```c
#include <stdio.h>      // standard input output library
#include <string.h>     // string library functions to work with strings
#include <time.h>       // library functions for manipulating date and time

#define MAX_CAR 10

// car structure for storing cars details
typedef struct car{
    char brand[50];
    char model[50];
    int year;
    int rate;
    int available;
}car;

// profile structure for storing user details
typedef struct profile
{
    char name[20];
    int id;
    int pasw;
}profile;

// rentData structure for storing rent details
typedef struct rentData
{
    int u_id;
    int carNo;
    int dr,mr,yr; //rent date
    int dret,mret,yret; //return date
    int price;
}rentData;

// cars list
car cars[MAX_CAR]={
    {"HYUNDAI","Veloster",2020,200,1},
    {"SUZUKI","Celerio",2022,250,1},
    {"HONDA","Civic",2019,300,1},
    {"TOYOTA","Avalon",2021,200,1},
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40:     {"FORD","Explorer",2022,250,1},
41:     {"TATA","Safari",2022,200,1},
42:     {"AUDI","Q3",2021,250,1}
43: };
44:
45: profile user;   // global profile structure type variable
    declaration
46: rentData rent;  // global rentData structure type variable
    declaration
47:
48: // function for display car list in output
49: void display(){
50:     int i,check=0;
51:     printf("+------+----------+------------+---------+-------
    --------+\n");
52:     printf("|CarNo.| %-10s|   %-10s|   %-7s| %-15s|\n","BRAND",
    "MODEL","YEAR","RENT PER DAY");
53:     printf("+------+----------+------------+---------+-------
    --------+\n");
54:     for(i=0;i<MAX_CAR;i++){
55:         if(cars[i].available==1){
56:             printf("|  %2d  | %-10s|   %-10s|   %-7d|   %-
    13d|\n",i+1,cars[i].brand,cars[i].model,cars[i].year,
    cars[i].rate);
57:             check=1;
58:         }
59:     }
60:     if(check==0){
61:         printf("Sorry! No car is available\n");
62:     }
63:     printf("+------+----------+------------+---------+-------
    --------+\n");
64:     return;
65: }
66:
67: // function for login for existing user account
68: int login(){
69:     int id;
70:     int pasw;
71:     profile check;
72:     printf("Enter ID: ");
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 73:     scanf("%d",&id);
 74:     printf("Enter password: ");
 75:     scanf("%d",&pasw);
 76:     FILE *f1;
 77:     f1=fopen("User_data.dat","r");
 78:     while (fread(&check,sizeof(profile),1,f1))
 79:     {
 80:         if(check.id==id&&check.pasw==pasw){
 81:             user=check;
 82:             fclose(f1);
 83:             return 1;
 84:         }
 85:     }
 86:     fclose(f1);
 87:     return 0;
 88: }
 89:
 90: // function for creating new account and storing user details in
    file
 91: void signup(){
 92:     FILE *f1,*f2;
 93:     f1 = fopen("User_data.dat","a");
 94:     f2 = fopen("User_data.dat","r");
 95:     profile input,check;
 96:     fflush(stdin);
 97:     printf("Name: ");
 98:     scanf("%[^\n]s",input.name);
 99:     printf("ID: ");
100:     scanf("%d",&input.id);
101:     while (fread(&check,sizeof(profile),1,f2))
102:     {
103:         if(check.id==input.id){
104:             printf("ID already exist\n\n");
105:             fclose(f1);
106:             fclose(f2);
107:             chooesLogin();
108:             return;
109:         }
110:     }
111:     printf("Create password: ");
112:     scanf("%d",&input.pasw);
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113:     fwrite(&input,sizeof(profile),1,f1);
114:     printf("Sign up succesfuly\n\n");
115:     printf("Login\n");
116:     fclose(f1);
117:     fclose(f2);
118:
119:     return;
