- Divisors.java :

```
public class Divisors {
   public static void main(String[] args) {

      int x = Integer.parseInt(args[0]);

      // Print the divisors
      for (int i = 1; i < x; i++) {
         if (x % i == 0) {
            System.out.println(i);
         }
       }
        System.out.println(x);
   }
}
```

- Reverse.java :

```
public class Reverse {
    public static void main(String[] args) {
        if (args.length < 1) {
            System.out.println("Give a String of min 1 letter");
            return;
        }
        String x = args[0];
        int a = x.length() - 1;
        int y = a / 2;
        char z = x.charAt(y);
        String b = "";

        while (a >= 0) {
            b += x.charAt(a);
            a -= 1;
        }

        System.out.println(b);
        System.out.println("The middle character is " + z);
    }
}
```

- InOrder.java :

```
public class InOrder {
    public static void main(String[] args) {
        int x = (int) (Math.random() * 10);
        System.out.print(x + " ");

        int y = x + 1;

        do {
            y = (int) (Math.random() * 10);

            if (y >= x) {
                System.out.print(y + " ");
                x = y; // Update x to the current value of y
                y = (int) (Math.random() * 10);
            }
        } while (x <= y);
    }
}
```

- DamkaBoard.java :

```
public class DamkaBoard {
    public static void main(String[] args) {
```

```
        // Size of the board
        int x = Integer.parseInt(args[0]);

        for (int i = 0; i < x; i++) {
            // Add a space at the beginning of odd-numbered rows
            if (i % 2 == 1) {
                System.out.print(" ");
            }

            for (int j = 0; j < x; j++) {
                // Print an asterisk
                System.out.print("*");
                // Add a space between asterisks, except for the last one in the row
                if (j < x - 1) {
                    System.out.print(" ");
                }
            }
                // Add a space at the end of even-numbered rows
            if (i % 2 == 0 && i < x - 1) {
                System.out.print(" ");
            }

            // Move to the next line to start a new row
            System.out.println();
        }
    }
}
```

- Perfect.java :

```
public class Perfect {
    public static void main(String[] args) {

        int N = Integer.parseInt(args[0]);
```

```
        int sum = 1;  // First divisor is 1
        String divisors = "1";

        for (int i = 2; i <= N / 2; i++) {
            if (N % i == 0) {
                sum += i;
                divisors += " + " + i;
            }
        }

        if (sum == N) {
            System.out.println(N + " is a perfect number since " + N + " = " + divisors);
        } else {
            System.out.println(N + " is not a perfect number");
        }
    }
}
```

- OneOfEachStats.java :

```
import java.util.Random;

public class OneOfEachStats {
    public static void main(String[] args) {

        int n = Integer.parseInt(args[0]);
```

```
        int seed = Integer.parseInt(args[1]);
        int twoChildren = 0;
        int threeChildren = 0;
        int fourplusChildren = 0;
        int totalofChildren = 0; // average

        Random generator = new Random(seed);

        while (n > 0) {
            int boys = 0;
            int girls = 0;

            while (boys == 0 || girls == 0) {
                // probability for a boy or a girl
                if (generator.nextDouble() < 0.5) {
                    boys++;
                } else {
                    girls++;
                }
            }

            totalofChildren += boys + girls;

            if (boys + girls == 2) {
                twoChildren++;
            } else if (boys + girls == 3) {
                threeChildren++;
            } else if (boys + girls >= 4) {
                fourplusChildren++;
            }

            n--;
        }

        double avg = (double) totalofChildren / Integer.parseInt(args[0]); // n=0

        int mode = twoChildren;
        String modeString = "2";

        if (threeChildren > mode) {
            mode = threeChildren;
            modeString = "3";
        }
        if (fourplusChildren > mode) {
            mode = fourplusChildren;
            modeString = "4 or more";
        } // identify the "mode"

        System.out.println("Average: " + avg + " children to get at least one of each
gender.");
```

```
        System.out.println("Number of families with 2 children: " + twoChildren);
        System.out.println("Number of families with 3 children: " + threeChildren);
        System.out.println("Number of families with 4 or more children: " +
fourplusChildren);
        System.out.println("The most common number of children is " + modeString +
".");
    }
}
```