**IMPLEMENTING THE CANCELLING OF TRAIN LOGIC**

The next task in the project is to **cancel a train**, which means cancelling all the booked tickets of a particular train .

This task has following subtasks:

1. Accept the train number with all the validations applied

2.While accepting the train number , allow the user to cancel the process in between

3.After the train number has been received , check whether the train number given is present or not

4. If it is not present then display the message **"Error! Invalid train number"**

5. After the train no has been received , search it in the **allbookings.dat** file .

6. If train no is present , then cancel it and display the message **TRAIN NUMBER** <number> **SUCCESSFULLY CANCELLED!** otherwise print the message **SORRY!** **NO TICEKT IN THE TRAIN NUMBER**<number>

We have divided the above requirements into 3 functions:

1. **char\* accept\_train\_no()** : This function will accept **train number** from the user with all validations applied. If the user cancels the process in between it returns **NULL**.If the input is incorrect (like wrong train number) then it will display the message **Error! Invalid train number** and again ask the user to input **train number**. If the input is correct it will return the **train number**

2. **int check\_train\_no(char\*)**: This function will accept a train number as argument and check whether a train with that number exists or not. If the train exists it **return 1** otherwise it **returns 0**

3. **int cancel\_train(char\*)**: This function will accept a **train number** as argument , search it in the file **allbookings.dat.** If the file is not present then it will display the message **NO BOOKINGS DONE YET** and **return -1** . If the **train number** is found it will **delete all the records** of that train number and **return 1** otherwise it will **return 0**

So before proceeding further make the following declarations in the header file **"rlyres.h"**

**char\* accept\_train\_no();**

**int check\_train\_no(char\*)**

**int cancel\_ticket(char\*);**

**DESIGNING THE "accept\_train\_no()" FUNCTION IN THE FILE "rlyres.c"**

This function will accept **train number** from the user and will return the **train number** it if it is correct . If the user cancels the process in between it **returns NULL**

Following is it's prototype:

**char\* accept\_train\_no();**

This function will do the following:

1. Prompt the user to input **train number**.

2. Run a loop which does the following:

i) accept the input

ii)if the input received is 0 then move to bottom coordinate (1,25) of the screen using **gotoxy()**, **erase the previous message** , set the color to **LIGHTRED** using **textcolor()** ,print the message "**Cancelling Input. . .**" , reset the color to **YELLOW** and return **0**.

***static char train\_no[10];***

***int valid;***

***printf("Enter train number:");***

***do***

***{***

***fflush(stdin);***

***scanf("%s",train\_no);***

***if(strcmp(train\_no,"0")==0)***

***{***

***textcolor(LIGHTRED);***

***gotoxy(1,25);***

***printf("\t\t\t\t\t\t\t");***

***gotoxy(1,25);***

***printf("Cancelling Input. . .!");***

***textcolor(YELLOW);***

***return NULL;***

***}***

iii) Check whether the train number is valid or not by calling the function **check\_train\_number( ).**

If the function **check\_train\_number( )** returns 0 , then it means that train number is wrong , then move to bottom coordinate (1,25) of the screen using **gotoxy()**, , set the color to **LIGHTRED** using **textcolor()** ,print the message " **Error! Invalid train number**" , move back to coordinate (20,1) , erase the entered train number and reset the color to **YELLOW** .

iv) Repeat this until input received is correct.

v) After the loop is over , return the **train number**

***valid=check\_train\_no(train\_no);***

***if(valid==0)***

***{***

***textcolor(LIGHTRED);***

***gotoxy(1,25);***

***printf("Error! Invalid Train No");***

***getch();***

***gotoxy(20,1);***

***printf("\t\t\t\t\t\t");***

***gotoxy(20,1);***

***textcolor(YELLOW);***

***}***

***}while(valid==0);***

***clrscr();***

***return train\_no;***

Following is the final code for the function **accept\_train\_no():**

**char \* accept\_train\_no()**

**{**

**static char train\_no[10];**

**int valid;**

**printf("Enter train number:");**

**do**

**{**

**fflush(stdin);**

**scanf("%s",train\_no);**

**if(strcmp(train\_no,"0")==0)**

**{**

**textcolor(LIGHTRED);**

**gotoxy(1,25);**

**printf("\t\t\t\t\t\t\t");**

**gotoxy(1,25);**

**printf("Cancelling Input. . .!");**

**textcolor(YELLOW);**

**return NULL;**

**}**

**valid=check\_train\_no(train\_no);**

**if(valid==0)**

**{**

**textcolor(LIGHTRED);**

**gotoxy(1,25);**

**printf("Error! Invalid Train No");**

**getch();**

**gotoxy(20,1);**

**printf("\t\t\t\t\t\t");**

**gotoxy(20,1);**

**textcolor(YELLOW);**

**}**

**}while(valid==0);**

**clrscr();**

**return train\_no;**

**}**

**DESIGNING THE "check\_train\_no()" FUNCTION IN THE FILE "rlyres.c"**

This function will accept a train number as argument and check whether a train with that number exists or not. If the train exists it **return 1** otherwise it **returns 0**

Following is it's prototype:

**int check\_train\_no(char \*);**

This function will do the following:

1. Open the file **alltrains.dat**

2. **Run a loop** and **read each record** of a Train from the file

3. **Compare** the **train number passed as argument** with **the train number of the record read**.

