

C Programming

Project: Booking Hotel

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13016235: C Programming

First Semester, 2018

Project Proposal

1. Project developer

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2. Project title

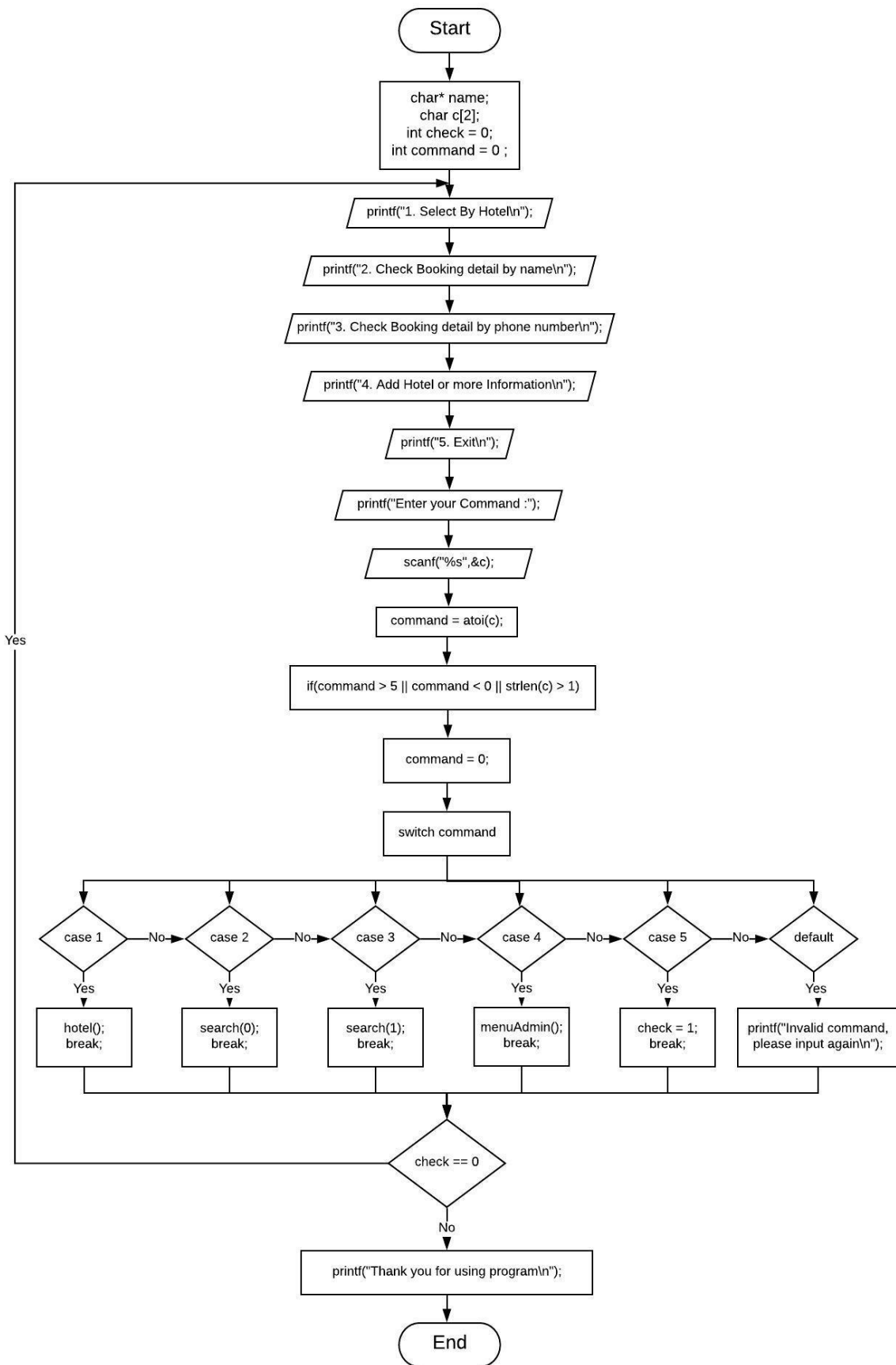
Booking hotel

3. Project description and requirements

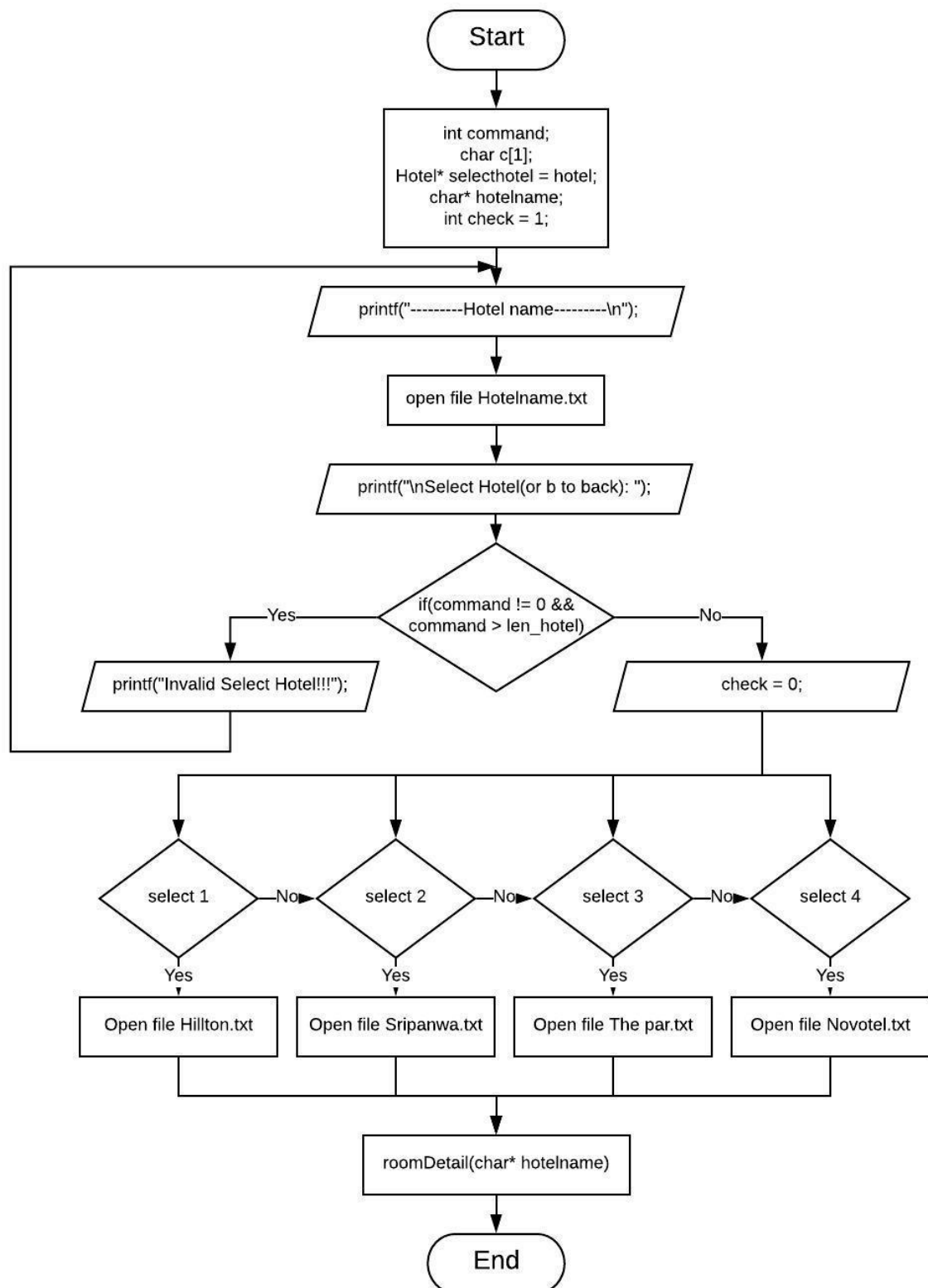
Project description:

Booking hotel is the program that suitable for people who want to stay comfortably. The program will allow user to prompt select hotel, check in and check out date and selects the type of room. The program also shows that number of available rooms. Other than, you can add your own hotel.

