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)
				{
					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;
            int sum = 0;
            int 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.nextInt(2);
                        if(num == 0)
                        {
                              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);


      }
}
```