/\*~~~~~~~~~~~~HEADER FILES TO BE USED~~~~~~~~~~~~~\*/  
  
#include<stdio.h>  
#include<process.h>  
#include<string.h>  
#include<conio.h>  
  
  
  
/\*\*\*\*\*\*\*\*\*~~~~~~~~~~~~~STRUCTURES TO BE USED~~~~~~~~~~~\*\*\*\*\*\*\*\*\*\*\*\*/  
  
struct time  
{  
int iHrs,iMins;  
  
};  
  
struct bus  
{  
int iBusNum;  
int iBusCode;  
char chSeat[8][4][20];  
char chDrivers\_Name[20];  
struct time stDeparture\_Time, stArrival\_Time;  
char chGoesTo[20];  
char chGoesFrom[20];  
float fFare;  
int iTicketSold;  
};  
  
/\*~~~~~~~~~~~~~~~~~~~~~~GLOBAL VARIABLES~~~~~~~~~~~~~~~~~~~~~~\*/  
  
  
char chEmpty[]="Empty";  
  
static int iNumber=1;  
char i=':';   
struct bus stBus[40];  
  
  
/\*~~~~~~~~~~~~~~~~~~~~~~FUNCTION PROTOTYPES~~~~~~~~~~~~~~~~~~~~~~\*/  
  
void fnNew\_Bus();  
void fnMainMenu();  
void fnShowBuses();  
void fnEmpty();  
void fnSeatReservation();  
void fnShowStatus();  
void fnPrintLine();  
void fnDailyReport();  
  
/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  
Function main  
PARAMETERS:  
no parameters....  
Type void.  
Return type is also void.  
Entry point to the program.  
It calls the functions for Main Menu.  
\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/  
  
void main()  
{  
fnMainMenu();  
}  
  
/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  
FUNCTION DEFINITIONS  
\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/  
  
  
/\*~~~~~~~ FUNCTION fnMainMenu  
Parameters:void  
Return type:void  
[**Description**](http://www.dreamincode.net/forums/topic/78234-bus-reservation/):displays the main menu of the software..  
allows the user to go to the desired screen..~~~~~~~\*/  
  
void fnMainMenu()  
{  
int iChoice;  
printf("\n\n\t\t\t\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_");  
printf("\n\n\t\t\tBUS [**RESERVATION**](http://www.dreamincode.net/forums/topic/78234-bus-reservation/) [**SYSTEM**](http://www.dreamincode.net/forums/topic/78234-bus-reservation/)");  
printf("\n\n\t\t\t\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\n");  
fnPrintLine();  
/\*Displaying the available choices : \*/  
  
printf("\n\n\t\t1.Bus Installation");  
printf("\n\t\t2.Alottment");  
printf("\n\t\t3.Show details");  
printf("\n\t\t4.Status");  
printf("\n\t\t5.Daily Report");  
printf("\n\t\t6.Exit");  
printf("\n\n\n\tEnter your choice as(1/2/3/4/5):-\t");  
fflush(stdin);  
scanf("%d",&iChoice);  
/\*Calling the appropriate functions to display the screen  
corresponding to the entered choice\*/  
  
switch(iChoice)  
{  
case 1 : //clrscr();  
fnNew\_Bus();  
break;  
case 2: fnSeatReservation();  
break;  
  
case 3: fnShowBuses();  
break;  
case 4: fnShowStatus();  
break;  
case 5: fnDailyReport();  
break;  
case 6: exit(0);  
default: printf("\t\t\tU have entered Wrong Choice!!!!");  
getch();  
fnMainMenu();  
  
  
}  
}  
  
  
/\*~~~~~~~ FUNCTION fnNewBus  
Parameters: void  
Return type: void  
[**Description**](http://www.dreamincode.net/forums/topic/78234-bus-reservation/): This function is used to install the new bus in the [**system**](http://www.dreamincode.net/forums/topic/78234-bus-reservation/)  
& add the relative information about the new bus ~~~~~~~\*/  
  
  
void fnNew\_Bus()  
  
