**Q1.** (10 points) Write a class called **Average** that can read from any input stream and computes the average of the stream seen so far. You can assume that the input stream consists of data type **double** stored in a machine independent way. The class Average has one function called **read()** which reads the next double number and returns the average of the stream seen so far.

You must run and provide output on the following program (without any changes to the program). You are not allowed to make any changes to this program.

import java.io.DataOutputStream;

import java.io.FileOutputStream;

import java.io.FileInputStream;

public class Main {

public static void main(String[] args) throws Exception{

// This part of the code creates a file named data.txt and

// uses writeDouble to write to the file.

FileOutputStream in = new FileOutputStream("data.txt");

DataOutputStream din = new DataOutputStream(in);

din.writeDouble(10);

din.writeDouble(20);

din.writeDouble(15);

din.writeDouble(12);

din.writeDouble(2);

// Code to compute the average of the input stream

Average av = new Average(new FileInputStream("data.txt"));

System.out.println("Average: " + av.read());

System.out.println("Average: " + av.read());

System.out.println("Average: " + av.read());

System.out.println("Average: " + av.read());

System.out.println("Average: " + av.read());

}

}

**Expected Output:**

Average: 10.0

Average: 15.0

Average: 15.0

Average: 14.25

Average: 11.8