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**Assgn :** 5

## C Code

### References ;

~ <https://app.schoology.com/assignment/1629062801/info>

~ <https://gist.github.com/trevortomesh/46ffd772a26a8e0ffdddef7daf6f63a0a>

~ <https://gist.github.com/trevortomesh/505ef6e4e2f778047a324fa37168b138>

~ <http://math.msu.su/~vvb/2course/Borisenko/CppProjects/GWindow/xintro.html#input>

```
#include <X11/Xlib.h>
#include <stdio.h>
#include <stdlib.h>
#include <string.h>

int main(void)
{
    //Declaring variables
    Display *d;
    Window w;
    XEvent e;
    Colormap screen_colormap;
    XColor red, green, blue, black, purple, cyan, magenta, yellow, grey, orange;
    const char *msg = "Welcome to 'Are You Actually Colour Blind' Game ~";
    const char *msg2 = "Please click or type in the first letter for the right answer ~";
    const char *quest = "= ?";
    const char *win = "Correct!";
    const char *lose = "Damnnnnnn you're color blind ehhe~ Cool Beans~ (exit)";
    const char *bye = "Nicely done XD \n";
    int s, marks, sum;

    d = XOpenDisplay(NULL);

    //If can't open, print error
    if (d == NULL)
    {
        fprintf(stderr, "Cannot open display\n");
        exit(1);
    }

    s = DefaultScreen(d);
    w = XCreateSimpleWindow(d, RootWindow(d, s), 10, 10, 500, 500, 5, BlackPixel(d, s),
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        WhitePixel(d, s));
XSelectInput(d, w, ExposureMask|ButtonPressMask|KeyPressMask);
XMapWindow(d, w);

screen_colormap=DefaultColormap(d,s);
XAllocNamedColor(d, screen_colormap, "red", &red, &red);
XAllocNamedColor(d, screen_colormap, "blue", &blue, &blue);
XAllocNamedColor(d, screen_colormap, "green", &green, &green);
XAllocNamedColor(d, screen_colormap, "cyan", &cyan, &cyan);
XAllocNamedColor(d, screen_colormap, "magenta", &magenta, &magenta);

while(1)
{
    XNextEvent(d, &e);

    if(e.type == Expose)
    {
        //Creating Strings
        XDrawString(d, w, DefaultGC(d, s), 10, 50, msg, strlen(msg));
        XDrawString(d, w, DefaultGC(d, s), 10, 90, msg2, strlen(msg2));
        XDrawString(d, w, DefaultGC(d, s), 50, 140, quest, strlen(quest));
        XDrawString(d, w, DefaultGC(d, s), 50, 190, quest, strlen(quest));
        XDrawString(d, w, DefaultGC(d, s), 50, 240, quest, strlen(quest));
        XDrawString(d, w, DefaultGC(d, s), 50, 290, quest, strlen(quest));
        XDrawString(d, w, DefaultGC(d, s), 50, 340, quest, strlen(quest));

        //Rectangles
        //Red Box Quiz (Position, Size)
        XSetForeground(d, DefaultGC(d,s), red.pixel);
        XFillRectangle(d, w, DefaultGC(d, s), 10, 120, 30, 30);
        XSetForeground(d, DefaultGC(d,s), black.pixel);
        XFillRectangle(d, w, DefaultGC(d, s), 70, 120, 30, 30);
        XSetForeground(d, DefaultGC(d,s), purple.pixel);
        XFillRectangle(d, w, DefaultGC(d, s), 140, 120, 30, 30);
        XSetForeground(d, DefaultGC(d,s), cyan.pixel);
        XFillRectangle(d, w, DefaultGC(d, s), 210, 120, 30, 30);
        XSetForeground(d, DefaultGC(d,s), red.pixel);
        XFillRectangle(d, w, DefaultGC(d, s), 280, 120, 30, 30);

        //Green Box Quiz (Position, Size)
        XSetForeground(d, DefaultGC(d,s), green.pixel);
        XFillRectangle(d, w, DefaultGC(d, s), 10, 170, 30, 30);
        XSetForeground(d, DefaultGC(d,s), magenta.pixel);
        XFillRectangle(d, w, DefaultGC(d, s), 70, 170, 30, 30);
        XSetForeground(d, DefaultGC(d,s), red.pixel);
        XFillRectangle(d, w, DefaultGC(d, s), 140, 170, 30, 30);
        XSetForeground(d, DefaultGC(d,s), green.pixel);
        XFillRectangle(d, w, DefaultGC(d, s), 210, 170, 30, 30);