120: }
121:
122: // function for selecting login or signup
123: void chooesLogin(){
124:     int login_method;
125:     while (1)
126:     {
127:         printf("Chooes your login method:\n");
128:         printf("1.Login\n2.Sign up\n");
129:         scanf("%d",&login_method);
130:         if(login_method==1){
131:             label:
132:             if(login())
133:             {
134:             printf("\n----------------------------------------
    ------------------------------------\n");
135:             printf("Login succesfuly\n");
136:             printf("Name: %s\nID: %d\n",strupr(user.name),
    user.id);
137:             return;
138:             }
139:             else
140:             {
141:                 printf("Wrong password or ID\n\n");
142:                 chooesLogin();
143:                 return;
144:             }
145:         }else if(login_method==2){
146:             signup();
147:             goto label;
148:             return;
149:         }else{
150:             printf("\nWrong choice!! Try again.\n");
151:         }
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152:     }
153:     return;
154: }
155:
156: // function for count total number of days between two dates
157: int daysCount(){
158:     int days=0;
159:
160:     // Calculate time in seconds for each date
161:     struct tm date1 = { .tm_mday = rent.dr, .tm_mon = rent.mr -
     1, .tm_year = rent.yr - 1900 };
162:     struct tm date2 = { .tm_mday = rent.dret, .tm_mon =
     rent.mret - 1, .tm_year = rent.yret - 1900 };
163:     time_t t1 = mktime(&date1);
164:     time_t t2 = mktime(&date2);
165:
166:     // Calculate difference in seconds
167:     double diff = difftime(t2, t1);
168:
169:     // Convert difference to number of days
170:     days = (int) (diff / (24 * 60 * 60));
171:
172:     return days;
173: }
174:
175: // function for deleteing a rentData structure record from file
176: void deleteRecord(int inp_carNo){
177:     rentData temp;
178:     FILE *f1,*f2;
179:     f1=fopen("Rented_car_data.dat","r");
180:     f2=fopen("temp.dat","w");
181:     fclose(f2);
182:     f2=fopen("temp.dat","a");
183:     while (fread(&temp,sizeof(rentData),1,f1))
184:     {
185:         if(temp.carNo!=inp_carNo || temp.u_id!=user.id){
186:             fwrite(&temp,sizeof(rentData),1,f2);
187:         }
188:     }
189:     fclose(f1);
190:     fclose(f2);
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191:
192:     f1=fopen("Rented_car_data.dat","w");
193:     fclose(f1);
194:     f1=fopen("Rented_car_data.dat","a");
195:     f2=fopen("temp.dat","r");
196:     while (fread(&temp,sizeof(rentData),1,f2))
197:     {
198:         fwrite(&temp,sizeof(rentData),1,f1);
199:     }
200:     fclose(f2);
201:     fclose(f1);
202:     f2=fopen("temp.dat","w");
203:     fclose(f2);
204:     return;
205: }
206:
207: // funtion for rent a car
208: void car_rent(){
209:     int sl;
210:     printf("\nWELCOME DEAR CUSTOMER!!! \n");
211:     display();
212:     printf("ENTER THE CarNO. OF THE CAR YOU WANT TO RENT: ");
213:     scanf("%d",&sl);
214:     sl--;
215:     printf("BRAND: %s\nMODEL: %s\nYEAR: %d\nRENT PER DAY: %d/-
     \n\n",cars[sl].brand,cars[sl].model,cars[sl].year,cars[sl].rate);
216:     printf("ENTER DATE ON WHICH YOU WILL TAKE THE CAR(dd mm
     yyyy): ");
217:     scanf("%d%d%d",&rent.dr,&rent.mr,&rent.yr);
218:     printf("ENTER THE DATE ON WHICH YOU WILL RETURN THE CAR(dd
     mm yyyy): ");
219:     scanf("%d%d%d",&rent.dret,&rent.mret,&rent.yret);
220:     rent.u_id=user.id;
221:     rent.carNo=sl;
222:     int days = daysCount();
223:     rent.price=cars[sl].rate*days;
224:     FILE *f1;