{   
  
char chChoice;  
printf("\n\n\t\tEnter Information about bus\n");  
do{  
fnPrintLine();  
printf("\n\n\t\t Bus No:\t%d",iNumber);  
busC: printf("\n\n\tEnter Bus Code:\t");  
fflush(stdin);  
/\*scanf("%d",&stBus[iNumber].iBusNum);  
if(stBus[iNumber].iBusNum==0)  
{  
printf("\n\t\tInvalid Bus Number!!!!");  
goto busN;  
}\*/  
stBus[iNumber].iBusNum=iNumber;  
scanf("%d",&stBus[iNumber].iBusCode);  
if(stBus[iNumber].iBusCode<1||stBus[iNumber].iBusCode>9999)  
{  
printf("\n\t\tInvalid Bus Code!!!!");  
goto busC;  
}  
/\*if(strlen(stBus[iNumber].iBusCode)>20)  
{  
printf("Maximum 20 characters are allowed");  
goto busC;  
}\*/  
  
dname: printf("\n\n\tEnter driver's name:\t");  
fflush(stdin);  
gets(stBus[iNumber].chDrivers\_Name);  
// puts(stBus[iNumber].chDrivers\_Name);  
if(strlen(stBus[iNumber].chDrivers\_Name)>20)  
{  
printf("Maximum 20 characters are allowed");  
goto dname;  
}  
artime: printf("\n\tEnter arrival time:\t");  
fflush(stdin);  
scanf("%d%c%d",&stBus[iNumber].stArrival\_Time.iHrs,&i,&stBus[iNumber].stArrival\_Time.iMins);  
if(stBus[iNumber].stArrival\_Time.iHrs==0)  
{  
printf("\n\n\t\tInvalid tTme!!!!");  
goto artime;  
}  
//if((stBus[iNumber].stArrival\_Time.iHrs>57)||(stBus[iNumber].stArrival\_Time.iHrs<48))  
//printf("invalid time");  
if((i!=':')||(stBus[iNumber].stArrival\_Time.iHrs>=24)||(stBus[iNumber].stArrival\_Time.iHrs<0)||(stBus[iNumber].stArrival\_Time.iMins>=60)||(stBus[iNumber].stArrival\_Time.iMins<0))  
{  
printf("\n\t\tInvalid Time!!!!\n");  
printf("\t\tEnter only--hh:mm!!!!");  
goto artime;  
}  
deptime: printf("\n\tEnter departure time:\t");  
fflush(stdin);  
scanf("%d%c%d",&stBus[iNumber].stDeparture\_Time.iHrs,&i,&stBus[iNumber].stDeparture\_Time.iMins);  
if(stBus[iNumber].stDeparture\_Time.iHrs==0)  
{  
printf("\t\tinvalid Time!!!!");  
goto deptime;  
}  
if((i!=':')||(stBus[iNumber].stDeparture\_Time.iHrs>=24)||(stBus[iNumber].stDeparture\_Time.iHrs<0)||(stBus[iNumber].stDeparture\_Time.iMins>=60)||(stBus[iNumber].stDeparture\_Time.iMins<0))  
{  
printf("\n\t\tInvalid Time!!!!");  
printf("\n\t\tEnter only--hh:mm");  
goto deptime;  
}  
from: printf("\n\tFrom:\t");  
fflush(stdin);  
gets(stBus[iNumber].chGoesFrom);  
if(strlen(stBus[iNumber].chGoesFrom)>20)  
{  
printf("Maximum 20 characters are allowed");  
goto from;  
}  
  
to: printf("\n\tTo:\t");  
fflush(stdin);  
gets(stBus[iNumber].chGoesTo);  
if(strlen(stBus[iNumber].chGoesTo)>20)  
{  
printf("Maximum 20 characters are allowed");  
goto to;  
}  
printf("\n\tFare:\t");  
fflush(stdin);  
scanf("%f",&stBus[iNumber].fFare);  
stBus[iNumber].iTicketSold=0;  
printf("\n");  
fnEmpty();  
fnPrintLine();  
  
// printf("%s",stBus[iNumber].chGoesFrom);  
// printf("%s",stBus[iNumber].chGoesTo);  
  
printf("\n\n\n\tDo u want to continue to add information about new bus(y/n)?? ");  
fflush(stdin);  
scanf("%c",&chChoice);  
// printf("%c",chChoice);  
  
iNumber++;  
//printf("%d",iNumber);  
}while(chChoice=='y'||chChoice=='Y');  
fnMainMenu();  
  
