

ANALOG CLOCK

A report submitted in partial fulfilment of requirements of the Mini Project of

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By

S.No	Name of the Student	Sec	R.No	Id.No
1	P.Tejaswi	B	17	12003072
2	G.Balaram	B	48	12003381
3	Ch.Durga Manohar Reddy	B	15	12003056
4	V.Sanjay	B	46	12003360

Under the Guidance of

K.Ruth Ramya (Asst.Prof)

MS.Shahana Bano(Asst.Prof)



Department of Computer Science and Engineering

KLUniversity, Vaddeswaram, Guntur Dt. (2013-14)

KL University

Department of CSE



Certificate

This is to certify that the project work entitled “**Analog Clock**” being submitted to the department of Computer Science and Engineering (CSE), KLUniversity by P.Tejaswi (12003072), G.Balaram (12003381), Ch.Durga Manohar Reddy (12003056), V.Sanjay (12003360) in partial fulfilment for the Mini Project, is a bonafide work carried out by them under my supervision.

K.Ruth Ramya

Guide

Ms.Shahana Bano

Lab Incharge

Dr V.Srikanth

HOD

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P.Tejaswi (12003072)

G.Balaram (12003381)

Ch.Durga Manohar Reddy (12003056)

V.Sanjay (12003360)

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ABSTRACT

Analog Clock is used to indicate time using angles. We are using c-programming language to develop this program. We are using turboc to code the program and the Graphical user interface is used. This program displays a simple analog clock to show the current system time and the time is shown using hour, minute and seconds hand using some built in functions. The 'hands' are just straight lines and two circles make the 'frame' of the clock. First the circle is drawn then the clock hands. This source code provides an overview of the technology, describes its benefits and limitations, and takes a look at some applications-watches, mobiles, computers etc

Introduction

Clocks are in homes, offices and many other places; smaller ones (watches) are carried on the wrist or in a pockets; larger ones are in public places, e.g. a railway station or church. A small clock is often shown in the corner of the computer displays, mobile phones and many MP3 players

Our project is Analog clock which depict a wall clock which is completely satisfied completely satisfied i.e., it shows time in the form of hours, minutes and seconds while we run the program not only that we can hear the hand movement sound of hour, minute and second hands i.e., tick tick sound done by a clock and there will be two clock of this type in which one show the system time and the other show the time of the other country as per the choice. Both clocks are similar in looking but different in time

SCOPE

The scope of the analog clock project is that a person should be able to know the exact time of the system in the form of hours, minutes and seconds and also should be able to know the other country time of his choice in the given list in the form of hours, minutes and seconds and should be able to know the time difference between the two times

Software and Hardware Requirements

Hardware Requirements:

RAM: 4GB minimum requirement: 1 GB

Processor: AMD A8-4500APU with HD graphics

OS: windows 7 professional

Software Requirements:

User Interface:Turboc30 version of c++ programming

Brief Description

Header Files:

1. **graphics.h:**

- C graphics using graphics.h functions can be used to draw different shapes, display text in different fonts, change colors and many more.
- Using functions of graphics.h in turbo c compiler you can make graphics programs, animations, projects and games. You can draw circles, lines, rectangles, bars and many other geometrical figures.
- You can change their colors using the available functions and fill them.

2. **stdio.h** (Standard Input/output header file)

- It is header file in C's standard library which contains constants, macros definitions and declarations of functions. It includes types used for various standard input [scanf, gets] and output operations [printf, putc]

3. **conio.h** (Console Input/output)

- The most commonly used functions of conio.h are clrscr, getch, getche, kbhit etc. Functions of conio.h can be used to clear screen, change color of text and background, move text, check if a key is pressed or not and many more. conio.h file is provided by borland turbo c compiler and gcc compiler doesn't support it

4. **math.h**

- math.h is a header file which is commonly used for mathematical operations like square root, power.

