

**COSC 565/ COSC 475: Software Engineering I**  
**Assignment 1**  
**Due: 6th October, 2015**

- 1) Can a software engineer become a certified Professional Engineering (PE)? Explain. Give advantages and disadvantages of certification in Software Engineering. [10]
- 2) Define the depth versus the breadth issue in software complexity. [10]
- 3) What are the eight principles for software engineering code of ethics recommended by the IEEE-CS/ACM Version 5.2 joint task force report? [10]
- 4) What are the four quadrants in a spiral model? Trace the requirements set of activities through each quadrant. [10]
- 5) Compare and contrast Agile and traditional methods [10]

	Agile	Traditional / Heavy
Requirements		
Design		
User involvement		
Documentation		
Communication		
Process complexity		
Overhead		

- 6) Using your knowledge of how an ATM is used, develop a set of use cases that could serve as a basis for understanding the requirements for an ATM system. [Write at least 5 **Textual Use Cases**] [20]
- 7) Write a class chart with methods [30]  
public void add(int value)  
public void draw (Graphics2D g2)

Use the following class as your main class:

```
import javax.swing.JFrame;

/**
 * Tester class to display a stick chart.
 */
public class ChartViewer
{
    public static void main(String[] args)
    {
        JFrame frame = new JFrame();

        final int FRAME_WIDTH = 300;
        final int FRAME_HEIGHT = 300;
    }
}
```

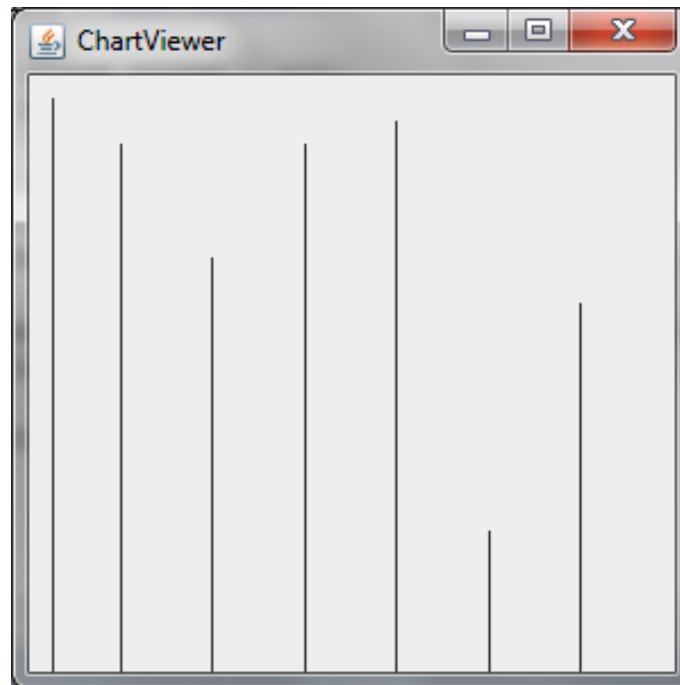
```

frame.setSize(FRAME_WIDTH, FRAME_HEIGHT);
frame.setTitle("ChartViewer");
frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);

ChartComponent component = new ChartComponent();
frame.add(component);

frame.setVisible(true);
}
}

```



Use the following class in your solution:

```

import javax.swing.JComponent;
import java.awt.Graphics;
import java.awt.Graphics2D;

public class ChartComponent extends JComponent
{
    public void paintComponent(Graphics g)
    {
        Graphics2D g2 = (Graphics2D) g;
        Chart c = new Chart(getWidth(), getHeight());
        c.add(10);
        c.add(30);
        c.add(80);
        c.add(30);
        c.add(20);
        c.add(200);
        c.add(100);

        c.draw(g2);
    }
}

```