225:     f1 = fopen("Rented_car_data.dat","a");
226:     fwrite(&rent,sizeof(rentData),1,f1);
227:     fclose(f1);
228:     printf("Car rented sucessfuly\n\n");
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229:     printf("Details:\n");
230:     printf("-------------------------------------------------------
    ------------------------------------------------------\n");
231:     printf("NAME: %s\nCUSTOMER ID: %d\nCAR RENTED: %s %s\nNUMBER
    OF DAYS: %d\nRENT: %d/-\n",strupr(user.name),user.id,
    cars[sl].brand,cars[sl].model,days,cars[sl].rate*days);
232:     printf("-------------------------------------------------------
    ------------------------------------------------------\n");
233:     printf("WARNING: If any damage is done to the car then you
    are entirely responsible. The car has to be returned in its
    initial condition.\n");
234:     printf("-------------------------------------------------------
    ------------------------------------------------------\n");
235:     FILE *f2;
236:     char fileName[50];
237:     strcat(strcpy(fileName,user.name),"_bill.txt");
238:     f2=fopen(fileName,"w");
239:     fprintf(f2,"Details:\n");
240:     fprintf(f2,"-------------------------------------------------
    ------------------------------------------------------\n");
241:     fprintf(f2,"NAME: %s\nCUSTOMER ID: %d\nCAR RENTED: %s
    %s\nNUMBER OF DAYS: %d\nRENT: %d/-\n",strupr(user.name),user.id,
    cars[sl].brand,cars[sl].model,days,cars[sl].rate*days);
242:     fprintf(f2,"-------------------------------------------------
    ------------------------------------------------------\n");
243:     fprintf(f2,"WARNING: If any damage is done to the car then
    you are entirely responsible. The car has to be returned in its
    initial condition.\n");
244:     fprintf(f2,"-------------------------------------------------
    ------------------------------------------------------\n");
245:     fclose(f2);
246:     return;
247: }
248:
249: // function for return a car
250: void car_return(){
251:     printf("\nWelcome back dear customer \n");
252:     FILE *f1;
253:     f1 = fopen("Rented_car_data.dat","r");
254:     rentData check;
255:     int flag=0;
```

```
256:     while (fread(&check,sizeof(rentData),1,f1))
257:     {
258:         if(check.u_id == user.id)
259:         {
260:             if(flag==0){
261:             printf("Rented cars of yours\n");
262:             }
263:             rent=check;
264:             printf("\n%s %s\nCarno.: %d\nRent date:%02d-%02d-
    %04d\nReturn date:%02d-%02d-%04d\n",cars[rent.carNo].brand,
    cars[rent.carNo].model,rent.carNo,check.dr,check.mr,check.yr,
    check.dret,check.mret,check.yret);
265:             flag=1;
266:         }
267:     }
268:     printf("\nEnter carno. which you want to return\n");
269:     int in_car;
270:     scanf("%d",&in_car);
271:     deleteRecord(in_car);
272:     if(flag==0){
273:         printf("no car found to reaturn\n");
274:     }
275:     printf("thank you!!");
276:     return;
277: }
278:
279: int main(){
280:     printf("\tWELCOME TO OUR CAR RENTAL SYSTEM!!\n");
281:     chooesLogin();
282:     int n1;
283:     label:
284:         printf("\n\aHI!! ARE YOU HERE TO TAKE THE CAR SERVICE OR
    RETURN BACK THE CAR? \n 1.WANT TO RENT A CAR.\n 2.WANT TO RETURN
    THE CAR.\n");
285:         scanf("%d",&n1);
286:         switch(n1)
287:         {
288:             case 1:{car_rent();
289:             break;}
290:             case 2:car_return();
291:             break;
```

```
292:             default:{printf("Wrong choice!! Try again.\n");
293:             goto label;}
294:         }
295:     return 0;
296: }
```