5. **dos.h**

- dos.h in c: dos.h header file of c language contains functions for handling interrupts, producing sound, date and time functions etc. It is borland specific and works in turbo c compiler.

6. **Process.h**

Contains structures and declarations for the spawn and exec functions

7. **string.h**

Declared several string and memory manipulation routines

Project consists of two modules:

1. Designing a clock
2. Animation

1. DESIGNING A CLOCK:

In order to design a clock we use some predefined functions existing in computer graphics.

- To get a clock we use circle function
Syntax: void circle (xcentre,ycentre,radius);
- To represent hours,minutes and seconds hand we use line function
Syntax: void line (int x1, int y1, int x2, int y2);

2. ANIMATION:

Animation can be done by using several functions which involved in computer graphics in turbo c compiler. They are...

- **FLOODFILL:**

Syntax: flood fill (int x,int y,int border);

This function is used to fill the shapes with colour to give good look for animation.

- **SETCOLOR:**

Syntax: setcolor (int color);

This function is used to set colour of the shape by giving the code of the colour desired to the shape in designs.

- **DELAY:**

Syntax: void delay (unsigned int);

Delay function is a predefined function in computer graphics which is used to the motion of a clock.

- **SETFILLSTYLE:**

Syntax: void setfillstyle(int pattern, int color);

setfillstyle function sets the current fill pattern and fill color.

- **OUTTEXTXY:**

Syntax: void far outtextxy(int x,int y,char*farstring);

Outtextxy displays a string at a specified location(graphics mode)

- **Kbhit:**

Syntax: int kbhit(void);

This function is not defined as part of the ANSI C/C++ standard. It is generally used by Borland's family of compilers. It returns a non-zero integer if a key is in the keyboard buffer. It will not wait for a key to be pressed.

- **Initgraph**

Syntax: initgraph(&gd,&gm,“ ”)

Initgraph initializes the graph by loading the graphics driver from disk then putting the system into graphics mode. It also resets all the graphic functions.

- **Cleardevice**

Syntax: cleardevice()

cleardevice erases the entire graphics seen and moves the current position to (0,0)

- **Setbkcolor**

Syntax: setbkcolor(int color)