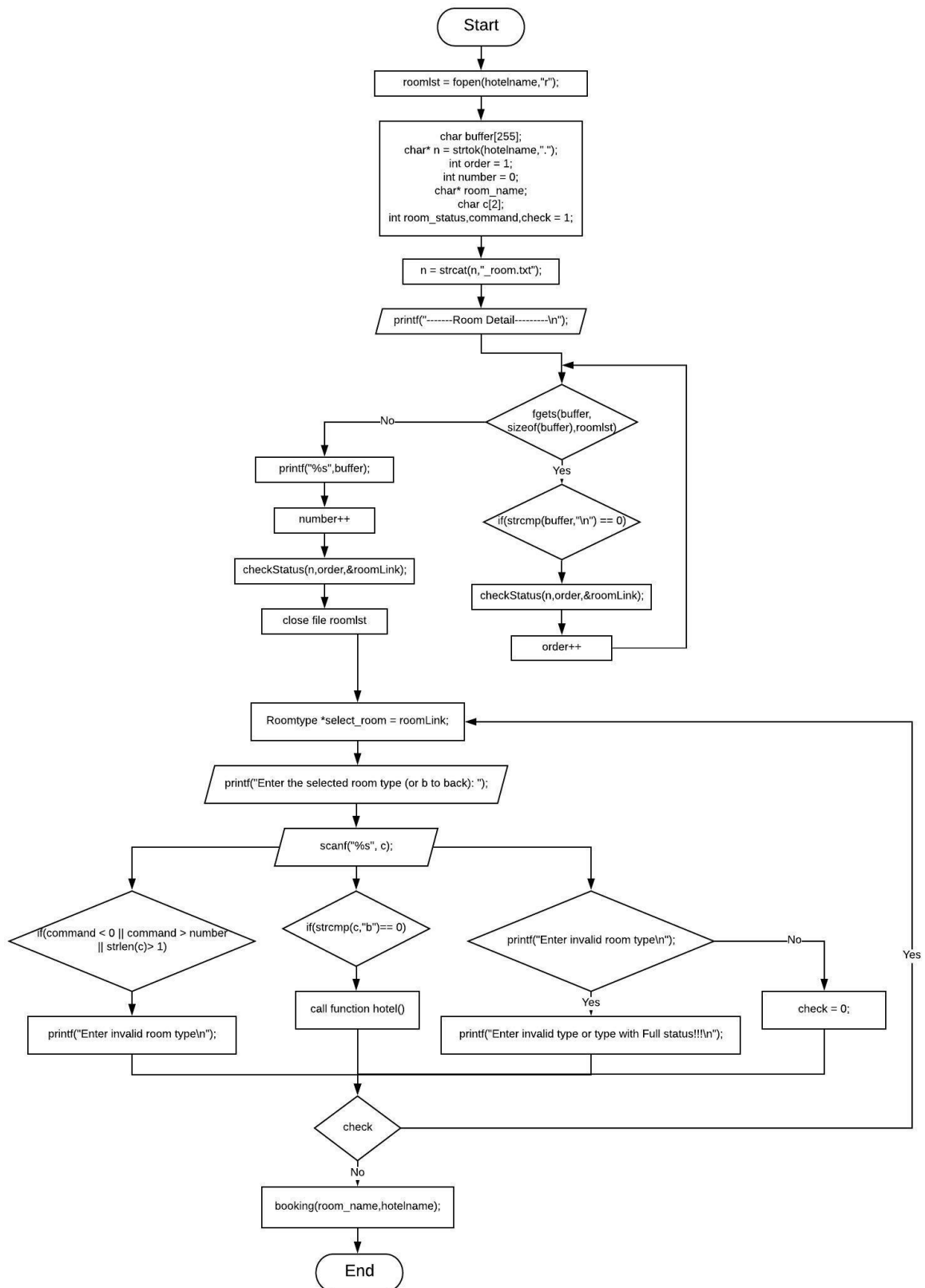
home()



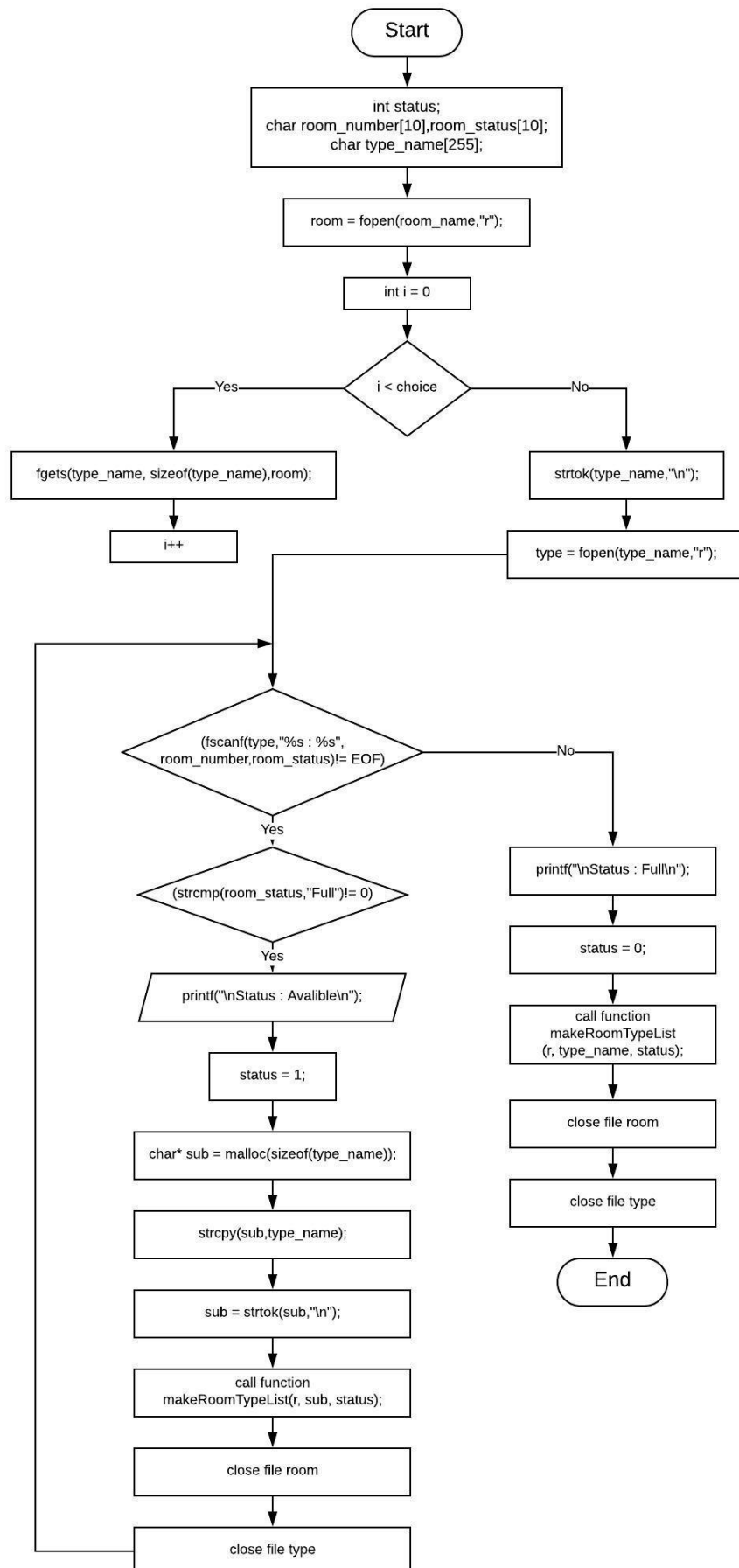
hotel()



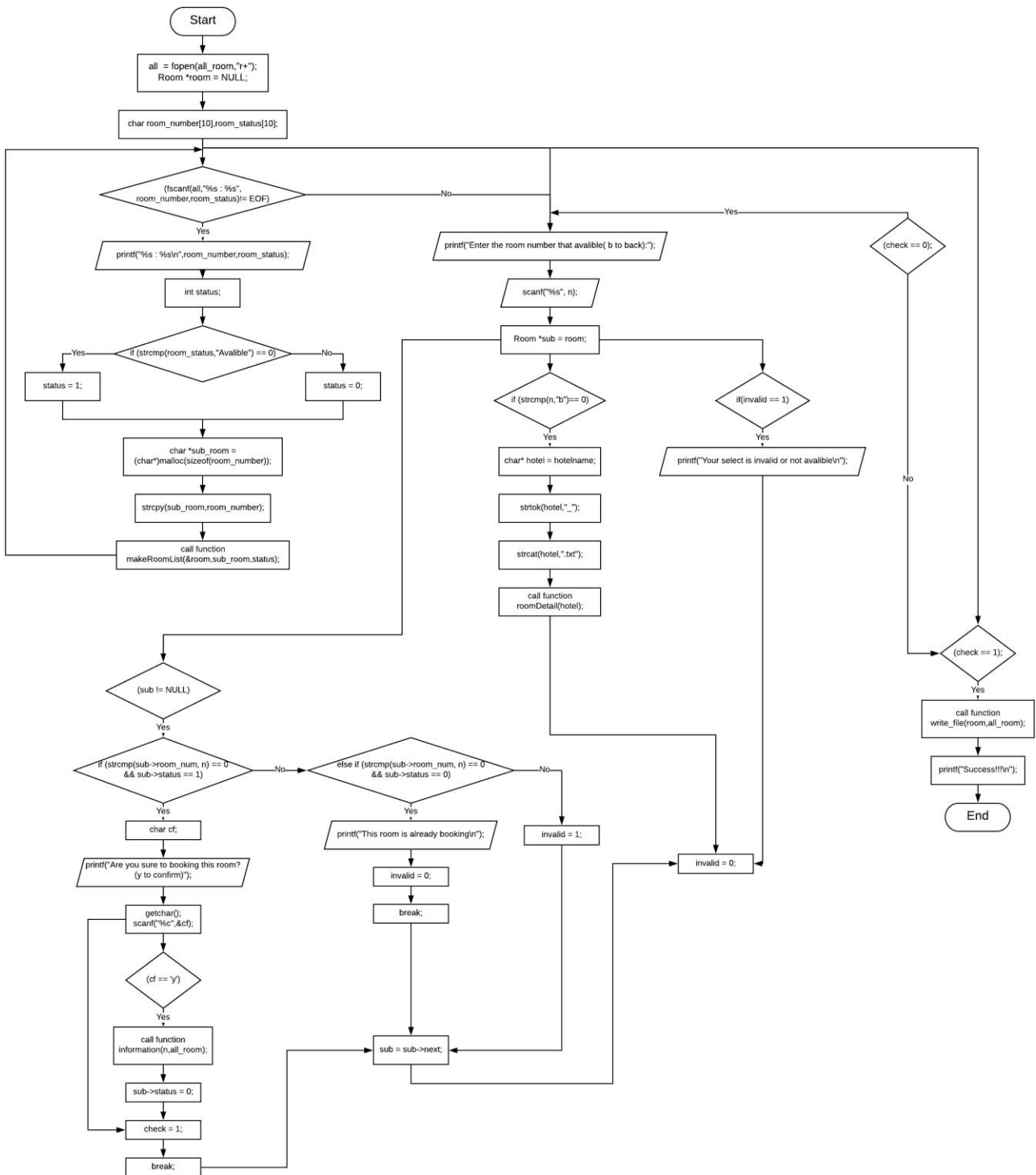
roomDetail()



