The assignment will be graded out of 100 points.

Some tasks ask you to write code, and specify what name to use for the file where you save that code. You need to use exactly the name that is given (do not change the case, or make any other modification). Remember, the name of the main class must match the filename.

For some tasks you need to answer questions. Create a text document entitled answers.txt, or answers.docx, or answers.pdf, and put all your answers there. Acceptable file formats are plain text, Word document, OpenOffice document, and PDF. Put your name and UTA ID in the file on the first line.

Each task below will instruct you where to put your answers.

**Task 1 (10 pts.)**

public class task1 {

public static void main(String[] args) {

System.out.println("5+7");

System.out.println(5+7);

}

}

If you execute this program, what will be printed? Put your answer in your answers file.

**Task 2 (10 pts.)**

What will be printed by the following code?

public class task2 {

public static void main(String[] args) {

int a = 10;

int b = 20;

System.out.println(a);

System.out.println(b);

b = a+b;

a = 2\*b - a;

System.out.println(a);

System.out.println(b);

}

}

Put your answer in your answers file.

**Task 3 (20 pts.)**

public class task3 {

public static void main(String[] args) {

double square\_area = side\_length \* side\_length;

double side\_length = 10.0;

System.out.println(square\_area);

}

}

The above code is an incorrect attempt to compute that, if the length of the side of a square is 10, then the area of the square is 10 squared, which is 100.

If you try to run the above code, it will not work. Rewrite the program so that it works, and save it as task3.java.

Also, in your answers file, explain exactly (only a few words are needed) why the code, as given above, does not work.

**Task 4 (20 pts.)**

The area of a triangle with height H and base B is B\*H/2. The following code is an incorrect attempt to write a program that computes the area of a triangle. The following Java code attempts to calculate the area of a triangle, but there is something wrong.

import java.util.Scanner;

public class task4 {

public static void main(String[] args) {

Scanner in = new Scanner(System.in);

System.out.printf("Enter the triangle base: ");

int base = in.nextInt();

System.out.printf("Enter the triangle height: ");

int height = in.nextInt();

int area = height \* base / 2;

System.out.println(area);

}

}

If you run the above program, and you enter 3 for the base and 5 for the height, the program prints out the wrong answer. In your answers file, explain why this code gives the wrong result. Write a corrected version of the above program and save it as task4.java.

**Task 5 (20 pts.)**

The area *A* of a rectangle can be calculated by multiplying the length and the width: *A* = *l* × *w*, where *l* is the length and *w* is the width. The perimeter P of a rectangle can be calculated with *P* = 2(*l* + *w)*. Write a program that:

* Defines a variable called "length", and sets its value to 5.
* Defines a variable called "width", and sets its value to 4.
* Computes the area of the rectangle, and stores it in a variable called "area".
* Computes the perimeter of the rectangle, and stores it in a variable called "perimeter".
* Prints out the area and perimeter.

Save your program as task5.java.

**Task 6 (20 pts.)**

Using the definitions of area and perimeter of a rectangle from the previous task, write a program that:

* Defines a variable called "length", and asks the user to enter a value for it.
* Defines a variable called "width", and asks the user to enter a value for it.
* Computes the area of the rectangle, and stores it in a variable called "area".
* Computes the perimeter of the rectangle, and stores it in a variable called "perimeter".
* Prints out the area and perimeter.

Save your program as task6.java.

**Suggestions**

Pay close attention to all specifications on this page, including file names and submission format. Even in cases where the program works correctly, points will be taken off for non-compliance with the instructions given on this page (such as wrong file names, wrong compression format for the submitted code, and so on). The reason is that non-compliance with the instructions makes the grading process significantly (and unnecessarily) more time consuming. Contact the instructor or TA if you have any questions.

**How to submit**

The assignment should be submitted via [Blackboard](http://elearn.uta.edu). Submit a ZIPPED directory called assignment1.zip (no other forms of compression accepted, contact the instructor or TA if you do not know how to produce .zip files). The zipped directory should contain your answers document and all the Java code files (task3.java, etc).

To create a zipped directory called assignment1.zip, follow these steps:

1. Create a folder called assignment1.
2. Copy to that folder all your solutions (your answers file, and all your Java files). See here [how to find your Java files](http://vlm1.uta.edu/%7Eathitsos/courses/cse1310_fall2015/assignments/java_files) on your computer.
3. Zip that folder. On windows, you can zip a folder by right-clicking on the folder, and then selecting Send to->Compressed (zipped) folder.

This sample [assignment1.zip](http://vlm1.uta.edu/%7Eathitsos/courses/cse1310_fall2015/assignments/assignment1/assignment1.zip) file shows how your assignment1.zip file should look like. Your assignment1.zip file should have exactly the same structure as the sample file.

**Submission checklist**

* Did you create the answers file with your name, UTA ID, and answers to non-programming tasks?
* Did you zip everything into a file called assignment1.zip?