Ankita Panpatil

Project No.1
Periodic table using C programming

The main **functions used** in designing the Modern Periodic Table project are:

- void add(): This function is used to input or add the information of new element to the program.
- void explor(): This function is used to explore the stored information in the file created.
- void mainscreen(): It is included in source code of project file in order to print the text style and to control its color.
- void mainscreen(): This function is used to print the main screen or menu of the project.

The key **features** of Modern Periodic Table mini project in C are briefly described below:

- **Storage of Element Information:** In the project, you can add any new element with its name, symbol, atomic number, atomic weight and its some important properties. When new element information is to be added to this Modern Periodic Table, you have to enter 1 in the main menu and input information in given format. These information are stored in file created on the hard disk of computer by program itself.

- **Exploration of element Information:** Another main function of this project is to explore or to display the stored information. You can search an element by using any of the following method:
1. By name of element
2. By symbol of element
3. By atomic number of element
4. By atomic weight of element

- If you press 3 in the main menu, the program will be terminated.

Code –

```c
#include<stdio.h>
#include<conio.h>
#include<string.h>
#include<stdlib.h>
struct element{
char name[20];
char sb[5];
int atm;
float atms;
char block;
char atc[20];
char prop[250];
}p,q;
int rw,cl;
FILE*fp;
void add();
void explor();
void print();
void mainscreen();
void main()
{
int a,i,n,y;
char c,d;
char date1[15],date2[15],string1[20];
unsigned int tsz;

clrscr();
mainscreen();
label1:
textcolor(15);
gotoxy(22,15);textcolor(14);
cprintf("Enter the corresponding no");gotoxy(22,19);textcolor(10);
cprintf("1.Add new Element Information");gotoxy(22,21);
cprintf("2.Explore");gotoxy(22,23);
cprintf("3.Quit");gotoxy(22,25);
//      cprintf("4.Delete the records");gotoxy(22,27);
//      cprintf("5.Exit from the program");gotoxy(25,30);
fflush(stdin);
d=getch();

switch(d)
{
case '1':
{
add();
//      getch();

//      print();
```

```
//      getch();
break;
}
case '2':
{
explor();
break;

}
case '3':
{
clrscr();
mainscreen();
textcolor(14); gotoxy(30,24);
cprintf("THANK U");gotoxy(30,26);
//      cprintf("SAVING UR SETTINGS"); gotoxy(30,28);
cprintf("BYE...........");
getch();
exit(1);
break;
}

default:
{
clrscr();
mainscreen();
textcolor(12+128);gotoxy(22,11);
cprintf("Wrong choice");gotoxy(22,13);textcolor(15);
cprintf("Retype choice");
goto label1;

}

}

clrscr();

mainscreen();

goto label1;

}

void mainscreen()

{

int i,j;

clrscr();

for(i=2,j=2;i<rw;j++)
```

```
{
if(j>15)
j=2;
textcolor(j);
gotoxy(i,2);
cprintf("%c",'*');
gotoxy(i,cl-1);
cprintf("%c",'*');
i++;
}
for(i=2,j=2;i<cl;i++,j++)
{
if(j>15)
j=2;
textcolor(j);
gotoxy(2,i);
cprintf("%c",'*');
gotoxy(rw-1,i);
cprintf("%c",'*');

}
gotoxy(30,4);textcolor(3);
cprintf("Modern Periodic Table");
gotoxy(37,6);textcolor(6);
cprintf("Digital");
gotoxy(35,7); textcolor(15);
cprintf("-----------");
}

void add()

{

char ch;

label1:

clrscr();

mainscreen();

gotoxy(15,14);textcolor(10);

cprintf("Enter the Information of Elements:");

//      printf(" %d",l);

gotoxy(15,16);

cprintf("Name:");

gotoxy(15,18);

cprintf("Symbol:");
```

```
gotoxy(15,20);

cprintf("Atomic No: ");

gotoxy(15,22);

cprintf("Atomic Wt: ");

gotoxy(15,24);

cprintf("Atomic Config:");

gotoxy(15,26);