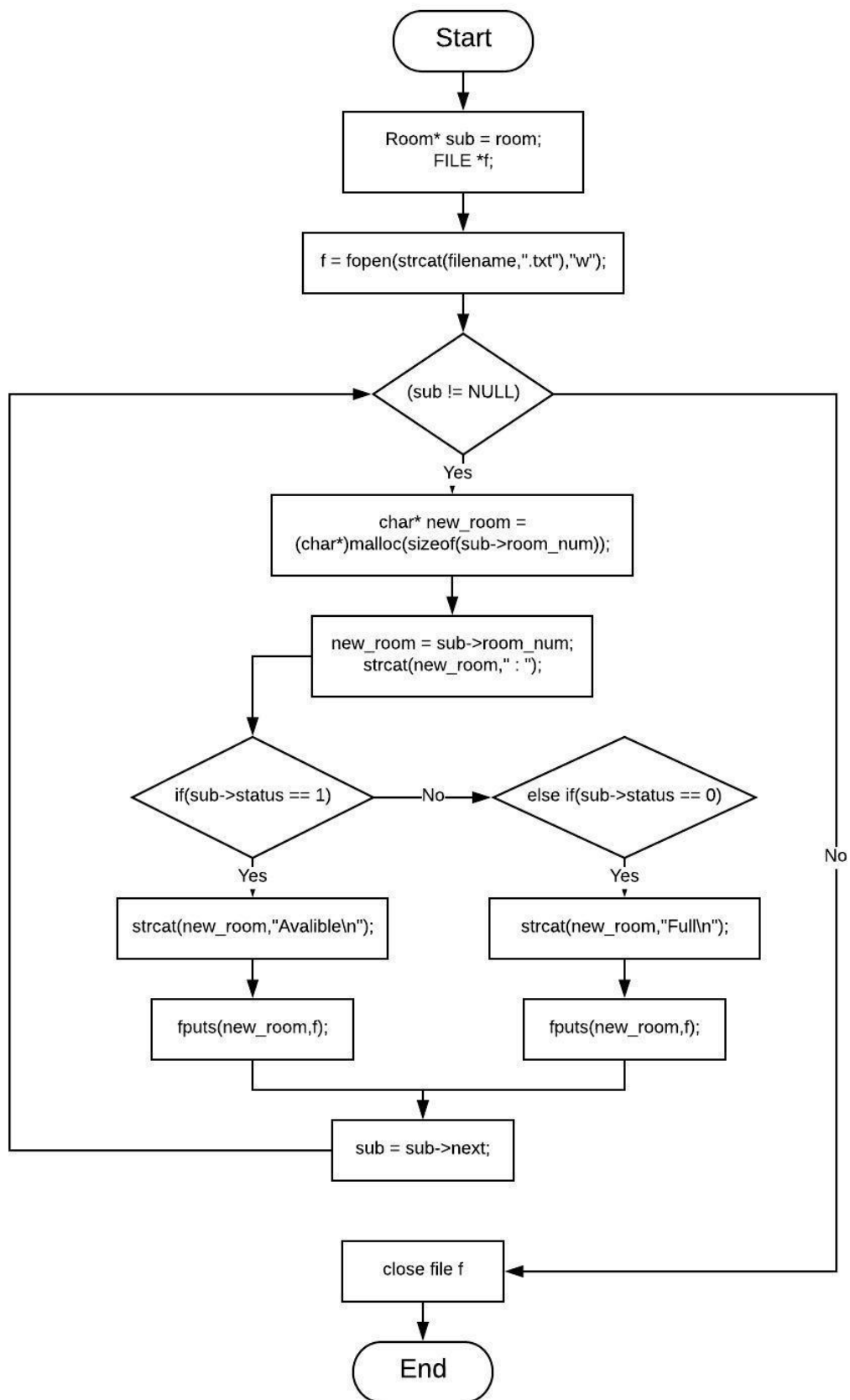
checkStatus()



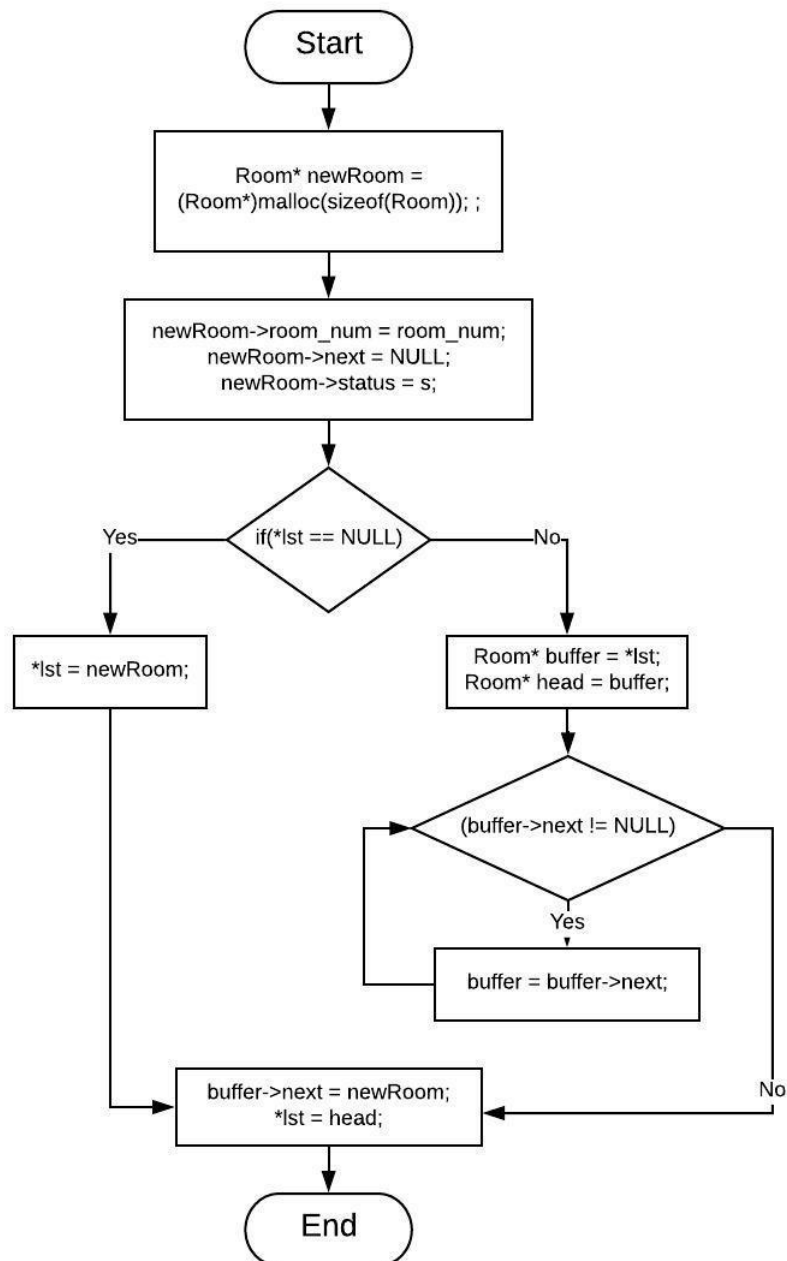
Booking()



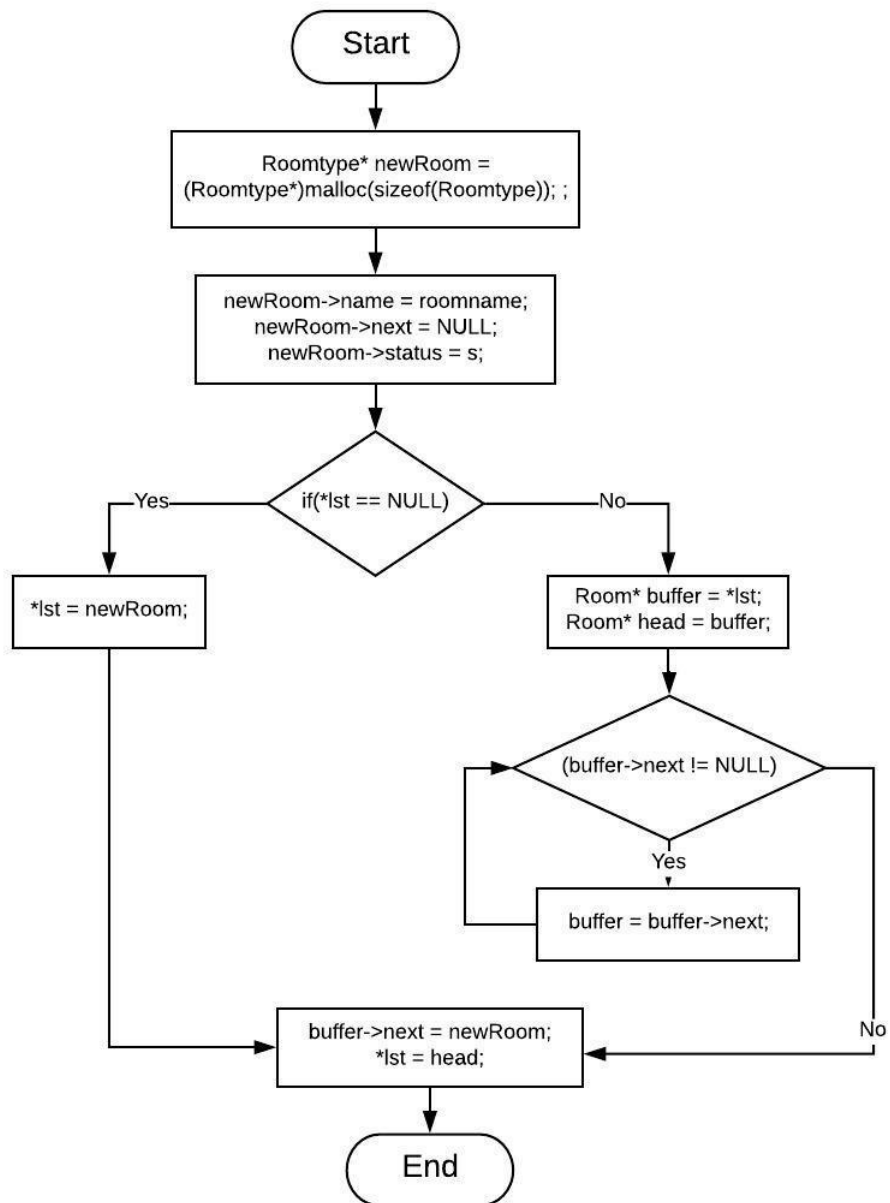
write_file()



