

Ryerson University
Department of Electrical and Computer Engineering
COE318

Quiz

September 25, 20013

Name: _____

Student ID#: _____

Time: 50 minutes

Examiners: Profs. E. Bagheri, T. Yang, O. Das

Circle your professor's name.

Answer all questions in the space provided. Closed book

Question 1. (5 marks)

Consider the following program.

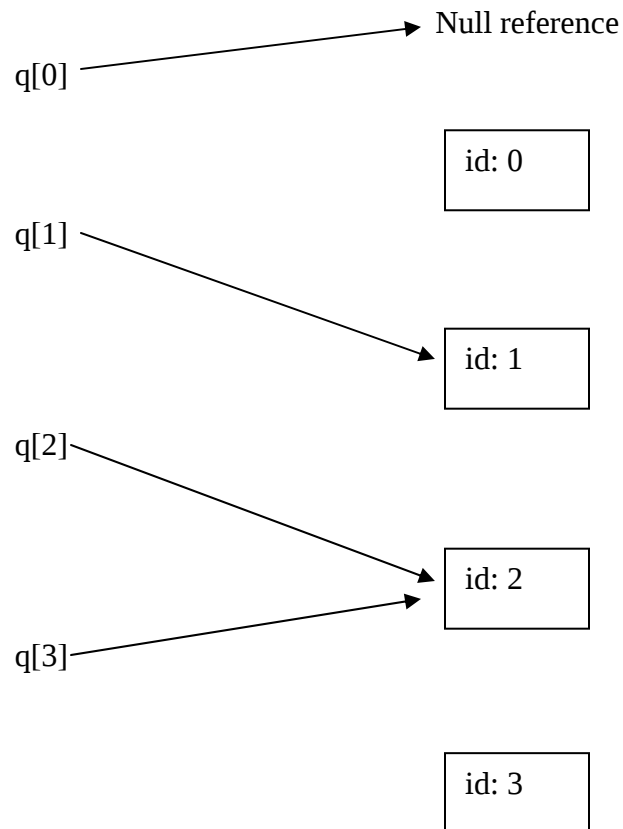
```
public class Test {
    private int id;

    public Test() {
        id = 0;
    }

    public static void main (String [] args ) {
        Test[ ] q = new Test[4];
        for(int x = 0; x < 4; x++) {
            q[x] = new Test();
            q[x].id = x;
        }
        q[3] = q[1];
        q[0] = q[3];
        q[0] = null;
        q[3] = q[2];
    }
}
```

Answer the following questions assuming that we are at the end of `main`.

(a) Draw lines connecting the reference variables (on the left column) with their matching objects if any or null (on the right column).



(b) How many Quiz objects eligible for garbage collection?

Answer: 2

Question 2. (6 marks)

Please print the output of the following program:

```
public class Rectangle {
    private int x,y; //coordinates of the top left corner
    private int l,w; //length and width

    public Rectangle(int xCoord, int yCoord, int length, int width) {
        x = xCoord;
        y = yCoord;
        l = length;
        w = width;
    }

    public void scale(int coefficient) {
        l = l * coefficient;
        w = w * coefficient;
        System.out.println("New Length is " + l +
                           " and The New Width is " + w);
    }

    public void move(int xOffset, int yOffset) {
        x = x + xOffset;
        y = y + yOffset;
        System.out.println("New x is " + x + " and The y is " + y);
    }

    public static void main (String[] args) {
        Rectangle r1 = new Rectangle(4, 3, 4, 8);
        r1.move(-5, 7);
        r1.scale(2);
        System.out.println("The top left corner is (" +
                           r1.x + "," + r1.y + ")");
    }
}
```

Answer:

New x is -1 and The y is 10

New Length is 8 and The New Width is 16

The top left corner is (-1,10)

Question 3. (5 marks)

Fill in the two blanks in the following program:

```
public class Book {
    private String title;

    // Constructor: initializes the instance variables
    public Book(String t) {
        title = t;
    }

    public String getTitle() {
        return title;
    }

    public static void main(String[] args){
        Book b;

        // (a) create a new Book object with title "Java" and
        //      let b refer to that object

        b = new Book("Java");

        // (b) print the title of the book referred to by b to the
        //      standard output

        System.out.println(b.getTitle()); OR

        System.out.println(b.title);
    }
}
```

```
}  
}
```

Question 4. (4 marks)

Fill in the two blanks so that the following loop iterates exactly 6 times.

```
int x = 12;  
while (x <= 17)  
{  
    System.out.println( x );  
    x = x + 1;  
}
```