Peer Instruction 1

Computer Basics
The Java compiler does which of the following?

Please select the single correct answer.

A. Takes in source code, outputs machine language
B. Takes in source code, outputs bytecode
C. Interprets source code one line at a time
D. Takes in assembly language, outputs machine language
E. Runs machine language
The Java compiler does which of the following?

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A. Takes in source code, outputs machine language
B. Takes in source code, outputs bytecode
C. Interprets source code one line at a time
D. Takes in assembly language, outputs machine language
E. Runs machine language
Which of the following form a statement block that groups components of a program

Please select the single correct answer.

A. Braces {}
B. Parenthesis ()
C. Double Slash //
D. Brackets []
E. Semi-colon ;
Which of the following form a statement block that groups components of a program

Please select the single correct answer.

A. **Braces {}**
B. Parenthesis ()
C. Double Slash //</br>
D. Brackets []
E. Semi-colon ;
Which of the following is not a reserved word?

Please select the single correct answer.

A. public
B. class
C. static
D. void
E. main
Which of the following is not a reserved word?

Please select the single correct answer.

A. public  
B. class  
C. static  
D. void  
E. main
On to the lecture
Which of the following variable declarations will not compile?

Please select the single correct answer.

A. int i = 778899;
B. double x = 5.43212345;
C. char c = "&";
D. short s0, s1 = 567, s3;
E. All declarations are correct!
Which of the following variable declarations will not compile?

Please select the single correct answer.

A.  int i = 778899;
B.  double x = 5.43212345;
C.  char c = “&”;
D.  short s0,s1=567,s3;
E.  All declarations are correct!
Which of the following lists of variable names are legal identifiers in Java?

Please select the single correct answer.

A. file3, String, int, _name13
B. 3file, name3, $real0
C. file3, string, #hashtag, double
D. file3, string, int2, _name1
E. None of the above
Which of the following lists of variable names are legal identifiers in Java?

Please select the single correct answer.

A. file3, String, int, _name13
B. 3file, name3, $real0
C. file3, string, #hashtag, double
D. file3, string, int2, _name1
E. None of the above
What is the difference between the primitive types shown below?

byte, short, int, long

A. No difference except for the names!
B. Some represent integers, others real numbers
C. Each type has a different size in memory
D. Some types are signed, some are unsigned
E. None of the above
What is the difference between the primitive types shown below?

byte, short, int, long

A. No difference except for the names!
B. Some represent integers, others real numbers
C. Each type has a different size in memory
D. Some types are signed, some are unsigned
E. None of the above
What will the code below assign to the value of the integer variable?

```java
int myInteger = 9/4 + 44/11 + 11%3 + (6/4);
```

A. 9  
B. 9.75  
C. 10  
D. 10.25  
E. None of the above
What will the code below assign to the value of the integer variable?

int myInteger = 9/4 + 44/11 + 11%3 + (6/4);

A. 9
B. 9.75
C. 10
D. 10.25
E. None of the above
What will the code below assign to the value of the integer variable?

```java
int myInteger = 9/5 + 44/11 + 11%3 + (6/4);
```

A. 9  
B. 9.75  
C. 10  
D. 10.25  
E. None of the above
What will the code below assign to the value of the integer variable?

```java
int myInteger = 9/5 + 44/11 + 11%3 + (6/4);
```

A. 9  
B. 9.75  
C. 10  
D. 10.25  
E. None of the above
What will the code below assign to the value of the integer variable?

```java
int myInteger = 6 * 2 / 3 + 5 * 6 - 15 / 5;
```

A. 4  
B. 16  
C. 31  
D. 47  
E. None of the above
What will the code below assign to the value of the integer variable?

```java
int myInteger = 6 * 2 / 3 + 5 * 6 - 15 / 5;
```