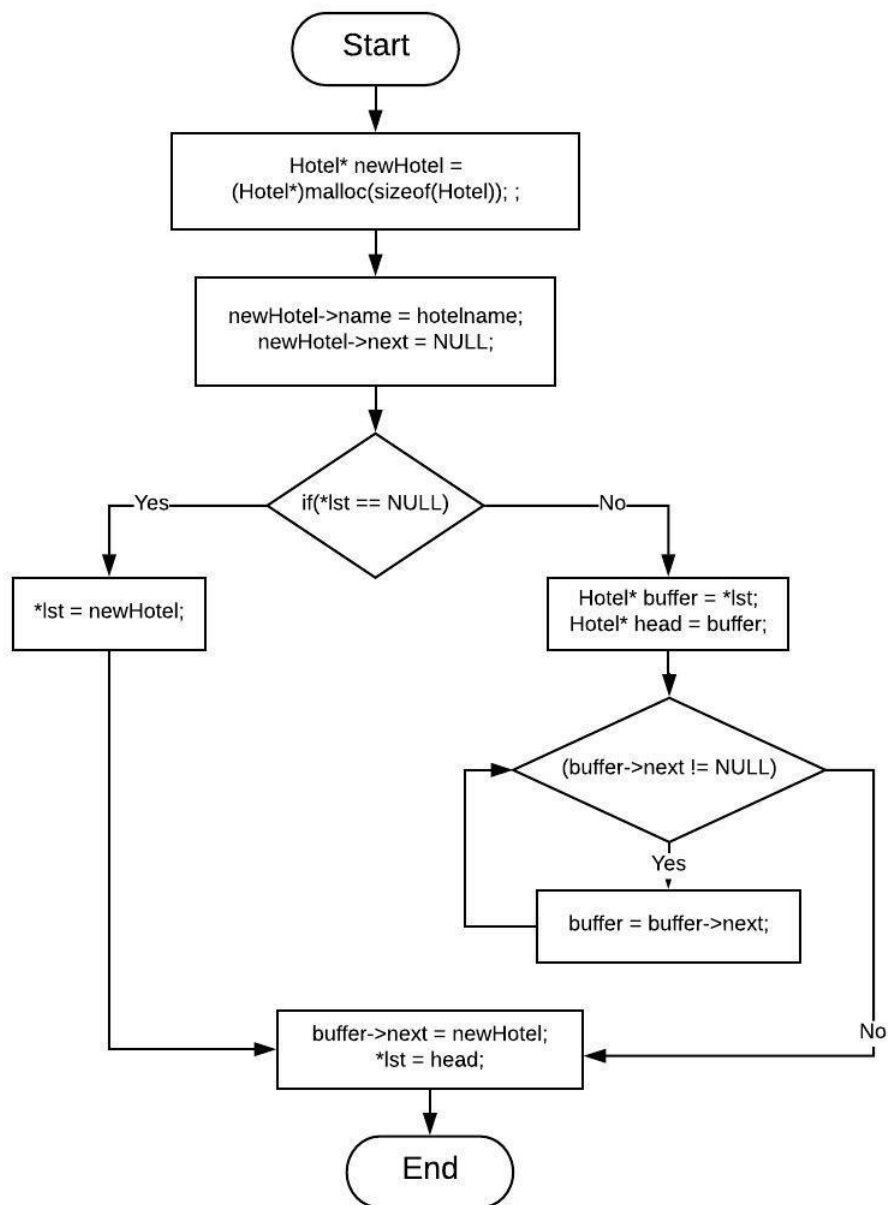
makeRoomList()



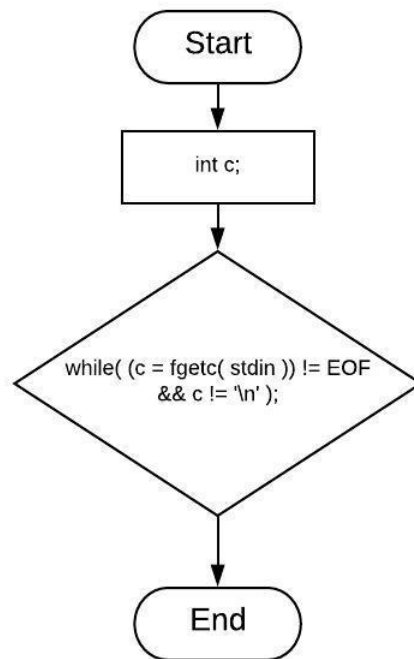
makeRoomTypeList()



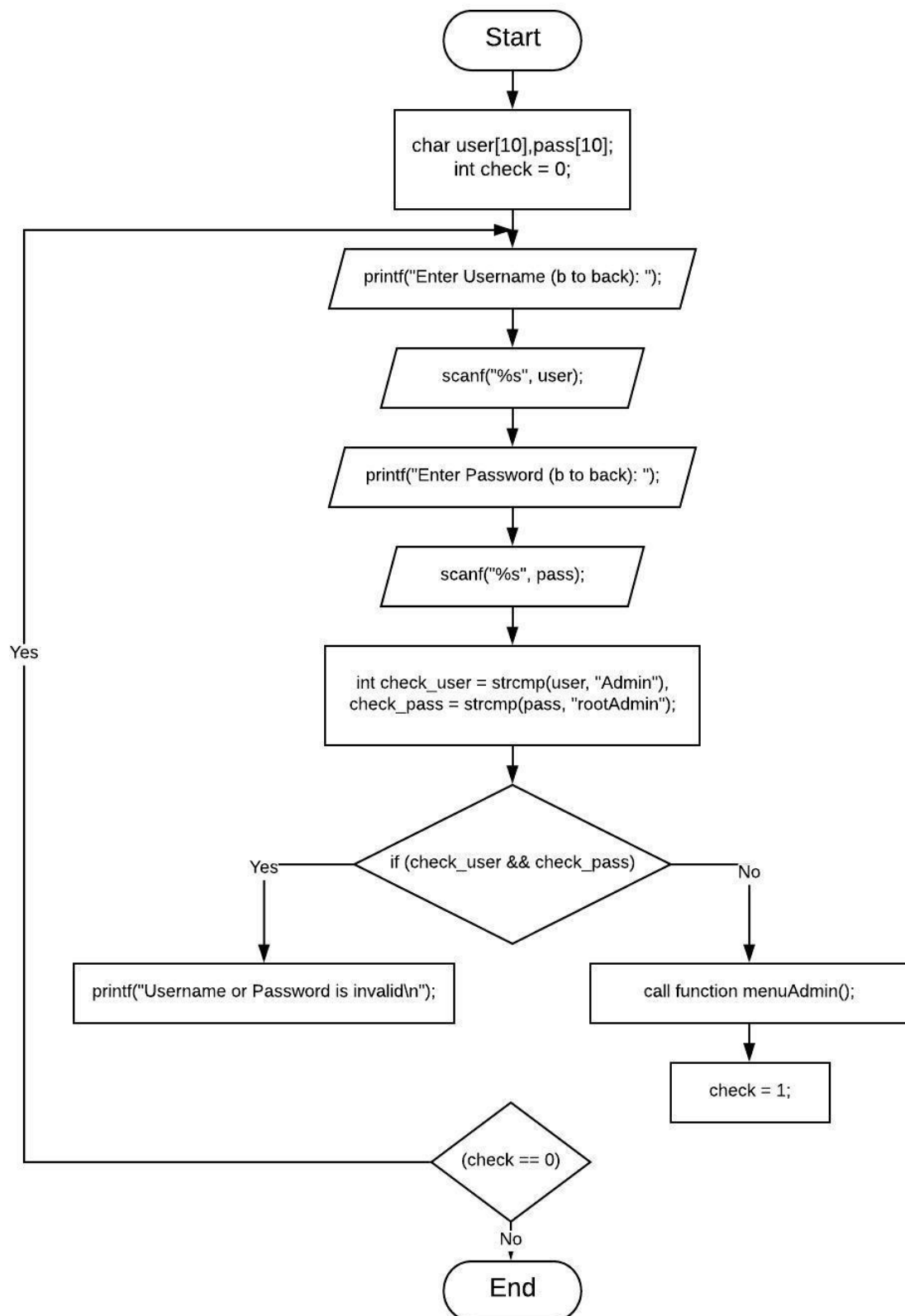
makeHotelList()



