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1. For non-programming questions, use a word file to type your answers. Don’t use the text box on the Canvas to answer the questions or to write comments, we will not read it.

“ – Instructions For Assignment

Answer question 1 on a text file (include question number and the answer only); write a program for each of Q.2 - Q.5. Convert .java files to text files. Submit 5 text files to Canvas by the due date.

1. **(12 points) Give a brief answer for each of the following questions:**
2. What is the difference between an interpreted language and a compiled language?

In a compiled language the code is first translated into an intermediate language which is then compiled into machine code. Interpreted code by comparison translates the code directly into machine code.

1. What does JDK stand for? What does JRE stand for?

JDK stands for ‘Java Development Kit’, JRE stands for ‘Java Runtime Environment’.

1. What is the Java source filename extension, and what is the Java bytecode filename extension?

The java source filename extension is “.java”. The bytecode filename extension is “.class”.

1. What is the command to compile a Java program?

The command to compile a java program is ‘javac’.

1. What is the command to run a Java program?

“java”

1. What is the JVM?

JVM is the “Java Virtual Machine”. The JVM executes the compiled java code. Because the compiled java code runs on the JVM, and the JVM is multi-platform, this means java is multi-platform.

1. If your program needs to read integers, but the user entered strings, an error would occur when running this program. What kind of error is this?

A type error (as opposed to a syntax error).

1. Show the output of the following code:

**double** amount = 5;

System.out.println(amount / 2);

System.out.println(5 / 2);

The output is as follows:

2.5

2

1. Can the following conversions involving casting be allowed?

**boolean** b = **true**;

i = (**int**)b;

**int** i = 1;

**boolean** b = (**boolean**)i;

**No. The above conversions do not work.** There are however specific methods that can achieve the desired result.

1. What data types are required for a switch variable? If the keyword break is not used after a case is processed, what is the next statement to be executed?

If there are no break keywords, then Java will continue onto the next case until it encounters a break statement or the switch block ends. The switch statement accepts the byte, short, char, int, and String data types.

1. What is y after the following switch statement is executed? Rewrite the code using an if-else statement.

x = 3; y = 3;

**switch** (x + 3) {

**case** 6: y = 1;

default: y += 1;

}

Y is 2 after the above switch statement is executed because there is no break. I am assuming that the lack of break was a mistake, and that it was not intended to increase the value of y.

int x = 3, y = 3;

if ((x+3) == 6){

y = 1;

}else{

y +=1;

}

1. Why does the Math class not need to be imported?

The math library is included standard with the java library.