  
  
}  
  
/\*~~~~~~~ FUNCTION fnShowBuses  
Parameters: void  
Return type: void  
[**Description**](http://www.dreamincode.net/forums/topic/78234-bus-reservation/): This function has been used to show the details of  
buses which have been installed.~~~~~~~\*/  
  
void fnShowBuses()  
{  
int i1;  
printf("\n\n\t\t\t\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_");  
printf("\n\n\t\t\t BUSES AVALAIBLE");  
printf("\n\n\t\t\t\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\n");  
  
for(i1=1;i1<iNumber;i1++)   
{   
printf("\n");  
fnPrintLine();  
printf("\n\t\tbus no-\t\t%d",stBus[i1].iBusNum);  
printf("\n\t\tbus code-\t%d",stBus[i1].iBusCode);  
printf("\n\t\tDrivers Name-\t%s",stBus[i1].chDrivers\_Name);  
printf("\n\t\tFrom-\t\t%s",stBus[i1].chGoesFrom);  
printf("\n\t\tTo-\t\t%s",stBus[i1].chGoesTo);  
printf("\n\t\tArrival time-\t%d%c%d",stBus[i1].stArrival\_Time.iHrs,i,stBus[i1].stArrival\_Time.iMins);  
printf("\n\t\tDeparture time-\t%d%c%d",stBus[i1].stDeparture\_Time.iHrs,i,stBus[i1].stDeparture\_Time.iMins);  
printf("\n\t\tFare-\t\t%.4f",stBus[i1].fFare);  
printf("\n\t\tTickets Sold-\t%d",stBus[i1].iTicketSold);  
printf("\n");  
fnPrintLine();  
//fflush(stdout);  
  
}  
  
getch();  
  
fnMainMenu();  
}  
  
/\*~~~~~~~ FUNCTION fnSeatReservation  
Parameters:void  
Return type:void  
[**Description**](http://www.dreamincode.net/forums/topic/78234-bus-reservation/):By using this function we can reserve any of the unreserved seatin a   
perticular bus ... .~~~~~~~\*/  
  
void fnSeatReservation()  
{  
//char arrSize[8][4];  
char chName[20];  
int iBusN;  
int iSeat;  
char chChoice;  
printf("\n\n\t\t\t\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_");  
printf("\n\n\t\t\t ALLOTMENT");  
printf("\n\n\t\t\t\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\n");  
fnPrintLine();  
printf("\n\n\t\tEnter the Bus Number-\t");  
fflush(stdin);  
scanf("%d",&iBusN);  
if(iBusN>=iNumber)  
{  
printf("\n\t\t\tSorry Bus Doesn,t Exist!!!!");  
fnSeatReservation();  
}  
  
seat: printf("\n\t\tEnter the Seat number-\t");  
fflush(stdin);  
scanf("%d",&iSeat);  
if(iSeat>32)  
{  
printf("\n\t\tSorry!! There r only 32 seats in the bus!!!!") ;  
goto seat;  
}  
else if(strcmp(stBus[iBusN].chSeat[iSeat/4][(iSeat%4)-1],"Empty")==0)  
{  
printf("\n\t\tEnter the passenger's name-\t");  
name: fflush(stdin);  
gets(chName);  
if(strlen(chName)>20)  
{  
printf("\n\t\tplz enter only 20 characters!!!!");  
goto name;  
}  
else  
{  
strcpy(stBus[iBusN].chSeat[iSeat/4][iSeat%4-1],chName);  
printf("\n\t\tYour seat is reserved now!!");  
stBus[iBusN].iTicketSold++;  
printf("\n\t do u want to continue with [**reservation**](http://www.dreamincode.net/forums/topic/78234-bus-reservation/)(y/n)??");  
fflush(stdin);  
chChoice=getchar();  
if(chChoice=='y'||chChoice=='Y')  
fnSeatReservation();  
else  
fnMainMenu();  
}  
  
