

Single Dimension Arrays

1. Determine the output of the following code segment:

```
int i;
int [] numbers = new int [10];
for (i = 0; i < numbers.length; i++)
{
    numbers[i] = 2*(i - 5);
    numbers[i] = numbers[i] * numbers[i];
}
for (i = 0; i < numbers.length; i++)
    System.out.println(numbers[i]);
```

2. Revise the code above to search the array to find the largest integer.
3. Determine the output of the following code using the provided text file.

```
import apcslib.*;
import chn.util.*;

class Continents
{
    // instance variables
    private String myName; // name of continent
    private int myArea; // area of continent in square miles
    private double myPopulation; // population of continent
    private int myGNP; // Gross National Product in US dollars
    private double myMaleLiteracy; // rate of male literacy
    private double myFemaleLiteracy; // rate of female literacy
    private double myMaleLifeExpectancy; // male life expectancy
    private double myFemaleLifeExpectancy; // female life expectancy

    // constructor
    Continents(String name, int area, double pop, int gnp, double mlit,
        double flit, double mlife, double flife)
    {
        myName = name;
        myArea = area;
        myPopulation = pop;
        myGNP = gnp;
        myMaleLiteracy = mlit;
        myFemaleLiteracy = flit;
        myMaleLifeExpectancy = mlife;
        myFemaleLifeExpectancy = flife;
    }
}
```

```

// methods
String getName()
{
    return myName;
}

int getArea()
{
    return myArea;
}

double getPopulation()
{
    return myPopulation;
}

int getGNP()
{
    return myGNP;
}

double getMaleLit()
{
    return myMaleLiteracy;
}

double getFemaleLit()
{
    return myFemaleLiteracy;
}

double getMaleLifeExp()
{
    return myMaleLifeExpectancy;
}

double getFemaleLifeExp()
{
    return myFemaleLifeExpectancy;
}
}

//----- End of Continents class -----//

```

```

class Driver
{
    public static void main(String[] args)
    {
        String name;
        int area;
        double pop;
        int gnp;
        double mlit;
        double flit;
        double mlife;
        double flife;
        int i;

        String fileName = "worldData.txt";
        FileInput inFile = new FileInput(fileName);
        int num = inFile.readInt();
        Continents[] regions = new Continents[num];

        for (i = 0; i < num; i++)
        {
            name = inFile.readToken();
            area = inFile.readInt();
            pop = inFile.readDouble();
            gnp = inFile.readInt();
            mlit = inFile.readDouble();
            flit = inFile.readDouble();
            mlife = inFile.readDouble();
            flife = inFile.readDouble();
            regions[i] = new Continents(name, area, pop, gnp, mlit,
                flit, mlife, flife);
        }
        System.out.println("Assuming the number of male and females is
            approximately the same on each continent:");
        System.out.println();
        for (i = 0; i < num; i++)
        {
            System.out.println(regions[i].getName() + " has an average literacy
                rate of " + Format.right(((regions[i].getMaleLit()
                    + regions[i].getFemaleLit())/2)*100,5,2) + "%");
            System.out.println("and an average life expectancy of "
                + (regions[i].getMaleLifeExp() + regions[i].getFemaleLifeExp())/2
                + " years.");
            System.out.println();
        }
    }
}

```

worldData.txt

```

6
Africa 11667000 669752000 650 .564 .368 53.1 56.4
Asia 17236000 3335672000 1780 .776 .588 63.3 66.0
Europe 4056000 727997000 11100 .967 .98 69.3 77.0
NorthAmerica 9355000 442115000 12380 .913 .895 68.5 74.8
Australia&Oceania 3284000 27641000 12730 .942 .913 69.8 75.4
SouthAmerica 6878000 308770000 2450 .871 .846 64.4 69.9

```

4. Revise the Driver class in #3 above to compute and output the average area, population and GNP for the six continents.