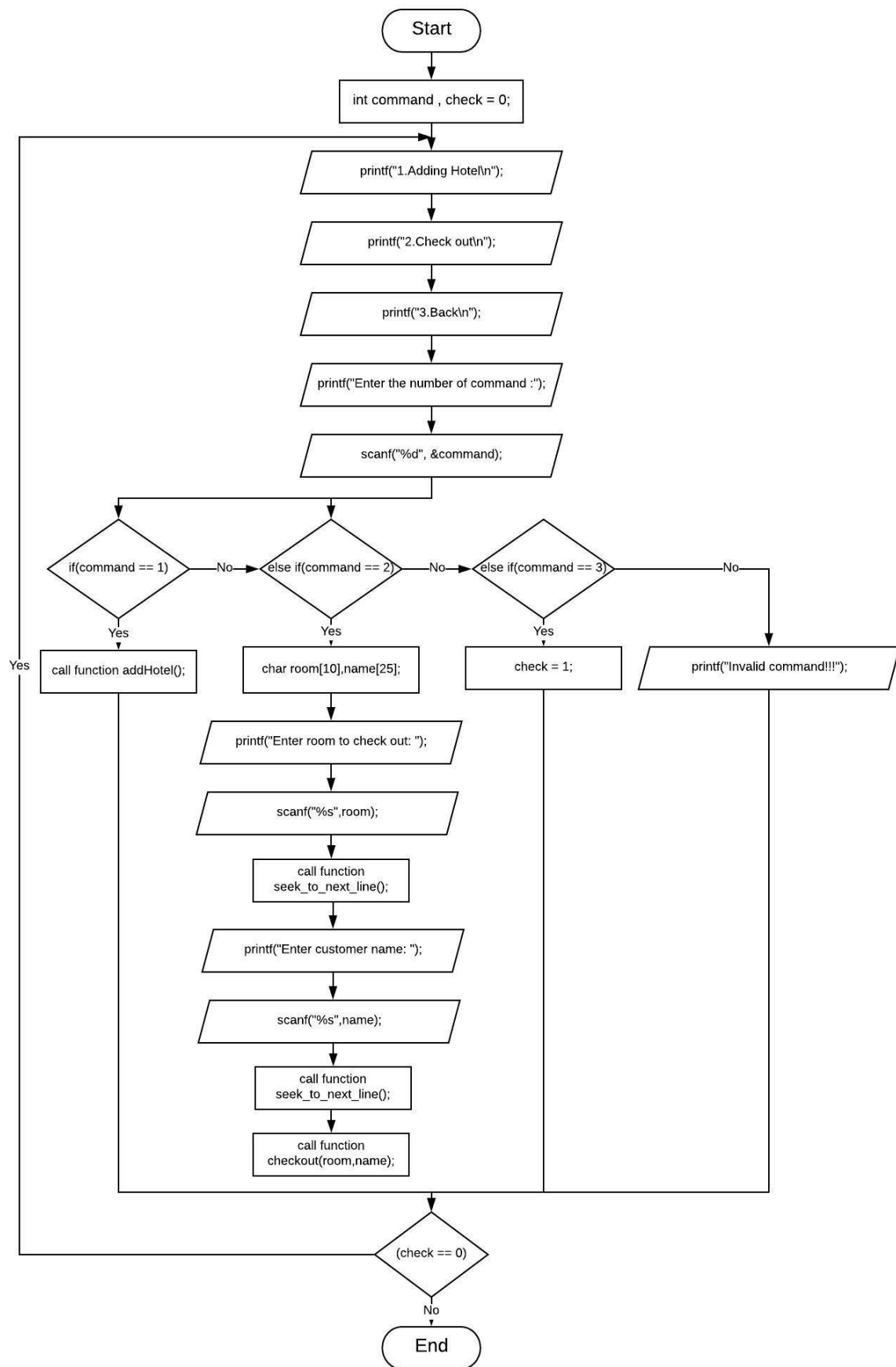
Seek_to_next_line()



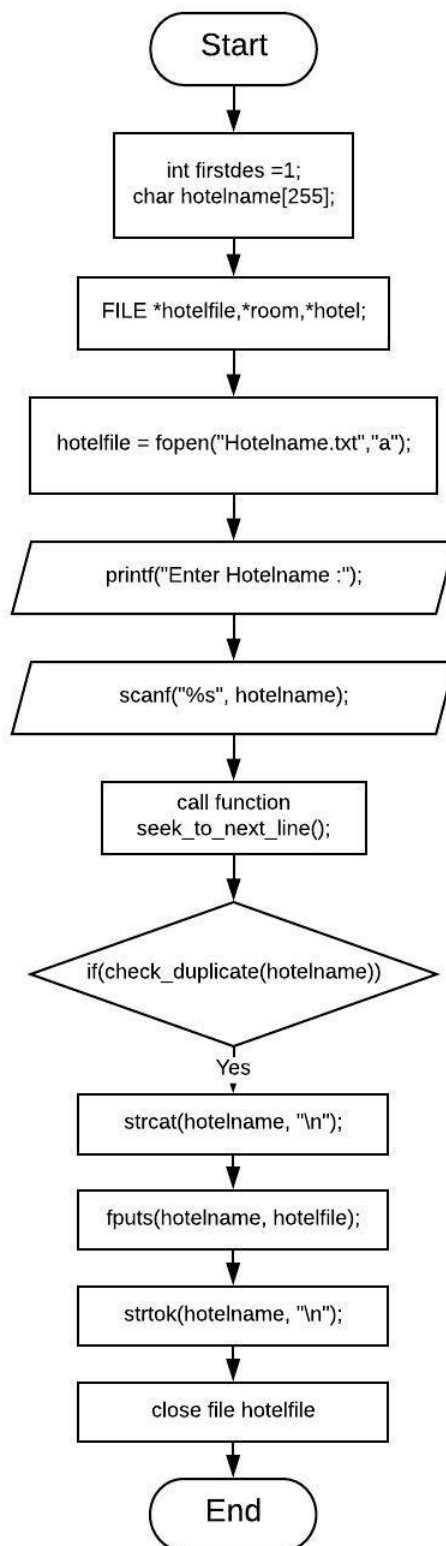
login()



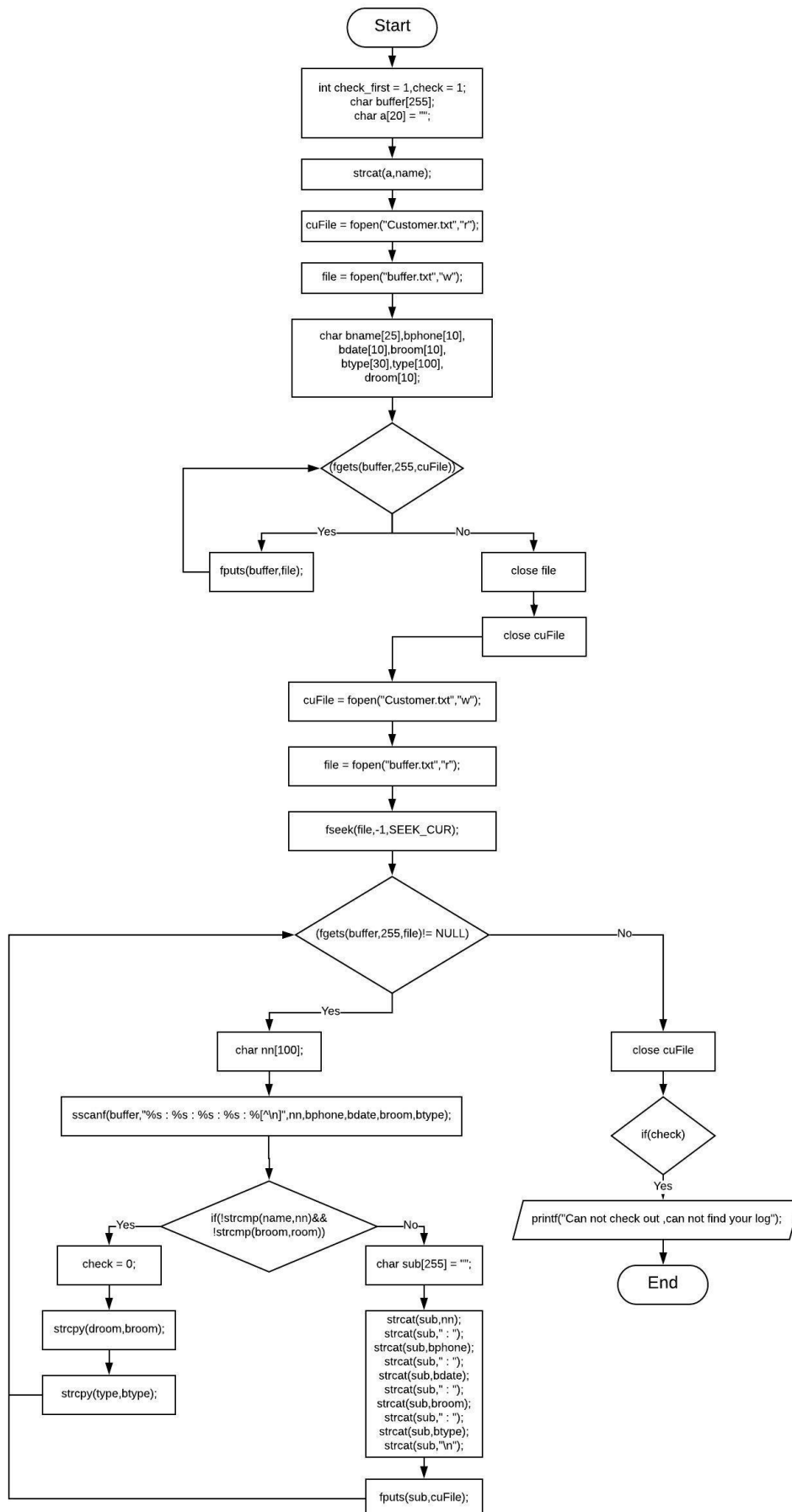
manuAdmin()