  
}else  
{  
printf("\n\tThis seat is already reserved!!!!");  
printf("\n\t do u want to try again??");  
fflush(stdin);  
chChoice=getchar();  
if(chChoice=='y'||chChoice=='Y')  
fnSeatReservation();  
else  
fnMainMenu();  
}  
}  
  
void fnDailyReport()  
{ int i;  
double dDailyTotal=0;  
double dBusTotal=0;  
printf("\n\n\t\t\t\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_");  
printf("\n\n\t\t\t DAILY REPORT");  
printf("\n\n\t\t\t\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\n");  
fnPrintLine();  
for(i=1;i<iNumber;i++)  
{ dBusTotal=stBus[i].iTicketSold\*stBus[i].fFare;  
printf("\n\t\tBus no-\t%d\t Total tickets Sold-\t%d",i,stBus[i].iTicketSold);  
printf("\n\t\t\tTotal Fare-\t%.4lf\n",dBusTotal);  
dDailyTotal+=dBusTotal;  
  
}  
printf("\n\n\t\t\tDaily Total=\t%lf",dDailyTotal);  
getch();  
fnMainMenu();  
  
}  
  
  
/\*~~~~~~~ FUNCTION empty  
Parameters:void  
Return type:void  
[**Description**](http://www.dreamincode.net/forums/topic/78234-bus-reservation/):This function is used to make empty all the seats in a new bus that is installed~~~~~~~~~~~~\*/  
  
void fnEmpty()  
{  
for(int i=0;i<8;i++)  
{  
for(int j=0;j<4;j++)  
{  
strcpy(stBus[iNumber].chSeat[i][j],chEmpty);  
}  
  
}  
}  
  
  
  
/\*~~~~~~~ FUNCTION fnShowStatus  
Parameters:void  
Return type:void  
[**Description**](http://www.dreamincode.net/forums/topic/78234-bus-reservation/):displays the [**reservation**](http://www.dreamincode.net/forums/topic/78234-bus-reservation/) status of a perticular bus entered by the user..~~~~~~~\*/  
  
void fnShowStatus()  
{  
int iBusN,index=0,j,k;  
char chChoice;  
printf("\n\n\t\tEnter Bus no.-\t");  
fflush(stdin);  
scanf("%d",&iBusN);  
if(iBusN>=iNumber)  
{  
printf("\n\t\tBus doesn't Exist!!!!");  
fnShowStatus();  
}  
else  
{  
fnPrintLine();  
printf("\nBus code-\t%d\t\tDriver's Name-\t%s",stBus[iBusN].iBusCode,stBus[iBusN].chDrivers\_Name);  
printf("\nArrival Time-\t%d%c%d\t\tDeparture Time\t%d%c%d",stBus[iBusN].stArrival\_Time.iHrs,i,stBus[iBusN].stArrival\_Time.iMins,stBus[iBusN].stDeparture\_Time.iHrs,i,stBus[iBusN].stDeparture\_Time.iMins);  
printf("\nFrom-\t\t%s\t\tTo-\t\t%s",stBus[iBusN].chGoesFrom,stBus[iBusN].chGoesTo);  
printf("\nFare-\t\t%f\tTickets Sold-\t%d",stBus[iBusN].fFare,stBus[iBusN].iTicketSold);  
printf("\n");  
fnPrintLine();  
for(j=0;j<8;j++)  
{  
printf("\n");  
for(k=0;k<4;k++)  
{ index++;  
printf("%d .%s\t",index,stBus[iBusN].chSeat[j][k]);  
}  
}  
}  
printf("\n\n\t\tDo u want to continue with another bus(y/n)??");  
fflush(stdin);  
chChoice=getchar();  
if(chChoice=='y'||chChoice=='Y')  
fnShowStatus();  
else  
fnMainMenu();  
}  
  
/\*~~~~~~~ FUNCTION menu  
Parameters:void  
Return type:void  
[**Description**](http://www.dreamincode.net/forums/topic/78234-bus-reservation/):This function is used to print a line of \* for the purpose of separation.~~~~~~~\*/  
  
void fnPrintLine()  
{ int j;  
for(j=0;j<60;j++)  
printf("\*");  
}