4.If the match occurs then **return 1** other wise **read the next record**.

5.Finally , if all records are read and the train number is not found then **return 0**.

Following is it's code:

***int check\_train\_no(char \*trainno)***

***{***

***FILE \*fp=fopen("d:\\myproject\\alltrains.dat","rb");***

***Train tr;***

***while(fread(&tr,sizeof(tr),1,fp)==1)***

***{***

***if(strcmp(tr.train\_no,trainno)==0)***

***{***

***fclose(fp);***

***return 1;***

***}***

***}***

***fclose(fp);***

***return 0;***

***}***

**DESIGNING THE "cancel\_train()" FUNCTION IN THE FILE "rlyres.c"**

This function will search the file **allbookings.dat** for the train number passed as argument and cancel it. If the file is not present then it will display the message **NO BOOKINGS DONE YET** and **return -1** . If the train number is found it will delete all the records of that train number and **return 1** otherwise it will **return 0**

Following is it's prototype:

**int cancel\_train(char\*)**

This function will do the following:

1. Open the file **allbookings.dat**

2. If the file is not present , it will display the message **No bookings done yet** and will return.

3. Open another file called **temp.dat**. This file will be used as a temporary copy of the file **allbookings.dat**

4. Then it will **read a record from the file allbookings.dat ,** match the **train number** with the argument passed and if the match is **not found** it will write the record in the file **temp.dat** .

5. If the match is found then it will set a variable **found** to 0 and that particular record will not be saved in the file **temp.dat**

6. After all the records have been read it will close both the files .

7. Then if **found** is **0** , the function will just **remove** the file **temp.dat** , otherwise if **found** is **1** then it will **remove** the file **allbookings.dat** and **rename** the file **temp.dat** to **allbookings.dat**.

8. Finally it will **return** the value of **found**

Following is it's code:

***int cancel\_train(char \*ptrain\_no)***

***{***

***FILE \*fp1=fopen("d:\\myproject\\allbookings.dat","rb+");***

***if(fp1==NULL)***

***{***

***textcolor(LIGHTRED);***

***printf("\nNo bookings done yet");***

***return -1;***

***}***

***FILE \*fp2=fopen("d:\\myproject\\temp.dat","wb+");***

***Passenger pr;***

***int found=0;***

***while(fread(&pr,sizeof(pr),1,fp1)==1)***

***{***

***if(strcmp(pr.train\_no,ptrain\_no)!=0)***

***{***

***fwrite(&pr,sizeof(pr),1,fp2);***

***}***

***else***

***{***

***found=1;***

***}***

***}***

***fclose(fp1);***

***fclose(fp2);***

***if(found==0)***

***{***

***remove("d:\\myproject\\temp.dat");***

***}***

***else***

***{***

***remove("d:\\myproject\\allbookings.dat");***

***rename("d:\\myproject\\temp.dat","d:\\myproject\\allbookings.dat");***

***}***

***return found;***

***}***

**UPDATING THE "main()" FUNCTION**

Now finally to get this module working we will have to change the **main()** function’s

**case 8:** in **switch** statement.

Here are the steps to be done in the function **main()**:

1. Call the on **accept\_train\_no()** function
2. Check whether the value returned by this function is **NULL** or not
3. If it is not **NULL** , then call the function **cancel\_train( )** and check the value returned by this function

i) If it is **0**,then print the message “**Sorry! No tickets booked in the train number <train number> ”**

ii) If it is **1** , then print the message **“Train no <train number>successfully cancelled"**

Here is the code for switch statement **case 7:** in **main()**:

***case 8:***

***clrscr();***

***ptrain\_no=accept\_train\_no();***

***if(ptrain\_no!=NULL)***

***{***

***result=cancel\_train(ptrain\_no);***

***if(result==0)***

***{***

***textcolor(LIGHTRED);***

***printf("Sorry! No tickets booked in train no no %s",ptrain\_no);***

***}***

***else***

***{***

***textcolor(LIGHTGREEN);***

***printf("Train no %s successfully cancelled!",ptrain\_no);***

***}***

***textcolor(WHITE);***

***printf("\n\nPress any key to go back to the main screen");***

***}***

***getch();***

***clrscr();***

***break;***