EXPERIMENT

COMPUTER GRAPICS AND MULTIMEDIA

Aim

To Write a program in C for a digital clock.

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EXPERIMENT

AIM:

Creating a Digital Clock using graphics in C Program.

Theory:

initwindow

int initwindow(int width, int height, const char* title="Windows BGI", int left=0, int top=0, bool dbflag=false, closeflag=true);

The function initializes the graphics system by opening a graphics window of the specified size. The first two parameters (width and height) are required, but all other parameters have default values.

closegraph

#include <graphics.h>

void closegraph(int wid=ALL_WINDOWS);

closegraph deallocates all memory allocated by the graphics system, then restores the screen to the mode it was in before you called initgraph. (The graphics system deallocates memory, such as the drivers, fonts, and an internal buffer, through a call to _graphfreemem.)

void setcolor(int color);

It is use to assign a color to graphics. In Graphics, each color is assigned a number. Total number of colors available are 16. Number of available colors depends on current graphics mode and driver. For example, setcolor(RED) or setcolor(4) changes the current drawing color to RED. Remember that default drawing color is WHITE.

OUTTEXTXY

In the Graphics mode, if a function is given to print any string that is done using outtextxy.

Prototype:

outtextxy (int x , int y , "Text");

x and y denote the current position and it is in pixel form.

SETTEXTSTYLE

The function setstextstyle() is used to set these three attributes of any text.

Prototype:

settextstyle(int font , int direction , int charsize);

settextstyle sets font, direction and char size of the text.

time.h

The time.h header file contains definitions of functions to get and manipulate date and time information.

It describes three time related datatypes.

clock_t: clock_t represents the date as integer which is a part of the calendar time.

time_t: time_t represents the clock time as integer which is a part of the calendar time.

struct tm: struct tm holds the date and time which contains int tm_sec; int tm_min; int tm_hour; int tm_mday; int tm_mon; int tm_year; int tm_wday; int tm_yday; int tm_isdst;

time() This function returns the calendar-time equivalent using data-type time_t.

strftime() This function helps to format the string returned by other time functions using different format specifiers.

Delay():

delay function is used to suspend execution of a program for a particular time.

void delay(unsigned int);