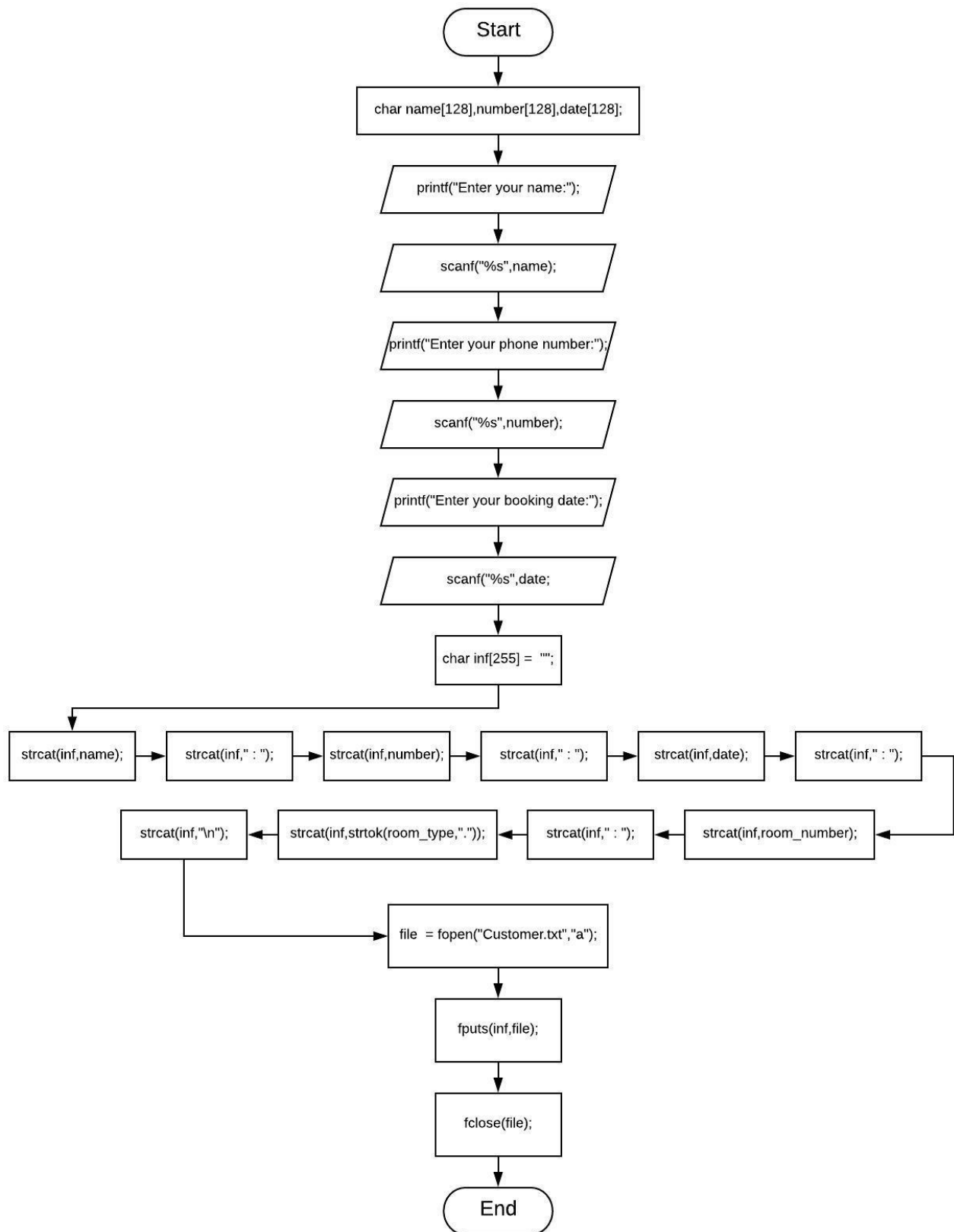
addHotel()



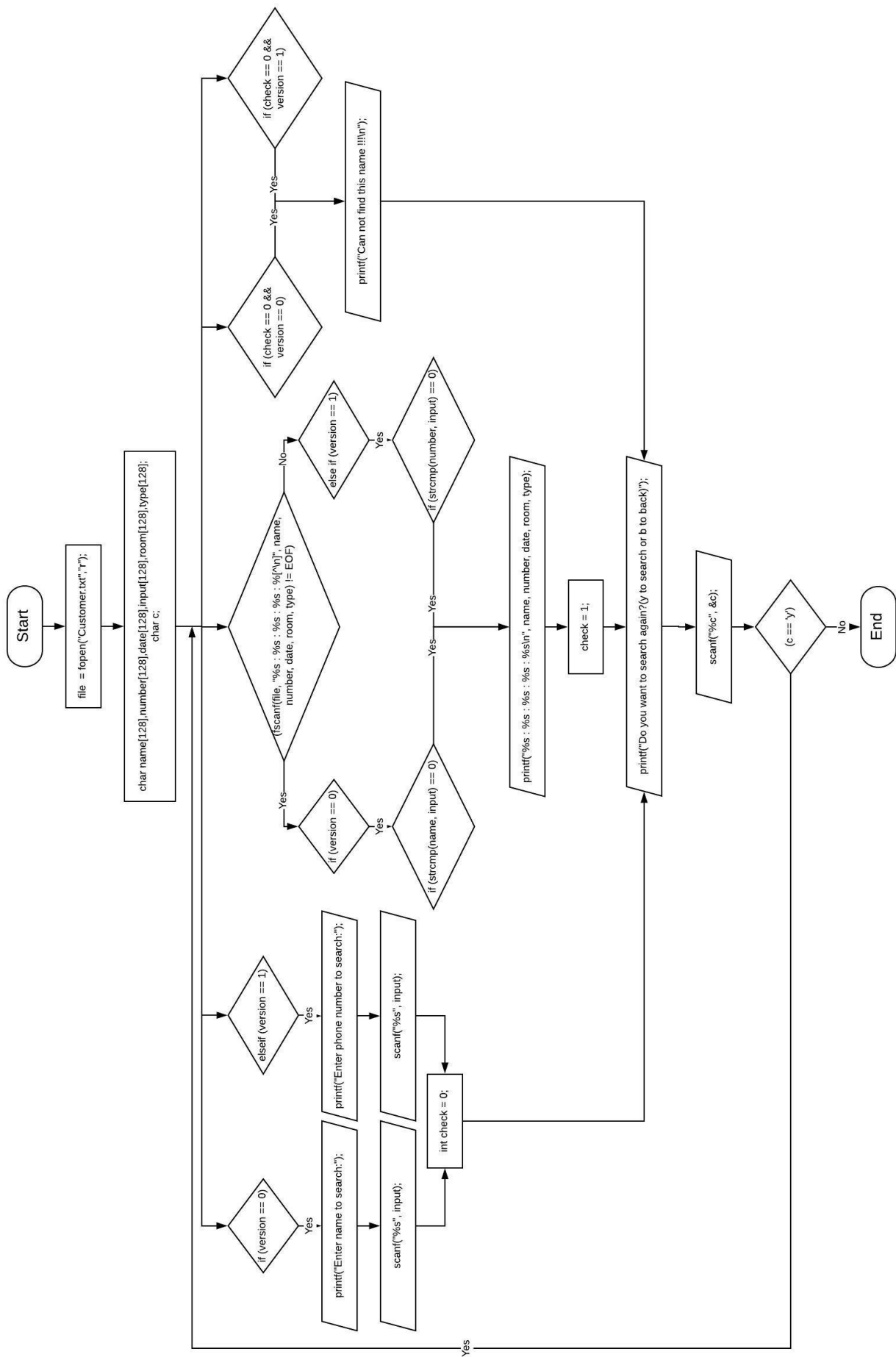
checkout()



information()



search()



Main.c

```
#include <stdio.h>

#include <string.h>

#include "Hotel.h"

#include "Admin.h"

#include "User.h"

void home(){

    char* name;

    char c[2];

    int check = 0;

    printf("|----- Welcome to booking hotel -----|\n\n");

    do{

        int command = 0 ;

        printf("1. Select By Hotel\n");

        printf("2. Check Booking detail by name\n");

        printf("3. Check Booking detail by phone number\n");

        printf("4. Admin menu\n");

        printf("5. Exit\n");

        printf("Enter your Command :");

        scanf("%s",&c);

        seek_to_next_line();

        command = atoi(c);

        if(command > 5 || command < 0 || strlen(c) > 1){

            command = 0 ;

        }

        switch (command){

            case 1:

                printf("\n");hotel();
```

```
        break;

    case 2:

        printf("\n");search(0);

        break;

    case 3:

        printf("\n");search(1);

        break;

    case 4:

        printf("\n");login(); //Username = Admin , Pass = rootAdmin

        break;

    case 5:

        printf("\n");check = 1;

        break;

    default:

        printf("Invalid command, please input again\n");

    }

}while(check == 0 );

printf("Thank you for using program\n");

}


int main(int argc, char* argv[]) {

    home();}
```

Hotel.h

```
#ifndef BOOKINGHOTEL_HOTEL_H
#define BOOKINGHOTEL_HOTEL_H
```

```
#include <stdio.h>
#include <string.h>
#include <stdlib.h>
#include "User.h"
```

```
void roomDetail(char* hotelname);
void hotel();
```

```
typedef struct hotel {
    char* name;
    struct hotel * next;
}Hotel;
```

```
typedef struct roomtype{
    char *name;
    int status;
    struct roomtype *next;
}Roomtype;
```

```
typedef struct room{
    char *room_num;
    int status;
    struct room *next;
}Room;
```

```

void makeHotelList(Hotel **lst, char *hotelname){
    Hotel* newHotel = (Hotel*)malloc(sizeof(Hotel)); ;
    newHotel->name = hotelname;
    newHotel->next = NULL;
    if(*lst == NULL) {
        *lst = newHotel;
    }
    else{
        Hotel* buffer = *lst;
        Hotel* head = buffer;
        while(buffer->next != NULL) {
            buffer = buffer->next;
        }
        buffer->next = newHotel;
        *lst = head;
    }
}

```

```

void makeRoomTypeList(Roomtype **lst, char *roomname, int s){
    Roomtype* newRoom = (Roomtype*)malloc(sizeof(Roomtype)); ;
    newRoom->name = roomname;
    newRoom->next = NULL;
    newRoom->status = s;

    if(*lst == NULL) {
        *lst = newRoom;
    }
}

