Calendar_application_302301

🕐 7/11/2021 -9:39:43 AM

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default branch

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3_IMPLEMENTATION/SRC/CALENDAR.C

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```c
1    #include<stdio.h>
2    #include<conio.h>
3    #include<windows.h>
4
5    int getkey();
6    void display(int,int,int,int[]);
7    void calendar(int,int);
8
9    //-------------- GOTO function definition ---------------------
10   void gotoxy(int x,int y)
11   {
12       COORD coord;
13       coord.X=x;
14       coord.Y=y;
15       SetConsoleCursorPosition(GetStdHandle(STD_OUTPUT_HANDLE),coord);
16   }
17
18   //------------ Change color -------------------
19   void SetColor(int ForgC)
20   {
21       WORD wColor;
22                     //We will need this handle to get the current background attribute
23       HANDLE hStdOut = GetStdHandle(STD_OUTPUT_HANDLE);
24       CONSOLE_SCREEN_BUFFER_INFO csbi;
25
26                     //We use csbi for the wAttributes word.
27       if(GetConsoleScreenBufferInfo(hStdOut, &csbi))
28       {
29               //Mask out all but the background attribute, and add in the forgournd color
30           wColor = (csbi.wAttributes & 0xF0) + (ForgC & 0x0F);
31           SetConsoleTextAttribute(hStdOut, wColor);
32       }
33       return;
34   }
35
36
37   char *month[]=
     {"January","February","March","April","May","June","July","August","September","October","November","December"};
38   char *week[]={"Mon","Tue","Wed","Thu","Fri","Sat","Sun"};
39
40   int main()
```

Function is too long

Functions length: 89 lines

Function is too long, which makes it hard to read, understand and maintain. Consider reducing the size of the function.

```c
41   {
42       int nmonth,nyr,ch;
43       enteryear:
44       while(1)
45       {
46           printf("Enter year and month(number):" );
47           scanf("%d%d",&nyr,&nmonth);
48           if(nyr<1945)
49           {
```

```
53          }
54      else
55      {
56          //If year greater than equal to 1945
57          calendar(nyr,nmonth);
58      }
59      while(1)
60      {
61      gotoxy(20,20);printf("(*) Use LEFT, RIGHT, UP and DOWN arrow.");
62      gotoxy(20,22);printf("(*) Press P to go to particular year and month.");
63      gotoxy(20,24);printf("(*) Press ESC to Exit.");
64      ch=getkey();
65      switch(ch)
66      {
67      case 80: //-------- DOWN ARROW -----------
68              //Increasing month
69              if(nmonth==12)
70              {
71                  //Jump to next year if month is december
72                  nmonth=1;
73                  nyr++;
74              }
75              else
76              {
77                  nmonth++;
78              }
79              calendar(nyr,nmonth);
80              break;
81      case 77: //-------- RIGHT ARROW ----------
82              //Increasing Year
83              nyr++;
84              calendar(nyr,nmonth);
85              break;
86      case 72: //------- UP ARROW -------------
87              // Decreasing Month
88              if(nmonth==1)
89              {
90                  // Jump to previous year if month is january
91                  nyr--;
92                  nmonth=12;
93              }
94              else
95                  nmonth--;
96              calendar(nyr,nmonth);
97              break;
98      case 75: //-------- LEFT ARROW ----------
99              //Decreasing year
100             if(nyr==1945)
101             {
102                 //If year is 1945 and we click left arrow than
103                 gotoxy(15,2);printf("Year below 1945 not available");
104             }
105             else
106             {
107                 nyr--;
108                 calendar(nyr,nmonth);
109             }
110
111             break;
112     case 27: //--------- ESC KEY ------------
113             //Exit program
114             system("cls");
```

```
115            gotoxy(50,14);printf("Exiting program.\n\n\n\n\n");
116            exit(0);
117        case 112://---------- p KEY ------------
118          //Go to particular year and month
119            system("cls");
```

```
120            goto enteryear;
121      }
122      }
123      break;
124
125    }
126    getch();
127    return 0;
128 }
129
130
131 //============== DISPLAYING THE  CALENDAR ==================
132 void display(int nyr,int nmonth,int tdays,int days[])
```

Function is too long

Functions length: 76 lines

Function is too long, which makes it hard to read, understand and maintain. Consider reducing the size of the function.