setbkcolor changes the current background color of screen to the specified color

Source Code

```
#include<stdio.h>

#include<process.h>

#include<dos.h>

#include<graphics.h>

#include<conio.h>

#include<math.h>

#include<string.h>

void draw()
{
    setbkcolor(0);setlinestyle(0,0,0);

    setcolor(9);

    circle(120,240,3);circle(520,240,3);setcolor(2);

    setfillstyle(SOLID_FILL,5);

    circle(120,240,80);circle(120,240,95);

    circle(520,240,80);circle(520,240,95);

    floodfill(114,150,2);floodfill(514,150,2);

    settextstyle(2,0,5);setcolor(14);

    outtextxy(114,166,"12");outtextxy(514,166,"12");

    outtextxy(152,173,"1");outtextxy(552,173,"1");

    outtextxy(179,199,"2");outtextxy(579,199,"2");

    outtextxy(184,231,"3");outtextxy(588,230,"3");

    outtextxy(49,230,"9");outtextxy(449,230,"9");

    outtextxy(116,301,"6");outtextxy(516,301,"6");

    outtextxy(176,270,"4");outtextxy(576,270,"4");
```

```
    outtextxy(59,266,"8");outtextxy(459,266,"8");  
    outtextxy(54,202,"10");outtextxy(454,202,"10");  
    outtextxy(77,177,"11");outtextxy(477,177,"11");  
    outtextxy(152,296,"5");outtextxy(552,296,"5");  
    outtextxy(85,295,"7");outtextxy(485,295,"7");  
}  
void main()  
{  
    int gd=0,gm;  
    int ch,m=0,h=0;  
    char city[30];  
    printf("\n1\tBangkok");  
    printf("\n2\tSingapore");  
    printf("\n3\tBeijing");  
    printf("\n4\tTokyo");  
    printf("\n5\tMelbourne");  
    printf("\n6\tSydney");  
    printf("\n7\tSanFransico");  
    printf("\n8\tLosAngeles");  
    printf("\n9\tChicago");  
    printf("\n10\tNewYork");  
    printf("\n11\tLondon");  
    printf("\n12\tParis");  
    printf("\nEnter your choice");  
    scanf("%d",&ch);
```

```
switch(ch)
{
    case 1:
    {
        m=30;h=2;
        strcpy(city,"Bangkok time");
        break;
    }
    case 2:
    {
        m=30;h=3;
        strcpy(city,"Singapore time");
        break;
    }
    case 3:
    {
        m=30;h=3;
        strcpy(city,"Beijing time");
        break;
    }
    case 4:
    {
        m=30;h=4;
        strcpy(city,"Tokyo time");
        break;
    }
}
```

```
}  
case 5:  
{  
    m=0;h=5;  
    strcpy(city,"Melbourne time");  
    gotoxy(2,4);  
    break;  
}  
case 6:  
{  
    m=29;h=5;  
    strcpy(city,"Sydney time");  
    break;  
}  
case 7:  
{  
    m=30;h=11;  
    strcpy(city,"SanFransico time");  
    break;  
}  
case 8:  
{  
    m=30;h=11;  
    strcpy(city,"Los Angeles time");  
    break;
```

```
}  
case 9:  
{  
    m=30;h=13;  
    strcpy(city,"Chicago time");  
    break;  
}  
case 10:  
{  
    m=30;h=14;  
    strcpy(city,"New York time");  
    break;  
}  
case 11:  
{  
    m=29;h=19;  
    strcpy(city,"London time");  
    break;  
}  
case 12:  
{  
    m=30;h=20;  
    strcpy(city,"Paris time");  
    break;  
}
```

```

        default:

            printf("\nEnter only within choice");

    }

    clrscr();

    initgraph(&gd,&gm,"c:\tc\bgi");

    draw();

    int x,y,x1,y1;

    int q,w,q1,w1;

    int ta,d,ta1,d1;

    int count=0;

    int pm,ph;

    struct time t;gettime(&t);

    float angle=4.712389+t.ti_sec*.1047198;

    float angle1=4.712389+(t.ti_sec)*.1047198;

    float an=4.712389+t.ti_min*.1047198;

    float an1=4.712389+(t.ti_min+m)*.1047198;

    float anf=4.712389+t.ti_hour*.1047198;

    float anf1=4.712389+(t.ti_hour+h)*.1047198;

    while(!kbhit())

    {

        draw();

        gettime(&t);gotoxy(5,5);

        angle=4.712389+t.ti_sec*.1047198;

        angle1=4.712389+(t.ti_sec)*.1047198;

        an=4.712389+t.ti_min*.1047198;

```

```

an1=4.712389+(t.ti_min+m)*.1047198;
anf=4.712389+t.ti_hour*5*.1047198 ;
anf1=4.712389+(t.ti_hour+h)*5*.1047198;
if(t.ti_min>=12&& t.ti_min<24)
{
    anf=anf+2*.1047198;
}
if(t.ti_min>=24&& t.ti_min<36)
{
    anf=anf+(3*.1047198);
}
if(t.ti_min>=36&& t.ti_min<48)
{
    anf=anf+(4*.1047198);
}
if(t.ti_min>=48&& t.ti_min<60)
{
    anf=anf+(5*.1047198);
}
if(t.ti_min+12>=12&& t.ti_min+12<24)
{
    anf1=anf1+2*.1047198;
}
if(t.ti_min+12>=24&& t.ti_min+12<36)
{