cprintf("Block:");

gotoxy(15,28);

cprintf("Properties:");

textcolor(15);

fflush(stdin);

gotoxy(20,16);

scanf("%[^\n]",p.name);

p.name[0]=toupper(p.name[0]);

fflush(stdin);

gotoxy(23,18);

scanf("%[^\n]",p.sb);

p.sb[0]=toupper(p.sb[0]);

fflush(stdin);

gotoxy(25,20);

scanf("%d",&p.atm);

fflush(stdin);

gotoxy(25,22);

scanf("%f",&p.atms);

fflush(stdin);

gotoxy(29,24);

scanf("%[^\n]",p.atc);
```

```
fflush(stdin);

gotoxy(21,26);

scanf("%c",&p.block);

p.block=toupper(p.block);

if(p.block!='S'&&p.block!='P'&&p.block!='D'&&p.block!='F')

p.block=' ';

fflush(stdin);

gotoxy(26,28);

scanf("%[^\n]",p.prop);

p.prop[0]=toupper(p.prop[0]);

/*      gotoxy(9,30);

cprintf("(In Short)");

gotoxy(5,33);

cprintf("Reff. Specialist no:");     */

if((fp=fopen("data","ab+"))==NULL)

{

printf("Cannot open the file f1");

getch();

exit(1);

}

fwrite(&p,sizeof(p),1,fp);

fclose(fp);

printf("\n\n\n\t\tEnter 'y' for next record(y/n):");

ch=getch();

if(ch=='y')

{

goto label1;

}
```

```
//      getch();
}
void explor()
{
char d,c;
FILE *f;
int given_atmic_no,a,i,tsz,n;
float given_atmic_mass;
int flag;
char string[20];
startofexplore:
clrscr();
mainscreen();
label6:
gotoxy(22,15);textcolor(12);
cprintf("Enter the corresponding no");gotoxy(22,19);textcolor(3);
cprintf("1.Search by 'NAME'");gotoxy(22,21);
cprintf("2.Search by SYMBOL");gotoxy(22,23);
cprintf("3.Search by ATOMIC NUMBER");gotoxy(22,25);
cprintf("4.Search by ATOMIC WEIGHT");gotoxy(22,27);
cprintf("5.Elements of Diff. Blocks");gotoxy(22,29);
cprintf("6.Return to main menu");
gotoxy(25,32);
fflush(stdin);
d=getch();
switch(d)
{
case '1':
{
```

```
clrscr();

mainscreen();

gotoxy(15,25);

textcolor(12);

cprintf("Enter the Name of Element:");

textcolor(3);

fflush(stdin);

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

printf("%s",string);

string[0]=toupper(string[0]);

if((fp=fopen("data","rb+"))==NULL)

{

clrscr();

printf("\n cannot open the record file 1");

getch();

exit(1);

}

flag=1;

while(fread(&p,sizeof(p),1,fp))

{

if(strcmp(p.name,string)==0)

{

print();

flag=0;

break;

}

}

if(flag==1)

{
```

```
clrscr();

mainscreen();

gotoxy(25,25);

textcolor(12);

cprintf("::No Element Available::");

}

fclose(fp);

getch();

break;

}

case '2':

{

clrscr();

mainscreen();

gotoxy(22,15);

textcolor(12);

cprintf("Enter the symbol:");

textcolor(3);

fflush(stdin);

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

printf("%s",string);

string[0]=toupper(string[0]);

if((fp=fopen("data","rb+"))==NULL)

{

clrscr();

printf("\n cannot open the record file 1");

getch();

exit(1);

}
```

```
flag=1;

while(fread(&p,sizeof(p),1,fp))

{

if(strcmp(p.sb,string)==0)

{

print();

flag=0;

break;

}

}

if(flag==1)

{

clrscr();

mainscreen();

gotoxy(25,25);

textcolor(12);

cprintf("::No Element Available::");

}

fclose(fp);

getch();

break;

}

case '6':

{

return;

}

case '3':

{

clrscr();
```

```
mainscreen();

gotoxy(15,25);

textcolor(12);

cprintf("Enter the Atomic No. Element:");

textcolor(3);

fflush(stdin);

scanf("%d",&given_atmic_no);

if((fp=fopen("data","rb+"))==NULL)

{

clrscr();

printf("\n cannot open the record file 1");

getch();

exit(1);

}

flag=1;

while(fread(&p,sizeof(p),1,fp))

{

if(p.atm==given_atmic_no)

{

print();

flag=0;

break;

}

}

if(flag==1)

{

clrscr();

mainscreen();

gotoxy(25,25);
```

```
textcolor(12);

cprintf("::No Element Available::");

}

fclose(fp);

getch();

break;

}

case '4':

{

clrscr();

mainscreen();

gotoxy(15,22);

textcolor(12);

cprintf("Enter the Atomic mass of Element:");

textcolor(3);

fflush(stdin);

