's name:");
31           scanf("%c",&null);
32           gets(u[i].name);
33           printf("Enter the traveller's flight number:");
34           scanf("%d",&u[i].flight_no);
35           printf("Enter the traveller's seat number:");
36           scanf("%d",&u[i].seat_no);
37           printf("Do you want to add another traveller?");
38           scanf("%s",choice);
39           i++;
40       }
41       while(choice[0] == 'y' || choice[0] == 'Y' || choice == "yes" || choice == "Yes");
42       return i;
43   }
```
scan_user function used to scan new input data from the program.

```
44      void store_user(int start, int n)
45    {
46          FILE *fl;
47          if (start == 0)
48            fl = fopen("user_info.txt","w");
49          else fl = fopen("user_info.txt","a");
50          if(fl == NULL)
51          {
52              printf("can't open or create user file");
53          }
54          else
55          {
56              int i;
57              for(i = start ; i < n ; i++)
58              {
59                  fprintf(fl,"\n%d\n%s\n%d\n%d",u[i].passport_no, u[i].name, u[i].flight_no, u[i].seat_no);
60              }
61          }
62          fclose(fl);
63    }
```

store_user function is used to save the data from the struct in user_info file.

```
64      int read_user()
65    {
66          FILE *fl;
67          fl = fopen("user_info.txt","r");
68          if(fl == NULL)
69          {
70              printf("can't open or create user file");
71          }
72          else
73          {
74              int i = 0;
75              while(!feof(fl))
76              {
77                  fscanf(fl,"%d %[^\n] %d %d", &u[i].passport_no, u[i].name, &u[i].flight_no, &u[i].seat_no);
78                  i++;
79              }
80              fclose(fl);
81              return i;
82          }
83    }
```

read_user function is used to export the data from the file and save it in user_info struct.

```
84      void print_user(int n)
85    {
86          int i;
87          for(i = 0 ; i < n ; i++)
88          {
89              printf("\n\ntraveller %d:\n\t",i+1);
90              printf("passport number: %d\n\t",u[i].passport_no);
91              printf("name: ");
92              puts(u[i].name);
93              printf("\tflight number: %d\n\t",u[i].flight_no);
94              printf("seat number: %d\n",u[i].seat_no);
95          }
96          printf("\n\n");
97    }
```

print_user function is used to print the data stored in the struct.

```
98     void sort_by_name(int n)
99   ⊟ {
100        int i, j;
101        for(i = 0 ; i < n-1 ; i++)
102   ⊟    {
103            for(j = i+1 ; j < n ; j++)
104   ⊟        {
105                if(strcmp(u[i].name,u[j].name) > 0)
106   ⊟            {
107                    temp1 = u[i];
108                    u[i] = u[j];
109                    u[j] = temp1;
110                }
111            }
112
113        }
114   }
```

sort_by_name function is used to sort the user_info struct according to the user name.

```
115    int read_flight()
116  ⊟ {
117       FILE *f1;
118       int k = 0;
119       f1 = fopen("flight_info.txt","r");
120       if(f1 == NULL)
121  ⊟    {
122           printf("can't open or create user file");
123       }
124       else
125  ⊟    {
126           while(!feof(f1))
127  ⊟        {
128               fscanf(f1,"%d %[^\n] %[^\n] %d", &f[k].flight_no, f[k].departure, f[k].destination, &f[k].ticket_price);
129               k++;
130           }
131           fclose(f1);
132           return k;
133       }
134   }
```

read_flight function is used to export the data from flight_info file and save it in flight_info struct.

```
135     void print_flight(int n)
136     {
137         int i;
138         for(i = 0 ; i < n ; i++)
139         {
140             printf("flight %d:\n\t",i+1);
141             printf("flight number: %d\n\t",f[i].flight_no);
142             printf("departure: ");
143             puts(f[i].departure);
144             printf("\tdestination: ");
145             puts(f[i].destination);
146             printf("\tticket price: %d\n\n\n",f[i].ticket_price);
147         }
148     }
```

print_flight function is used to print the flights data from the flight_info struct.

```
149     int scan_flight(int k)
150     {
151         char choice[4];
152         do
153         {
154             printf("new flight's information:\nEnter the flight's number:");
155             scanf("%d",&f[k].flight_no);
156             printf("Enter the flight's departure:");
157             scanf("%c",&null);
158             gets(f[k].departure);
159             printf("Enter the flight's destination:");
160             gets(f[k].destination);
161             printf("Enter the flight's ticket price:");
162             scanf("%d",&f[k].ticket_price);
163             printf("Do you want to enter another flight information? ");
164             k++;
165             scanf("%s",choice);
166         }
167         while(choice == "yes" || choice[0] == 'y' || choice == "Yes" || choice[0] == 'Y');
168         return(k);
169     }
```

scan_flight function is used to scan the new flight information from the user and store it in the flight_info struct.

```
170     void store_flight(int n, int k)
171   □ {
172         FILE *fl;
173         if(n == 0)
174             fl = fopen("flight_info.txt","w");
175         else fl = fopen("flight_info.txt","a");
176         if(fl == NULL)
177   □     {
178             printf("can't open or create user file");
179         }
180         else
181   □     {
182             int i;
183             for(i = n; i < k ; i++)
184                 fprintf(fl,"\n%d\n%s\n%s\n%d",f[i].flight_no,f[i].departure,f[i].destination,f[i].ticket_price);
185         }
186         fclose(fl);
187   └ }
```

store_flight function is used to store the flight information taken from the flight_info struct in the flight_info file.

```
188     void sort_by_flight_no(int n)
189   □ {
190         int i, j;
191         for(i = 0 ; i < n-1 ; i++)
192   □     {
193             for(j = 0 ; j < n-1-i ; j++)
194   □         {
195                 if(f[j+1].flight_no < f[j].flight_no)
196   □             {
197                     temp2 = f[j];
198                     f[j] = f[j+1];
199                     f[j+1] = temp2;
200                 }
201             }
202         }
203   └ }
```

sort_by_flight_no function is used to sort the flight information in the struct by the flight number.

```c
204     void search_by_flight_number(int n)
205     {
206         int i,j,a,found;
207         printf("\nEnter number to search: ");
208         scanf("%d",&a);
209         int flag=0;
210         for(i=0; i<n; i++)
211         {
212             if(a==f[i].flight_no)
213             {
214                 flag=1;
215                 found=i;
216                 break;
217             }
218         }
219         if(flag == 1)
220         {
221             printf("Flight number is found\n\n");
222             printf("flight %d:\n\t",found+1);
223             printf("flight number: %d\n\t",f[found].flight_no);
224             printf("departure: ");
225             puts(f[found].departure);
226             printf("\tdestination: ");
227             puts(f[found].destination);
228             printf("\tticket price: %d\n\n\n",f[found].ticket_price);
229         }
230         else
231         {
232             printf("Not found\n\n");
233         }
234     }
```

search_by_flight_number function is used to search for flight data, the user insert its flight number and it prints the flights information if found.

```
234   }
235     void sum_and_average_of_tickets(int n)
236   {
237         int i, sum = 0;
238         float avg = 0;
239         for(i = 0 ; i < n ; i++)
240         {
241             sum += f[i].ticket_price;
242         }
243         avg = (sum*1.0)/n;
244         printf("Sum = %d\nAverage = %f\n\n", sum, avg);
245   }
```

sum_and_average_of_tickets function is used to calculate the sum and the average of the ticket prices and print them.