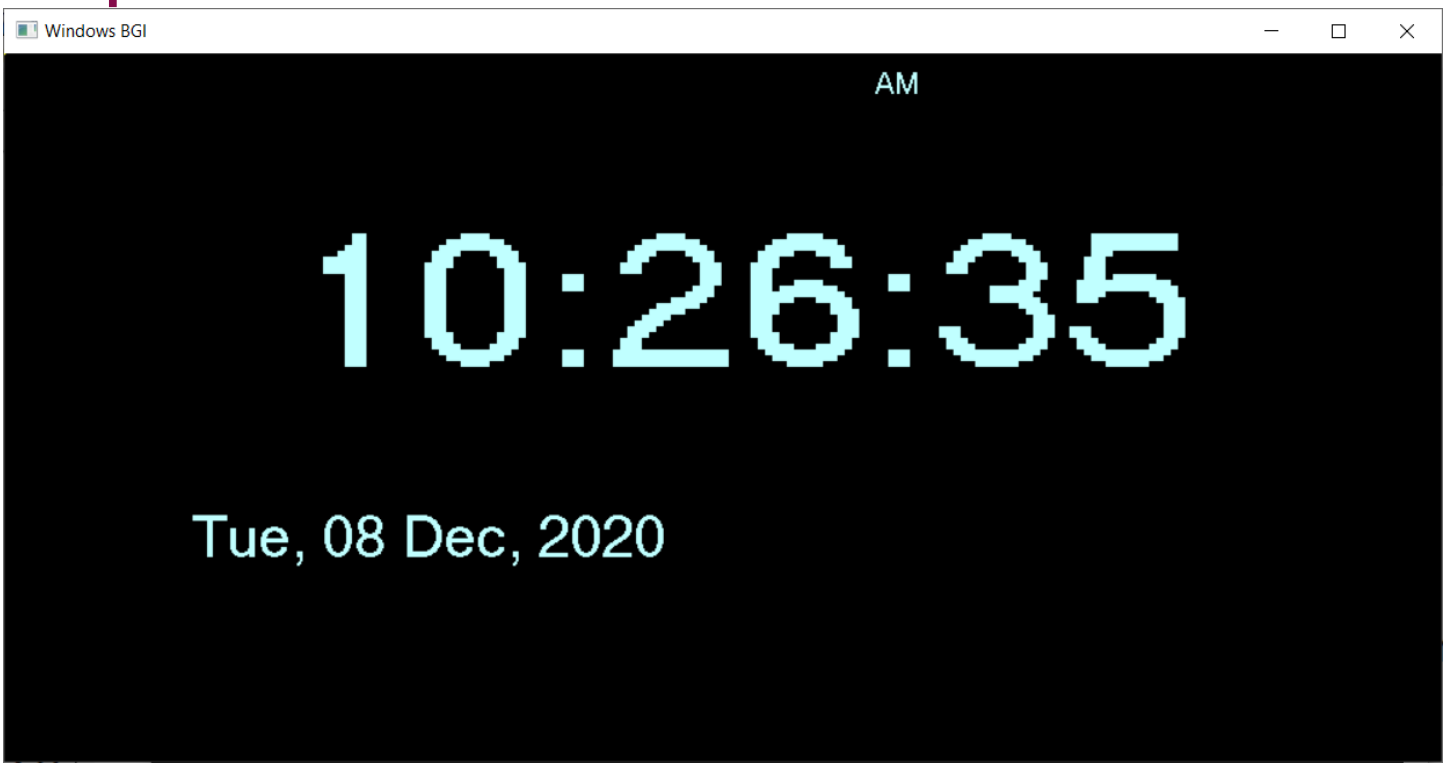
Digital Clock

Source Code:

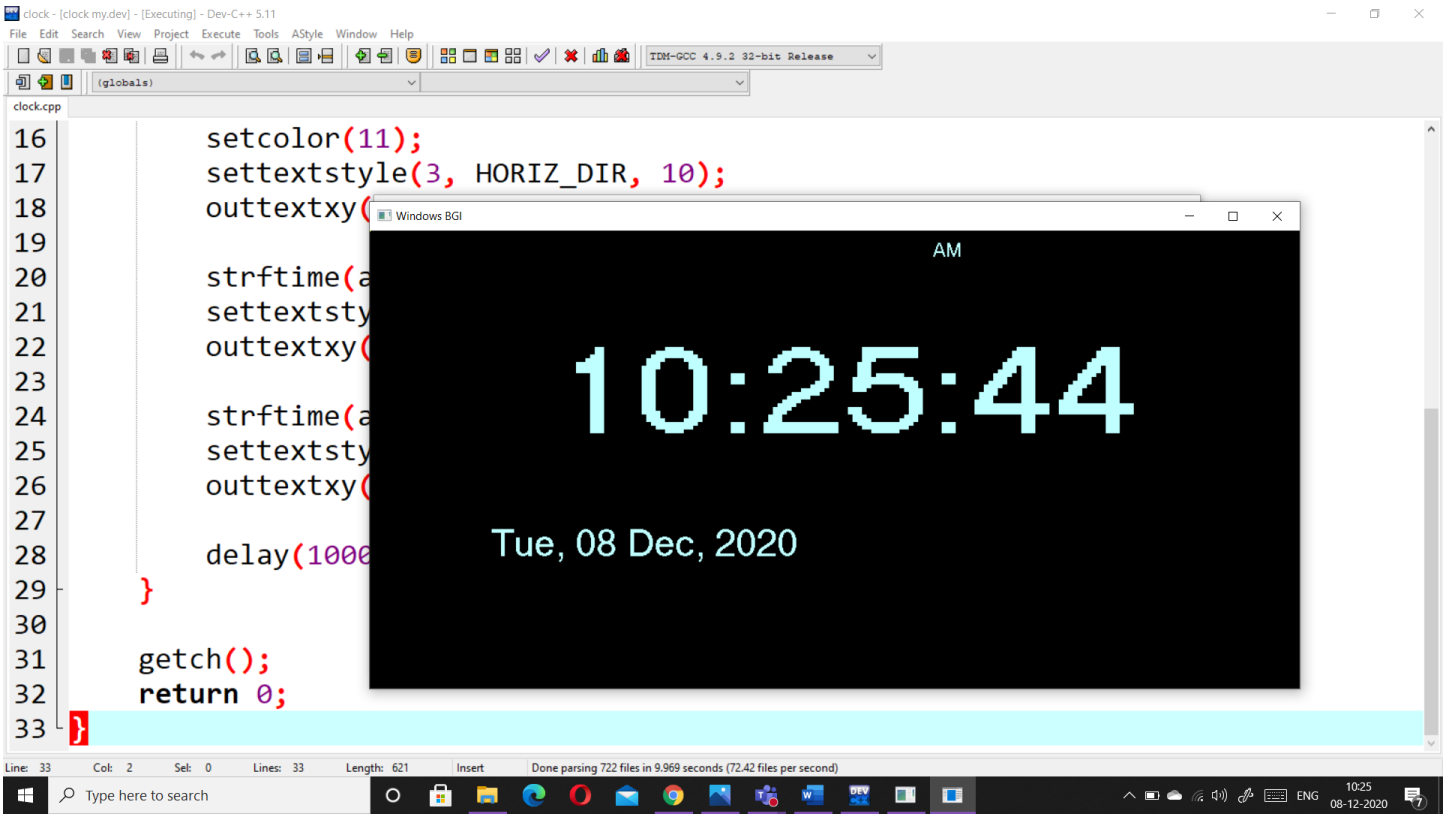
```
#include<graphics.h>
#include <time.h>

int main(){
	initwindow(1000, 500);

	time_t rawTime;
	struct tm * currentTime;
	char a[100];

	while(1) {
		rawTime = time(NULL);
		currentTime = localtime(&rawTime);
		strftime(a, 100, "%I:%M:%S", currentTime);

		setcolor(11);
		settextstyle(3, HORIZ_DIR, 10);
		outtextxy(200, 100, a);

		strftime(a, 100, "%p", currentTime);
		settextstyle(3, HORIZ_DIR, 2);
		outtextxy(600, 8, a);
```

```
            strftime(a, 100, "%a, %d %b, %Y", currentTime);
            settextstyle(3, HORIZ_DIR, 5);
            outtextxy(130, 310, a);

            delay(1000);
        }

        getch();
        return 0;
}
```

Output:




Windows BGI
AM
10:25:33
Tue, 08 Dec, 2020
delay(1000);
}
getch();
return 0;
}
Line: 33 Col: 2 Sel: 0 Lines: 33 Length: 621 Insert Done parsing 722 files in 9.969 seconds (72.42 files per second)
Type here to search
ENG
10:25
08-12-2020


clock - [clock my.dev] - [Executing] - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
TDM-GCC 4.9.2 32-bit Release
(globals)
clock.cpp
setcolor(11);
settextstyle(3, HORIZ_DIR, 10);
outtextxy(
strftime(a
settextsty
outtextxy(
strftime(a
settextsty
outtextxy(
delay(1000
}
getch();
return 0;
}
Windows BGI
AM
10:25:44
Tue, 08 Dec, 2020
Line: 33 Col: 2 Sel: 0 Lines: 33 Length: 621 Insert Done parsing 722 files in 9.969 seconds (72.42 files per second)
Type here to search
ENG
10:25
08-12-2020