

### University of Khartoum

### **Faculty of Mathematical Sciences**



# Lab Manual: C++ Programming Language



# Implement the following Classes:

```
4.1
                class circle
                                     //graphics circle
                 {protected:
                 int xCo, yCo;
                                    //coordinates of center
                 int radius;
                 color fillcolor;
                                    //color
                 fstyle fillstyle;
                                   //fill pattern
                 public:
                                  //sets circle attributes
                 void set(int x, int y, int r, color fc, fstyle fs)
                 {xCo = x;}
                yCo = y;
                 radius = r;
                 fillcolor = fc;
                 fillstyle = fs; }
                 void draw()
                                    //draws the circle
                 {set_color(fillcolor);
                                             //set color
                 set_fill_style(fillstyle);
                                            //set fill
                 draw_circle(xCo, yCo, radius); //draw solid circle } };
                 int main()
                 init_graphics();
                                       //initialize graphics system
                 circle c1;
                                   //create circles
                 circle c2;
                 circle c3;
                 //set circle attributes
                 c1.set(15, 7, 5, cBLUE, X_FILL);
                 c2.set(41, 12, 7, cRED, O_FILL);
                 c3.set(65, 18, 4, cGREEN, MEDIUM_FILL);
                                    //draw circles
                 c1.draw();
                 c2.draw();
                 c3.draw();
                 set_cursor_pos(1, 25); //lower left corner
                 return 0; }
```



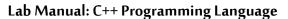


4.2

## University of Khartoum

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## **Department of Computer Science**





```
class Distance
                          //English Distance class
{private:
int feet;
float inches;
public:
void setdist(int ft, float in) //set Distance to args
{ feet = ft; inches = in; }
void getdist()
                      //get length from user
{
cout << "\nEnter feet: "; cin >> feet;
cout << "Enter inches: "; cin >> inches;
}
void showdist()
                        //display distance
{ cout << feet << "\'-" << inches << '\"'; } };
int main()
Distance dist1, dist2;
                           //define two lengths
dist1.setdist(11, 6.25);
                            //set dist1
dist2.getdist();
                       //get dist2 from user
//display lengths
cout << "\ndist1 = "; dist1.showdist();</pre>
cout << "\ndist2 = "; dist2.showdist();</pre>
cout << endl;
return 0;
}
```