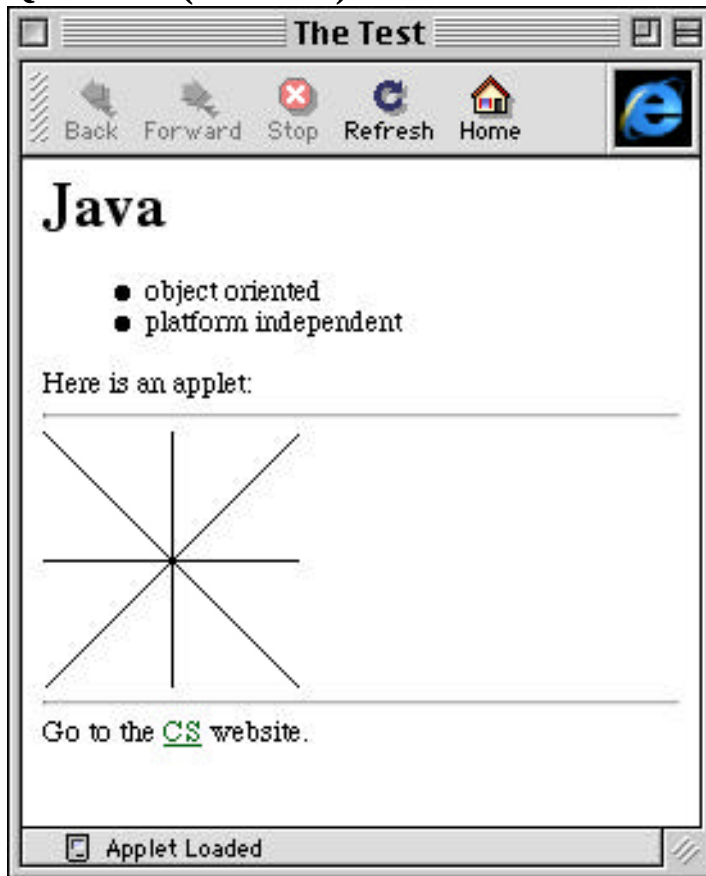


Principles of Programming

Test SOLUTIONS: Monday 21st August 6.30pm – 7.45pm

Question 1 (10 marks)



Question 2 (5 marks)

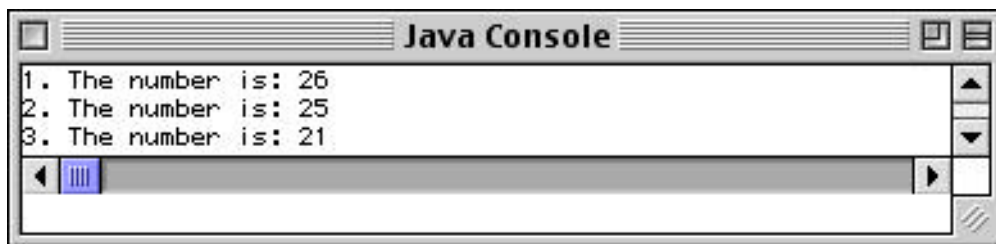
- 1 () after String
- 2 == after rand
- 3 ; after if
- 4 glass
- 5 missing { after main

Question 3 (10 marks)

```
public void paint(Graphics g) {  
    final int SIZE = 50;  
  
    g.drawOval(0, 0, SIZE, SIZE);  
    g.drawOval(0, SIZE, SIZE, SIZE);  
    g.drawOval(SIZE, 0, SIZE, SIZE);  
    g.drawOval(SIZE, SIZE, SIZE, SIZE);  
  
}
```

Question 4 (10 marks)

10.0
 55.0
 55.0
 10.0
 -3
 -4

Question 5 (6 marks)**Question 6 (30 marks)**

```
import java.awt.*;
import java.applet.*;
import java.awt.event.*;
```

```
public class question07 extends Applet implements ActionListener, MouseListener
{
```

```
    private final int SIZE = 25;    /** WIDTH and HEIGHT of the square */
    private final int START_X = 40;  /** initial x position of the square */
    private final int START_Y = 50;  /** initial y position of the square */
```

```
    /** current x, y of the square */
    private int squareX, squareY;
    /** reset Button */
    private Button resetB;
    /** boolean to store whether square area is cleared */
    private boolean isSelected;
```

```
    /** set up the TextFields, Button */
    public void init() {
```

```
        isSelected = false;
        squareX = START_X;
        squareY = START_Y;

        addMouseListener(this);
```

```

resetB = new Button("RESET");
resetB.addActionListener(this);
add(resetB);

```

```

}
/** display the square in its current position */
public void paint( Graphics g ) {

```

```

    if (isSelected)
        g.setColor(Color.red);
    else
        g.setColor(Color.cyan);

    g.fillRect(squareX, squareY, SIZE, SIZE);

```

```

}
/** called when the RESET button is clicked */
public void actionPerformed(ActionEvent e) {

```

```

    isSelected = false;
    squareX = START_X;
    squareY = START_Y;

    repaint();

```

```

}

```

```

/** called when one of the buttons is pressed */
public void mousePressed(MouseEvent e) {

```

```

    int  xPos, yPos;
        //get the x, y value of the user click
    xPos = e.getX();
    yPos = e.getY();
    if (isSelected){
        squareX = xPos;
        squareY = yPos;
        isSelected = false;
    }
    else if  (xPos>squareX    &&    xPos<squareX+SIZE    &&
yPos>squareY
                                                && yPos<squareY+SIZE){
        isSelected = true;
    }

    repaint();

```

```

}
/** these methods are not used */
public void mouseEntered(MouseEvent e) {}
public void mouseExited(MouseEvent e) {}
public void mouseClicked(MouseEvent e) {}
public void mouseReleased(MouseEvent e) {}

```

```

}

```

Question 7 (4 marks)

```
(!(a < b)) && (b >= c): false  
(a > b || a <= c) && (c != b): true
```

Question 8 (15 marks)

```
//Write your getGuess method here  
private String getGuess(String lowerS, String upperS){  
    int guess;  
    int lower, upper;  
    lower = Integer.parseInt(lowerS);  
    upper = Integer.parseInt(upperS);  
    guess = (int) Math.round(Math.random()*(upper -  
                                                lower) + lower);  
    return String.valueOf(guess);  
}
```

Question 9 (10 marks)