```



```

        anf1=anf1+(3*.1047198);
    }
    if(t.ti_min+12>=36&& t.ti_min+12<48)
    {
        anf1=anf1+(4*.1047198);
    }
    if(t.ti_min+12>=48&& t.ti_min+12<60)
    {
        anf1=anf1+(5*.1047198);
    }
    gotoxy(2,2);
    printf("The system time is: %d: %d: %d",
        t.ti_hour, t.ti_min, t.ti_sec);
    ph=0;
    pm=t.ti_min+m;
    if(pm/60>=1)
        ph=1;
    gotoxy(2,4);
    printf("%s is : %d: %d: %d",
        city,(t.ti_hour+h+ph)%24,(t.ti_min+m)%60,t.ti_sec);
    setcolor(2);outtextxy(80,350,"System time");
    outtextxy(470,350,city);
    setlinestyle(0,0,0);setcolor(0);
    line(120,240,x,y);line(520,240,x1,y1);
    line(120,240,q,w);line(520,240,q1,w1);

```

```

line(120,240,ta,d);line(520,240,ta1,d1);
x=120+65*cos(angle);x1=520+65*cos(angle1);
y=240+65*sin(angle);y1=240+65*sin(angle1);
q=120+55*cos(an);q1=520+55*cos(an1);
w=240+55*sin(an);w1=240+55*sin(an1);
ta=120+45*cos(anf);ta1=520+45*cos(anf1);
d=240+45*sin(anf);d1=240+45*sin(anf1);
setcolor(10);setlinestyle(0,0,2);
line(120,240,x,y);line(520,240,x1,y1);
setlinestyle(0,0,2);
setcolor(9);
line(120,240,q,w);line(520,240,q1,w1);
setlinestyle(0,0,3);
setcolor(4);
line(120,240,ta,d);line(520,240,ta1,d1);
angle+=.1047198;
delay(1000);
count++;
setcolor(count);
outtextxy(460,440,"MADE BY :- batch no 12");
outtextxy(460,460,"cse IIRD YEAR");