```

```

}

else{

    Roomtype* buffer = *lst;

    Roomtype* head = buffer;

    while(buffer->next != NULL) {

        buffer = buffer->next;

    }

    buffer->next = newRoom;

    *lst = head;

}

}

```

```

void makeRoomList(Room **lst, char *room_num, int s){

    Room* newRoom = (Room*)malloc(sizeof(Room)); ;

    newRoom->room_num = room_num;

    newRoom->next = NULL;

    newRoom->status = s;

    if(*lst == NULL) {

        *lst = newRoom;

    }

    else{

        Room* buffer = *lst;

        Room* head = buffer;

        while(buffer->next != NULL) {

            buffer = buffer->next;

        }

        buffer->next = newRoom;
    }
}

```

```

        *lst = head;

    }

}

```

```

void write_file(Room* room,char* filename){

```

```

    Room* sub = room;

```

```

    FILE *f;

```

```

    f = fopen(strcat(filename,".txt"),"w");

```

```

    while (sub != NULL) {

```

```

        char* new_room = (char*)malloc(sizeof(sub->room_num));

```

```

        new_room = sub->room_num;

```

```

        strcat(new_room," : ");

```

```

        if(sub->status == 1){

```

```

            strcat(new_room,"Avalible\n");

```

```

            fputs(new_room,f);

```

```

        }

```

```

        else if(sub->status == 0){

```

```

            strcat(new_room,"Full\n");

```

```

            fputs(new_room,f);

```

```

        }

```

```

        sub = sub->next;

```

```

    }

```

```

    fclose(f);

```

```

}

```

```

void booking(char* all_room, char* hotelname){

```

```

    FILE * all;

```



```

all = fopen(all_room,"r+");

Room *room = NULL;

char room_number[10],room_status[10];

while (fscanf(all,"%s : %s",room_number,room_status)!= EOF){

    printf("%s : %s\n",room_number,room_status);

    int status;

    if(strcmp(room_status,"Avalible") == 0)

        status = 1;

    else

        status = 0;

    char *sub_room = (char*)malloc(sizeof(room_number));

    strcpy(sub_room,room_number);

    makeRoomList(&room,sub_room,status);

}

```

```

char n[10];

int check = 0, invalid = 0;

```

```

do {

    printf("Enter the room number that avalible( b to back):");

    scanf("%s", n);

    Room *sub = room;

    if(strcmp(n,"b")== 0){

        char* hotel = hotelname;

        strtok(hotel,"_");
    }
}

```

```

    strcat(hotel, ".txt");

    roomDetail(hotel);

    return;
}

while (sub != NULL) {

    if (strcmp(sub->room_num, n) == 0 && sub->status == 1) {

        char cf;

        printf("Are you sure to booking this room?(y to confirm)");

        getchar();

        scanf("%c", &cf);

        if(cf == 'y'){

            information(n, all_room);

            sub->status = 0;

        }

        check = 1;

        break;

    }

    else if (strcmp(sub->room_num, n) == 0 && sub->status == 0){

        printf("This room is already booking\n");

        invalid = 0;

        break;

    }

    else

        invalid = 1;

    sub = sub->next;

}

if(invalid == 1)

```

```
printf("Your select is invalid or not available\n");
```

```
invalid = 0;
```

```
}while (check == 0);
```

```
if(check == 1){
```

```
    write_file(room,all_room);
```

```
    printf("Success!!!\n");
```

```
}
```

```
}
```

```
void checkStatus(char* room_name,int choice,Roomtype **r){
```

```
    FILE *room,*type;
```

```
    int status;
```

```
    char room_number[10],room_status[10];
```

```
    room = fopen(room_name,"r");
```

```
    char type_name[255];
```

```
    for(int i =0;i< choice;i++){
```

```
        fgets(type_name, sizeof(type_name),room);
```

```
    }
```

```
    strtok(type_name,"\n");
```

```
    type = fopen(type_name,"r");
```

```
    while (fscanf(type,"%s : %s",room_number,room_status)!= EOF){
```

```
        if(strcmp(room_status,"Full")!= 0){
```

```
            printf("\nStatus : Available\n");
```

```

        status = 1;

        char* sub = malloc(sizeof(type_name));

        strcpy(sub,type_name);

        sub = strtok(sub,"\n");

        makeRoomTypeList(r, sub, status);

        fclose(room);

        fclose(type);

        return;

    }

}

printf("\nStatus : Full\n");

status = 0;

makeRoomTypeList(r, type_name, status);

fclose(room);

fclose(type);

}

```

```

void roomDetail(char* hotelname){

    FILE *roomlst;

    roomlst = fopen(hotelname,"r");

    if(roomlst == 0){

        return;

    }

    Roomtype *roomLink = NULL;

    char buffer[255];

    char* n = strtok(hotelname,".");

```

```
n = strcat(n,"_room.txt");
```

```
int order = 1;
```

```
int number = 0;
```

```
printf("-----Room Detail-----\n");
```

```
while (fgets(buffer, sizeof(buffer),roomlst)){
```

```
    if(strcmp(buffer,"\n") == 0){
```

```
        checkStatus(n,order,&roomLink);
```

```
        order++;
```

```
    }
```

```
    printf("%s",buffer);
```

```
    number++;
```

```
}
```

```
checkStatus(n,order,&roomLink);
```

```
fclose(roomlst);
```

```
char* room_name;
```

```
char c[2];
```

```
int room_status,command,check = 1;
```

```
do {
```

```
    Roomtype *select_room = roomLink;
```

```
    printf("\nEnter the selected room type (or b to back): ");
```

```
    scanf("%s", c);
```

```
    if(strcmp(c,"b")== 0){
```

```
        hotel();
```

```
        return;
    }

    command = atoi(c);

    if(command < 0 || command > number || strlen(c)> 1){

        printf("Enter invalid room type\n");

        continue;
    }
```

```
    for (int i = 0; i < command; i++) {

        room_name = select_room->name;

        room_status = select_room->status;

        select_room = select_room->next;

    }

    if (!room_status)

        printf("Enter invalid type or type with Full status!!!\n");

    else

        check = 0;
```

```
}while(check);
```

```
booking(room_name,hotelname);
```

```
}
```

```
void hotel() {
```

```
    FILE *hotelst;
```

```
    char buffer[255];
```

```
    Hotel *hotel = NULL;
```

```
int len_hotel = 0;
```

```
printf("\n-----Hotel name-----\n");
```

```
hotelst = fopen("Hotelname.txt","r");
```

```
while (fgets(buffer, sizeof(buffer),hotelst)){
```

```
    printf("%d.%s",len_hotel+1,buffer);
```

```
    char* sub = malloc(sizeof(buffer));
```

```
    strcpy(sub,buffer);
```

```
    sub = strtok(sub,"\n");
```

```
    makeHotelList(&hotel, sub);
```

```
    len_hotel++;
```

```
}
```

```
fclose(hotelst);
```

```
int command;
```

```
char c[1];
```

```
Hotel* selecthotel = hotel;
```

```
char* hotelname;
```

```
int check = 1;
```

```
do{
```

```
    printf("\nSelect Hotel(or b to back): ");
```

```
    scanf("%s",c);
```

```
    if(strcmp(c,"b")== 0) {
```

```
        return;
```

```
}
```

```
command = atoi(c);
```

```
if(command != 0 && command > len_hotel) printf("Invalid Select Hotel!!!");

else check = 0;

}while (check);


for(int i = 0;i<command ;i++){

    hotelname = selecthotel->name;

    selecthotel = selecthotel->next;

}


hotelname = strcat(hotelname,".txt");

roomDetail(hotelname);

}

#endif //BOOKINGHOTEL_HOTEL_H
```


Admin.h

```
#ifndef BOOKINGHOTEL_ADMIN_H
#define BOOKINGHOTEL_ADMIN_H
```

```
#include<stdio.h>
#include<string.h>
#include <stdlib.h>
#include <ctype.h>
#include "Hotel.h"
```

```
void seek_to_next_line( void )
{
    int c;
    while( (c = fgetc( stdin )) != EOF && c != '\n' );
}
```

```
void checkout(char room[10],char name[10]){
    FILE *cuFile,*file;
    int check_first = 1,check = 1;
    char buffer[255];
    char a[20] = "";
    strcat(a,name);
    cuFile = fopen("Customer.txt","r");
    file = fopen("buffer.txt","w");
    char bname[25],bphone[10],bdate[10],broom[10],btype[30],type[100],droom[10];
```

```

while(fgets(buffer,255,cuFile)){

    fputs(buffer,file);

}

fclose(file);

fclose(cuFile);

cuFile = fopen("Customer.txt","w");

file = fopen("buffer.txt","r");

fseek(file,-1,SEEK_CUR);

while(fgets(buffer,255,file)!= NULL){

    char nn[100];

    sscanf(buffer,"%s : %s : %s : %s : %^[^\n]",nn,bphone,bdate,broom,btype);

    if(!strcmp(name,nn)&& !strcmp(broom,room)){

        check = 0;

        strcpy(droom,broom);

        strcpy(type,btype);

        continue;

    }

    else{

        char sub[255] = "";

        strcat(sub,nn);

        strcat(sub," : ");

        strcat(sub,bphone);

        strcat(sub," : ");

        strcat(sub,bdate);

        strcat(sub," : ");

        strcat(sub,broom);

        strcat(sub," : ");

        strcat(sub,btype);
    }
}

```

```

        strcat(sub, "\n");

        fputs(sub, cuFile);
    }
}

fclose(cuFile);

if(check){
    printf("Can not check out ,can not find your log");

    return;
}