        XSetForeground(d, DefaultGC(d,s), blue.pixel);

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XFillRectangle(d, w, DefaultGC(d, s), 280, 170, 30, 30);

//Blue Box Quiz (Position, Size)
XSetForeground(d, DefaultGC(d,s), blue.pixel);
XFillRectangle(d, w, DefaultGC(d, s), 10, 220, 30, 30);
XSetForeground(d, DefaultGC(d,s), purple.pixel);
XFillRectangle(d, w, DefaultGC(d, s), 70, 220, 30, 30);
XSetForeground(d, DefaultGC(d,s), blue.pixel);
XFillRectangle(d, w, DefaultGC(d, s), 140, 220, 30, 30);
XSetForeground(d, DefaultGC(d,s), orange.pixel);
XFillRectangle(d, w, DefaultGC(d, s), 210, 220, 30, 30);
XSetForeground(d, DefaultGC(d,s), yellow.pixel);
XFillRectangle(d, w, DefaultGC(d, s), 280, 220, 30, 30);

//Cyan Box Quiz (Position, Size)
XSetForeground(d, DefaultGC(d,s), cyan.pixel);
XFillRectangle(d, w, DefaultGC(d, s), 10, 270, 30, 30);
XSetForeground(d, DefaultGC(d,s), cyan.pixel);
XFillRectangle(d, w, DefaultGC(d, s), 70, 270, 30, 30);
XSetForeground(d, DefaultGC(d,s), black.pixel);
XFillRectangle(d, w, DefaultGC(d, s), 140, 270, 30, 30);
XSetForeground(d, DefaultGC(d,s), orange.pixel);
XFillRectangle(d, w, DefaultGC(d, s), 210, 270, 30, 30);
XSetForeground(d, DefaultGC(d,s), green.pixel);
XFillRectangle(d, w, DefaultGC(d, s), 280, 270, 30, 30);

//Magenta Quiz (Position, Size)
XSetForeground(d, DefaultGC(d,s), magenta.pixel);
XFillRectangle(d, w, DefaultGC(d, s), 10, 320, 30, 30);
XSetForeground(d, DefaultGC(d,s), red.pixel);
XFillRectangle(d, w, DefaultGC(d, s), 70, 320, 30, 30);
XSetForeground(d, DefaultGC(d,s), green.pixel);
XFillRectangle(d, w, DefaultGC(d, s), 140, 320, 30, 30);
XSetForeground(d, DefaultGC(d,s), purple.pixel);
XFillRectangle(d, w, DefaultGC(d, s), 210, 320, 30, 30);
XSetForeground(d, DefaultGC(d,s), magenta.pixel);
XFillRectangle(d, w, DefaultGC(d, s), 280, 320, 30, 30);
}

//Guide on the terminal
printf("\nr = red \nb = blue \ng = green \nm = magenta \nc = cyan \n");

//KeyPress XEvent (Choosing the answer by using the keyboard)
if (e.type == KeyPress)
{
    printf("KeyPress: %x\n", e.xkey.keycode);

    //If the user press r for red
    if (e.xkey.keycode == 0x1b)

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{
    printf("Red \n");
    XSetForeground(d, DefaultGC(d,s), red.pixel);
    XFillRectangle(d, w, DefaultGC(d, s), 350, 120, 30, 30);
    XDrawString(d, w, DefaultGC(d, s), 400, 140, win, strlen(win));
    marks++;
}

//If the user press g for green
else if (e.xkey.keycode == 0x2a)
{
    printf("Green \n");
    XSetForeground(d, DefaultGC(d,s), green.pixel);
    XFillRectangle(d, w, DefaultGC(d, s), 350, 170, 30, 30);
    XDrawString(d, w, DefaultGC(d, s), 400, 190, win, strlen(win));
    marks++;
}

//If the user press b for blue
else if (e.xkey.keycode == 0X38)
{
    printf("Blue \n");
    XSetForeground(d, DefaultGC(d,s), blue.pixel);
    XFillRectangle(d, w, DefaultGC(d, s), 350, 220, 30, 30);
    XDrawString(d, w, DefaultGC(d, s), 400, 240, win, strlen(win));
    marks++;
}

//If the user press c for cyan
else if (e.xkey.keycode == 0X36)
{
    printf("Cyan \n");
    XSetForeground(d, DefaultGC(d,s), cyan.pixel);
    XFillRectangle(d, w, DefaultGC(d, s), 350, 270, 30, 30);
    XDrawString(d, w, DefaultGC(d, s), 400, 290, win, strlen(win));
    marks++;
}

//If the user press m for magenta
else if (e.xkey.keycode == 0x3a)
{
    printf("Magenta \n");
    XSetForeground(d, DefaultGC(d,s), magenta.pixel);
    XFillRectangle(d, w, DefaultGC(d, s), 350, 320, 30, 30);
    XDrawString(d, w, DefaultGC(d, s), 400, 340, win, strlen(win));
    marks++;
}

else