```

```

}

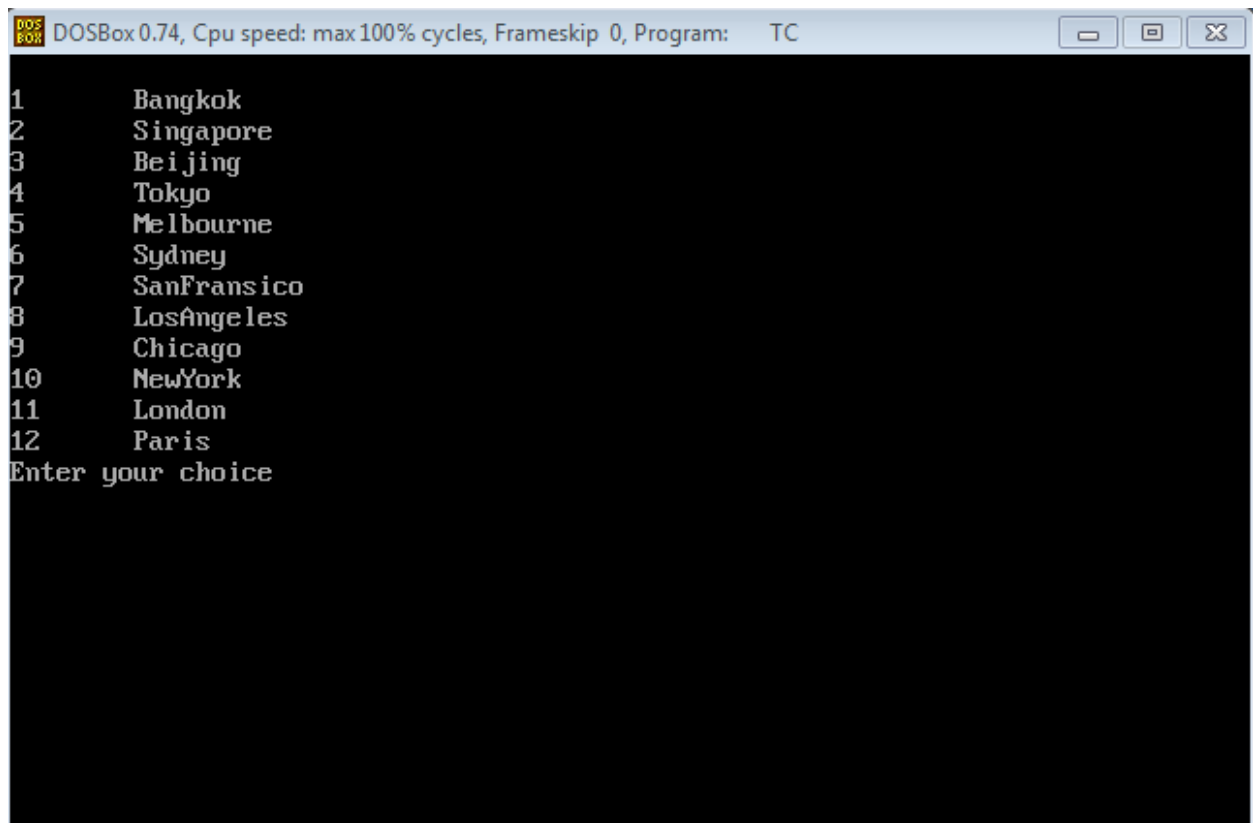
```

```

}

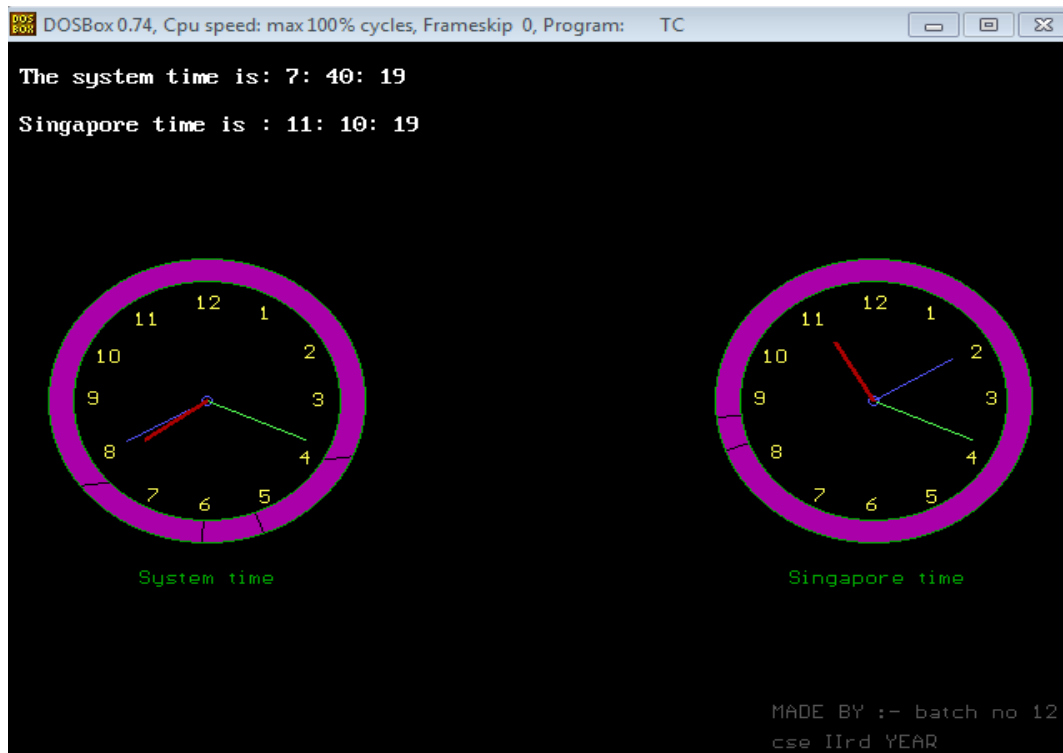
```

