

## Computer Science Homework 04.01:

### 1. Divisors.java

```
public class Divisors {
    public static void main (String[] args)
    {
        int x = Integer.parseInt(args[0]);
        for(int i = 1; i <= x; i++)
        {
            if ((x % i) == 0)
            {
                System.out.println(i);
            }
        }
    }
}
```

## 2. Reverse.java

```
public class Reverse
{
    public static void main (String[] args)
    {
        String str = args[0];
        String rev = "";
        for(int i = str.length() - 1; i >= 0; i--)
        {
            rev = rev + str.charAt(i);
        }
        System.out.println(rev);
        System.out.println("The middle character is " +
rev.charAt(rev.length() / 2));
    }
}
```

### 3. InOrder.java

```
public class InOrder
{
    public static void main (String[] args)
    {
        int sub = 0;
        int num = (int)(Math.random() * 10);
        do
        {
            System.out.print(num + " ");
            sub = num;
            num = (int)(Math.random() * (10));
        } while(num >= sub);
    }
}
```

#### 4. DamkaBoard.java

```
public class DamkaBoard
{
    public static void main(String[] args)
    {
        int size = Integer.parseInt(args[0]);
        for(int i = 1; i <= size; i++)
        {
            if(i % 2 == 0) System.out.print(" ");
            for(int j = 1; j <= size; j++)
            {
                if((j == size ) && (i % 2 == 0))
                {
                    System.out.print("*");
                }
                else
                {
                    System.out.print("* ");
                }
            }
            System.out.println("");
        }
    }
}
```

## 5. Perfect.java

```
public class Perfect
{
    public static void main (String[] args)
    {
        int check = Integer.parseInt(args[0]);
        String per = "";
        per = check + " is a perfect number since " + check +
" = 1";
        int sum = 1;
        for(int i = 2; i < check; i++)
        {
            if ((check % i) == 0)
            {
                sum += i;
                per = per + " + " + i;
            }
        }
        if((check != sum)|| (check == 0)) per = check + " is
not a perfect number";
        System.out.println(per);
    }
}
```

6. OneOfEachStats.java

```
import java.util.Random;
public class OneOfEachStats
{
    public static void main (String[] args)
    {
        // Gets the two command-line arguments
        int times = Integer.parseInt(args[0]);
        int seed = Integer.parseInt(args[1]);
        Random generator = new Random(seed);
        boolean girl;
        boolean boy;
        double sum = 0;
        double num;
        int count;
        int child2 = 0;
        int child3 = 0;
        int child4 = 0;
        for(int i = 0; i < times; i++)
        {
            girl = false;
            boy = false;
            count = 0;
            while((!girl) || (!boy))
            {
                num = generator.nextDouble();
                if(num > 0.5)
                {
                    boy = true;
                    count++;
                }
                else
                {
                    girl = true;
                    count++;
                }
            }
            sum += count;
            if (count == 2) child2++;
            else if (count == 3) child3++;
            else child4++;
        }
        double avg = (double)(sum)/times;
    }
}
```

```

        String str = "";
        if ((child2 > child3) && (child2 > child4)) str =
"2.";
        else if ((child3 > child2) && (child3 >
child4)) str = "3.";
        else if ((child4 > child2) &&
(child4 > child3)) str = "4 or more.";
        else if ((child4 == child2)
&& (child4 != child3)) str = " 2 and 4.";
        else if ((child4 ==
child3) && (child4 != child2)) str = " 3 and 4.";
        else if ((child2
== child3) && (child2 != child4)) str = " 2 and 3.";
        else str =
" 2, 3 and 4";

        System.out.println("Average: " + avg + " children to
get at least one of each gender.");
        System.out.println("Number of families with 2
children: " + child2);
        System.out.println("Number of families with 3
children: " + child3);
        System.out.println("Number of families with 4 or more
children: " + child4);
        System.out.println("The most common number of children
is " + str);

    }
}

```