scanf("%f",&given_atmic_mass);

if((fp=fopen("data","rb+"))==NULL)

{

clrscr();

printf("\n cannot open the record file 1");

getch();

exit(1);

}

flag=1;

while(fread(&p,sizeof(p),1,fp))

{

if(p.atms==given_atmic_mass)

{
```

```
print();

flag=0;

break;

}

}

if(flag==1)

{

clrscr();

mainscreen();

gotoxy(25,25);

textcolor(12);

cprintf("::No Element Available::");

}

fclose(fp);

getch();

break;

}

case '5':

{

clrscr();

mainscreen();

gotoxy(15,25);

textcolor(12);

cprintf("Enter the Block:");

textcolor(3);

fflush(stdin);

scanf("%c",&c);

c=toupper(c);

if((f=fopen("temp","wb+"))==NULL)
```

```c
{
clrscr();
printf("\n cannot open the temp file 1");
getch();
exit(1);
}
if((fp=fopen("data","rb+"))==NULL)
{
clrscr();
printf("\n cannot open the record file 1");
getch();
exit(1);
}
flag=1;
while(fread(&p,sizeof(p),1,fp))
{
if(p.block==c)
{
fwrite(&p,sizeof(p),1,f);
}
}
fclose(f);
fclose(fp);
if((f=fopen("temp","rb+"))==NULL)
{
printf("Cannot open the file");
getch();
exit(1);
}
```

```
fseek(f,0,SEEK_END);

tsz=ftell(f);

n=(int)(tsz/sizeof(p));

for(i=0;i<(n-1);i++)

{

for(a=i+1;a<n;a++)

{

fseek(f,i*sizeof(p),SEEK_SET);

fread(&p,sizeof(p),1,f);

fseek(f,a*sizeof(p),SEEK_SET);

fread(&q,sizeof(p),1,f);

if((p.atm-q.atm)>0)

{

fseek(f,i*sizeof(p),SEEK_SET);

fwrite(&q,sizeof(p),1,f);

fseek(f,a*sizeof(p),SEEK_SET); fflush(stdin);

fwrite(&p,sizeof(p),1,fp);

}

}

}

rewind(f);

while(fread(&p,sizeof(p),1,f))

{

print();

getch();

}

clrscr();

mainscreen();

gotoxy(25,25);
```

```
textcolor(12);

cprintf("::No Element Available::");

fclose(f);

getch();

break;

}

default:

{

clrscr();

mainscreen();

textcolor(12+128);gotoxy(22,11);

cprintf("Wrong choice");gotoxy(22,13);textcolor(15);

cprintf("Retype choice");

goto label6;

}

}

goto startofexplore;

}

void print()

{

clrscr();

mainscreen();

gotoxy(15,16);

cprintf("Name:");

gotoxy(15,18);

cprintf("Symbol:");

gotoxy(15,20);

cprintf("Atomic No: ");
```

```
gotoxy(15,22);

cprintf("Atomic Wt: ");

gotoxy(15,24);

cprintf("Atomic Config:");

fflush(stdin);

gotoxy(15,26);

cprintf("Block:");

gotoxy(15,28);

cprintf("Properties:");

textcolor(6);

gotoxy(20,16);

cprintf("%s",p.name);

gotoxy(23,18);

cprintf("%s",p.sb);

fflush(stdin);

gotoxy(25,20);

cprintf("%d",p.atm);

fflush(stdin);

gotoxy(25,22);

cprintf("%f",p.atms);

fflush(stdin);

gotoxy(29,24);

cprintf("%s",p.atc);

gotoxy(21,26);

cprintf("%c",p.block);

gotoxy(26,28);

cprintf("%s",p.prop);

}
```

Output –

```
        Modern Periodic Table
                Digital
              ------------




    Enter the corresponding no



    1.Add new Element Information

    2.Explore

    3.Quit
```

```
              Modern Periodic Table
                      Digital
                    ------------




       Enter the Information of Elements:

       Name:Lithium

       Symbol: Li

       Atomic No:3

       Atomic Wt:5.941

       Atomic Config:slock:Properties:
```

```
                    Modern Periodic Table

                         Digital
                      ------------




             Enter the corresponding no



             1.Search by 'NAME'

             2.Search by SYMBOL

             3.Search by ATOMIC NUMBER          Activate Windows
                                                Go to Settings to activate Windows.
             4.Search by ATOMIC WEIGHT5.Elements of Diff. Blocks6.Return
  to main menu_
```

```
                    Modern Periodic Table

                         Digital
                      ------------




                    Enter the symbol:Li_
```

C Programming Project