```

```

cuFile = fopen(strcat(type, ".txt"), "r");

char n[25];

char s[25];

Room *r, *ar;

int first = 1;

while (fscanf(cuFile, "%s : %s", n, s) != EOF) {
    char *n_in = (char*)malloc(sizeof(n));

    strcpy(n_in, n);

    Room *in = (Room *) malloc(sizeof(Room));

    in->room_num = n_in;

    int st;

    if(strcmp(s, "Avalible") == 0)

        st = 1;

    else

        st = 0;

    in->status = st;
}

```

```
in->next = NULL;
```

```
if (first) {
```

```
    r = in;
```

```
    ar = r;
```

```
    first = 0;
```

```
} else {
```

```
    r->next = in;
```

```
    r = r->next;
```

```
}
```

```
}
```

```
fseek(cuFile, 0, SEEK_SET);
```

```
fclose(cuFile);
```

```
fopen(type, "w");
```

```
while (ar != NULL) {
```

```
    char buffer[255] = "";
```

```
    strcat(buffer, ar->room_num);
```

```
    strcat(buffer, " : ");
```

```
if (strcmp(ar->room_num, droom) == 0) {
```

```
    strcat(buffer, "Avalible");
```

```
}
```

```
else {
```

```
    if (ar->status == 1)
```

```
        strcat(buffer, "Avalible");
```

```
    else
```

```
        strcat(buffer, "Full");
```

```

    }

    ar = ar->next;

    strcat(buffer, "\n");

    fputs(buffer, cuFile);

}

fclose(cuFile);

printf("Check Out Success\n");
}

```

```

int check_duplicate(char* filename){

    FILE *file;

    file = fopen("Hotelname.txt","r");

    char buffer[strlen(filename)+1];

    while (fgets(buffer, sizeof(buffer),file)){

        if(strcmp(filename,buffer) == 0)

            return 0;

    }

    return 1;

}

```

```

void addHotel(){

    int firstdes =1;

    FILE *hotelfile,*room,*hotel;

    hotelfile = fopen("Hotelname.txt","a");

    char hotelname[255];

    printf("Enter Hotelname :");

```

```
scanf("%s", hotelname);  
  
seek_to_next_line();  
  
if(check_duplicate(hotelname)) {  
    strcat(hotelname, "\n");  
    fputs(hotelname, hotelfile);  
    strtok(hotelname, "\n");  
}  
  
fclose(hotelfile);
```

```
  
char *hotel_room = (char*)malloc(sizeof(hotelname));  
  
hotel_room = hotelname;  
  
strcat(hotel_room, "_room.txt");  
  
room = fopen(hotel_room, "a");  
  
strtok(hotel_room, "_");
```

```
  
char moreRoom;
```

```
  
do{  
    char roomtype[] = "Room Type : ";  
    char buffer[255];  
    char rt[255] = "";  
    printf("Enter Room Type : ");  
    scanf("%s", buffer);  
    seek_to_next_line();  
  
    strcat(buffer, ".txt\n");  
    strcat(rt, buffer);  
    fputs(buffer, room);
```

```
strtok(buffer, ".");
```

```
fclose(room);
```

```
strcat(hotelname, ".txt");
```

```
hotel = fopen(hotelname, "a");
```

```
strcat(roomtype, buffer);
```

```
strcat(roomtype, "\n");
```

```
fputs(roomtype, hotel);
```

```
int check = 0;
```

```
do {
```

```
    char des[50];
```

```
    if(firstdes)
```

```
        strcpy(des, "    Description : ");
```

```
    else
```

```
        strcpy(des, "        : ");
```

```
    printf("Enter Description(1 line per 1 option) : ");
```

```
    scanf("%[^\n]", buffer);
```

```
    seek_to_next_line();
```

```
    strcat(buffer, "\n");
```

```
    strcat(des, buffer);
```

```
    fputs(des, hotel);
```

```
    char more;
```

```
    printf("Do you want to add more description? (y to add more):");
```

```
    scanf("%c", &more);
```

```
    seek_to_next_line();
```

```
printf("You entered %c\n",more);
```

```
if(more == 'y') {
```

```
    firstdes = 0;
```

```
    check = 1;
```

```
}
```

```
else {
```

```
    firstdes = 1;
```

```
    check = 0;
```

```
}
```

```
}while (check == 1);
```

```
char people[] = "    People suggest: ";
```

```
char detail[255];
```

```
printf("Enter people suggest: ");
```

```
scanf("%s",detail);
```

```
seek_to_next_line();
```

```
strcat(detail,"\n");
```

```
strcat(people,detail);
```

```
fputs(people,room);
```

```
char price[] = "    Price: ";
```

```
char p[10];
```

```
printf("Enter the price :");
```

```
scanf("%s",p);
```

```
seek_to_next_line();
```

```
strcat(p,"\n");
```



```
strcat(price,p);
```

```
fputs(price,room);
```

```
int check_digit = 1;
```

```
do {
```

```
    char sroom[10], eroom[10];
```

```
    printf("Enter starting room number: ");
```

```
    scanf("%s", sroom);
```

```
    seek_to_next_line();
```

```
    for(int i =0;i < strlen(sroom);i++){
```

```
        if(!isdigit(sroom[i])){
```

```
            printf("Invalid Starting room\n");
```

```
            continue;
```

```
        }
```

```
    }
```

```
    printf("Enter ending room number: ");
```

```
    scanf("%s", eroom);
```

```
    seek_to_next_line();
```

```
    for(int i =0;i < strlen(eroom);i++){
```

```
        if(!isdigit(sroom[i])){
```

```
            printf("Invalid Ending room\n");
```

```
            continue;
```

```
        }
```

```
    }
```

```

if (check_digit) {

    FILE *roomCheck;

    roomCheck = fopen(strtok(rt,"\n"), "w");

    int s = atoi(sroom),e = atoi(eroom);

    if(s < e){

        while (s <= e){

            char b[10];

            itoa(s,b,10);

            strcat(b," : Avalible\n");

            fputs(b,roomCheck);

            s++;

        }

    }

    else{

        check_digit = 0;

        printf("starting room is less than ending room\n");

    }

}

else{

    printf("Invalid room\n");

}

}while (check_digit == 0);

```

```

printf("Do you want to add more room type(y to add): ");

scanf("%c",&moreRoom);

seek_to_next_line();

```

```
    printf("You entered %c\n",moreRoom);
}while (moreRoom == 'y');

fclose(hotelfile);

fclose(room);

fclose(hotel);
}
```

```
void menuAdmin(){
    int command , check = 0;
    do {
        printf("1.Adding Hotel\n");
        printf("2.Check out\n");
        printf("3.Back\n");
        printf("Enter the number of command :");
        scanf("%d", &command);
        if(command == 1)
            addHotel();
        else if(command == 2) {
            char room[10],name[25];
            printf("Enter room to check out: ");
            scanf("%s",room);
            seek_to_next_line();

            printf("Enter customer name:");
            scanf("%s",name);
            seek_to_next_line();
        }
    } while (command != 3);
}
```

```

        checkout(room,name);
    }
    else if(command == 3)
        check = 1;
    else
        printf("Invalid command!!!");
}while(check == 0);

}

```

```

void login(){
    char user[10],pass[10];
    int check = 0;
    do {
        printf("Enter Username (b to back): ");
        scanf("%s", user);
        if (strcmp(user, "b") == 0)
            return;
        printf("Enter Password: ");
        scanf("%s", pass);
        int check_user = strcmp(user, "Admin"),
            check_pass = strcmp(pass, "rootAdmin");
        if (check_user && check_pass) {
            printf("Username or Password is invalid\n");

        } else {
            menuAdmin();
            check = 1;
        }
    } while (check == 0);
}

```

```
}
```

```
}while(check == 0);
```

```
}
```

```
#endif //BOOKINGHOTEL_ADMIN_H
```

User.h

```
#ifndef BOOKINGHOTEL_USER_H

#define BOOKINGHOTEL_USER_H


#include <stdio.h>

#include <string.h>

#include <stdlib.h>


void information(char room_number[10],char room_type[50]){

    char name[128],number[128],date[128];


    printf("Enter your name:");

    scanf("%s",name);


    printf("Enter your phone number:");

    scanf("%s",number);


    printf("Enter your booking date:");

    scanf("%s",date);


    char inf[255] = "";

    strcat(inf,name);

    strcat(inf," : ");

    strcat(inf,number);

    strcat(inf," : ");

    strcat(inf,date);

    strcat(inf," : ");

    strcat(inf,room_number);
```

```

    strcat(inf," : ");
    strcat(inf,strtok(room_type,". "));
    strcat(inf,"\n")
    FILE *file;
    file = fopen("Customer.txt","a");
    fputs(inf,file);
    fclose(file);
}

```

```

void search(int version){
    FILE *file;
    file = fopen("Customer.txt","r");
    char name[128],number[128],date[128],input[128],room[128],type[128];
    char c;

    do {
        if (version == 0) {
            printf("Enter name to search:");
            scanf("%s", input);
        } else if (version == 1) {
            printf("Enter phone number to search:");
            scanf("%s", input);
        }

        int check = 0;
        while (fscanf(file, "%s : %s : %s : %s : %[^\\n]", name, number, date, room, type) != EOF) {
            if (version == 0) {
                if (strcmp(name, input) == 0) {
                    printf("%s : %s : %s : %s : %s\\n", name, number, date, room, type);
                }
            }
        }
    } while (1);
}

```

```

        check = 1;
    }
} else if (version == 1) {
    if (strcmp(number, input) == 0) {
        printf("%s : %s : %s : %s : %s\n", name, number, date, room, type);
        check = 1;
    }
}
}

```

```

if (check == 0 && version == 0) {
    printf("Can not find this name !!!\n");
}
else if (check == 0 && version == 1){
    printf("Can not find this name !!!\n");
}
printf("Do you want to search again?(y to search or b to back)");
getchar();
scanf("%c", &c);
if(c == 'b')
    return;
}while(c == 'y');

```

```

}

```

```

#endif //BOOKINGHOTEL_USER_H

```