Output

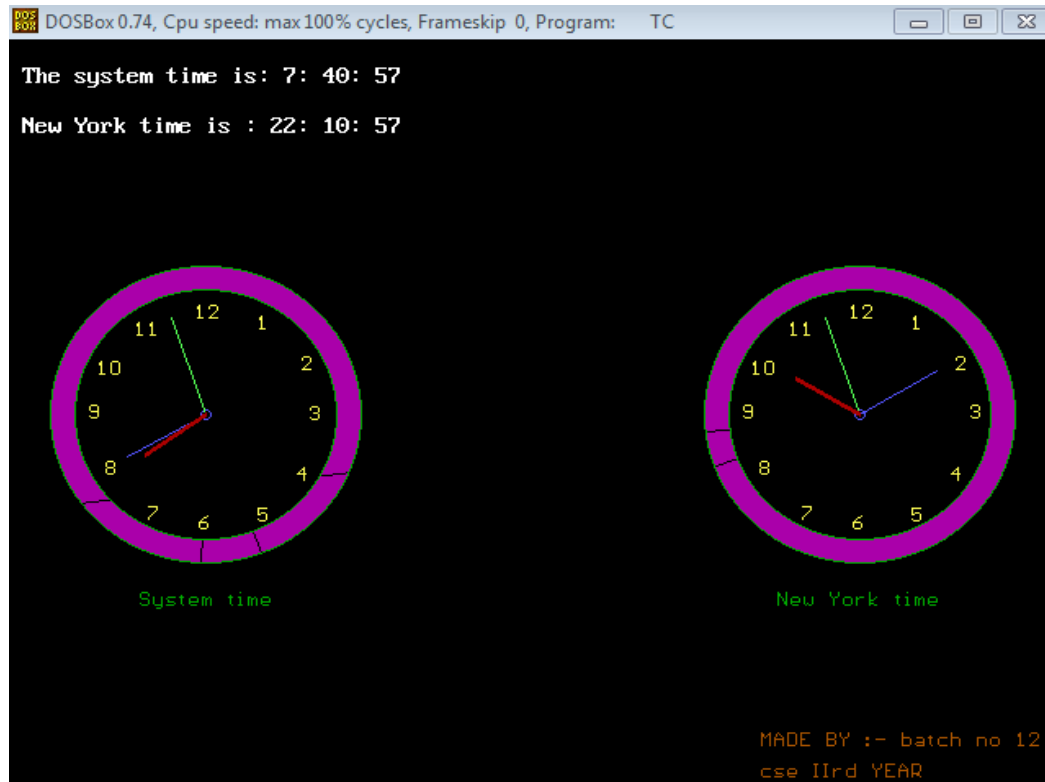


```
DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Program: TC
1      Bangkok
2      Singapore
3      Beijing
4      Tokyo
5      Melbourne
6      Sydney
7      SanFrancisco
8      LosAngeles
9      Chicago
10     NewYork
11     London
12     Paris
Enter your choice
```

Displaying choice to the user of different countries



Outputs showing system time and other country time as per choice



CONCLUSION:

There ends our analog clock project in 'c' this is our small attempt in big ocean of 'c graphics'. Here using c graphics we concluded that analog clock has been completed and had come up with the desired output of what we want

ADVANTAGES:

The main advantage of this analog clock project is that we can easily know the time at any instance.

DISADVANTAGES:

The main disadvantage of our project is that it can only display time but it cannot have the ability to make a loud alert signal at a specified time.

FUTURE SCOPE:

This project can be further improved by developing the program in such a way that it can make a loud alert signal at a specified time. In developing the project in such a way we can get a better analog clock.

REFERENCES:

<http://en.wikipedia.org/wiki/Clock>

<http://electrofriends.com/source-codes/software-programs/c/graphics/c-graphics-program-for-analog-clock>