```
133 {
134    int i,j,pos;
135    SetColor(12); //Color red
136    gotoxy(56,6);printf("%s %d",month[nmonth-1],nyr); //Heading year and month dispalying
137    for(i=0,pos=30;i<7;i++,pos+=10)
138    {
139        if(i==6)
140            SetColor(9); //Sunday color blue
141        else
142            SetColor(10);  //Others day color green
143        gotoxy(pos,8);printf("%s",week[i]);
144    }
145
146    SetColor(15); //setting the color white
147
148   tdays++; //incrementing the tdays by 1
149    if(tdays==0 || tdays==7)
150        pos=91; //if tdays is 0 or 7, position is sunday
151    if(tdays==1)
152        pos=31; //if tdays is 1, position is monday
153    if(tdays==2)
154        pos=41;  //if tdays is 2, position is tuesday
155    if(tdays==3)
156        pos=51;  //if tdays is 3, position is wednesday
157    if(tdays==4)
158        pos=61;  //if tdays is 4, position is thursday
159    if(tdays==5)
160        pos=71;  //if tdays is 5, position is friday
161    if(tdays==6)
162        pos=81;  //if tdays is 6, position is saturday
163
164    for(i=0,j=10,pos;i<days[nmonth-1];i++,pos+=10)
165    {
```

```
169              SetColor(7); //Changing color to white for all days
170
171          gotoxy(pos,j);printf("%d",i+1);
172          if(pos==91)
173          {
174              pos=21; //Moving position to monday
175              j++;  //Increasing j by 10 if position is sunday
176          }
177      }
178
179      SetColor(5); //Changing color to purple
180
181      //Drawing horizontal line
182      for(i=22;i<102;i++)
183      {
184          gotoxy(i,4);printf("%c",196);
185          gotoxy(i,17);printf("%c",196);
186      }
187
188      //Drawing all the corner of the rectangle
189      gotoxy(21,4);printf("%c",218);
190      gotoxy(102,4);printf("%c",191);
191      gotoxy(21,17);printf("%c",192);
192      gotoxy(102,17);printf("%c",217);
193
194      //Drawing vertical line
195      for(i=5;i<17;i++)
196      {
197          gotoxy(21,i);printf("%c",179);
198          gotoxy(102,i);printf("%c",179);
199      }
200
201      SetColor(11); //Changing color to aqua
202
203      //Drawing left and the right navigation symbol
204      gotoxy(24,11);printf("%c",174);
205      gotoxy(98,11);printf("%c",175);
206
207 }
208
209 //==============   ARROW KEY ===============
210 int getkey()
211 {
212      int ch;
213      ch=getch();
214       if(ch==0)
215      {
216          printf("zero");
217          ch=getch();
218
219          return ch;
220      }
221      return ch;
222 }
223
224 //============ Calculating ====================
225 void calendar(int nyr,int nmonth)
226 {
227      int days[12]={31,28,31,30,31,30,31,31,30,31,30,31};
228      int tdays=0,k,myear;
229      system("cls");
```

```
230        myear=nyr-1; //Decreasing year by 1
231             if(myear>=1945)
232             {
233                 for(k=1945;k<=myear;k++)
234                 {
235                     if(k%4==0) //If the year is a leap year than total no of days is 366
236                         tdays=tdays+366;  //counting all the days till nyr - 1
237                     else //If the year is a leap year than total no of days is 365
238                         tdays=tdays+365;  //counting all the days till nyr - 1
239                 }
240             }
241
242             if(nyr%4==0)
243                 days[1]=29; //changing value in days array from 28 to 29 since leap year
244             else
245                 days[1]=28; //changing value in days array from 29 to 28 since not a leap year
246
247             for(k=0;k<(nmonth-1);k++)
248             {
249
250                 tdays=tdays+days[k]; //Adding nmonth-1 days to tdays
251             }
252
253             tdays=tdays%7; //Finding the remainder of tdays so it can calculate the position to display
254             display(nyr,nmonth,tdays,days); //Passing the value to display
255 }
```