```

```

    {
        //Print on the terminal that the user has lost
        printf("Damnnnnnn you're color blind ehhe~ Cool Beans~ (exit) \n");

        //Print on the game window that the user lost and exit
        immediately
        XDrawString(d, w, DefaultGC(d, s), 20, 400, lose, strlen(lose));

        if (e.type == KeyPress)
            break;

        if (e.type == ButtonPress)
            break;
    }

}

//ButtonPress XEvent (Choosing the answers by clicking the mouse)
else if (e.type == ButtonPress)
{
    //Coordinates of the place that user clicked on the window
    printf("You pressed a button at (%i,%i)\n",
        e.xbutton.x, e.xbutton.y);

    //Checking the answer
    //Clicking the red box
    if ((e.xbutton.x >= 280 && e.xbutton.x <= 310) && (e.xbutton.y >= 120 &&
e.xbutton.y <= 150))
    {
        XDrawString(d, w, DefaultGC(d, s), 400, 140, win, strlen(win));
        marks++;
    }

    //Clicking the green box
    else if ((e.xbutton.x >= 210 && e.xbutton.x <= 240) && (e.xbutton.y >= 170
&& e.xbutton.y <= 200))
    {
        XDrawString(d, w, DefaultGC(d, s), 400, 190, win, strlen(win));
        marks++;
    }

    //Clicking the blue box
    else if ((e.xbutton.x >= 140 && e.xbutton.x <= 170) && (e.xbutton.y >= 220
&& e.xbutton.y <= 250))
    {
        XDrawString(d, w, DefaultGC(d, s), 400, 240, win, strlen(win));
        marks++;
    }
}

```

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        //Clicking the cyan box
        else if ((e.xbutton.x >= 70 && e.xbutton.x <= 100) && (e.xbutton.y >= 270 &&
e.xbutton.y <= 300))
        {
            XDrawString(d, w, DefaultGC(d, s), 400, 290, win, strlen(win));
            marks++;
        }

        //Clicking the magenta box
        else if ((e.xbutton.x >= 280 && e.xbutton.x <= 310) && (e.xbutton.y >= 320
&& e.xbutton.y <= 350))
        {
            XDrawString(d, w, DefaultGC(d, s), 400, 340, win, strlen(win));
            marks++;
        }

        else
        {
            //Print on the terminal that you lose
            printf("Damnnnnnn you're color blind ehhe~ Cool Beans~ (exit) \n");

            //Print on the game window that you lose and exit immediately
            XDrawString(d, w, DefaultGC(d, s), 20, 400, lose, strlen(lose));

            if (e.type == KeyPress)
                break;

            if (e.type == ButtonPress)
                break;
        }
    }

    //Checking total marks
    if (marks >= 5)
    {
        //Print on the terminal that the user win
        printf("Congratulations!! Nicely done XD \n");

        //Print on the game window that the user win and exit immediately
        XDrawString(d, w, DefaultGC(d, s), 20, 400, bye, strlen(bye));

        if (e.type == KeyPress)
            break;

        if (e.type == ButtonPress)
            break;
    }
}

```

```
}
```

```
XCLOSEDISPLAY(d);  
return 0;
```

```
}
```

## Screenshot