A. 4  
B. 16  
C. 31  
D. 47  
E. None of the above
What is the size of a variable declared to be an int?

A. 8 bits
B. 16 bits
C. 32 bits
D. 64 bits
E. None of the above.
What is the size of a variable declared to be an int?

A. 8 bits  
B. 16 bits  
C. 32 bits  
D. 64 bits  
E. None of the above.
Now to the lecture
Which of the statements below does not increment (and save) the declared integer?

```java
int myInteger = 0;
A. myInteger++;  
B. ++myInteger;  
C. myInteger + 1;  
D. myInteger += 1;  
E. myInteger = myInteger + 1;
```
Which of the statements below does not increment (and save) the declared integer?

```java
int myInteger = 0;
A. myInteger++;
B. ++myInteger;
C. myInteger + 1;
D. myInteger += 1;
E. myInteger = myInteger + 1;
```
Which of the following statements will not compile because of an incorrect type cast?

Select the one correct answer.

A. int i0 = (char) '$';
B. int i1 = (int) 76.1234;
C. int i2 = (short) 34;
D. int i3 = (float) 3213;
E. All of the above
Which of the following statements will not compile because of an incorrect type cast?

Select the one correct answer.

A. `int i0 = (char) '$';`
B. `int i1 = (int) 76.1234;`
C. `int i2 = (short) 34;`
D. `int i3 = (float) 3213;`
E. All of the above
Which of the statements below successfully prints the value of the variable?

double myDouble = 1.2345;

A. System.out.println("Value = " + myDouble);
B. System.out.println("Value = ", myDouble);
C. System.out.println("Value = " myDouble);
D. System.out.println("Value = myDouble");
E. None of the above
Which of the statements below successfully prints the value of the variable?

double myDouble = 1.2345;

A. `System.out.println("Value = " + myDouble);`
B. `System.out.println("Value = ", myDouble);`
C. `System.out.println("Value = " myDouble);`
D. `System.out.println("Value = myDouble");`
E. None of the above
Which line successfully creates a Scanner object to read from the keyboard?

Please select the single correct answer.

A. Scanner scan;
B. Scanner scan = new Scanner();
C. Scanner scan = new Scanner("keyboard");
D. Scanner scan = new Scanner(System);
E. Scanner scan = new Scanner(System.in);
Which line successfully creates a Scanner object to read from the keyboard?

Please select the single correct answer.

A. Scanner scan;
B. Scanner scan = new Scanner();
C. Scanner scan = new Scanner("keyboard");
D. Scanner scan = new Scanner(System);
E. Scanner scan = new Scanner(System.in);
Which line successfully reads an integer from the keyboard into the declared variable?

```java
int myInteger;
Scanner scan = new Scanner (System.in);
A. myInteger = scan.next();
B. myInteger = scan.nextInt();
C. myInteger = scan.nextInt();
D. myInteger = nextInt();
E. None of the above
```
Which line successfully reads an integer from the keyboard into the declared variable?

```java
int myInteger;
Scanner scan = new Scanner (System.in);
A. myInteger = scan.next();
B. myInteger = scan.nextInt;
C. myInteger = scan.nextInt();
D. myInteger = nextInt();
E. None of the above
```
cs163/164: Elementary Programming

On to the lecture!
What is the value of the declared boolean after execution of the following code?

```java
boolean canDrive;
int age = 16;
if (age > 16)
    canDrive = true;
System.out.println(canDrive);
```

A. false  
B. true  
C. Will not compile!
What is the value of the declared boolean after execution of the following code?

```java
boolean canDrive;
int age = 16;
if (age > 16)
    canDrive = true;
System.out.println(canDrive);
```

A. false
B. true
C. Will not compile!
What is the value of the declared boolean after execution of the following code?

```java
int i = 100, j = 200, k = 300;
boolean myBoolean;
if (i <= j <= k)
    myBoolean = true;
else
    myBoolean = false;
```

A. false  
B. true  
C. Will not compile!
What is the value of the declared boolean after execution of the following code?

```
int i = 100, j = 200, k = 300;
boolean myBoolean;
if (i <= j <= k)
    myBoolean = true;
else
    myBoolean = false;
```

A. false  
B. true  
C. Will not compile!
Are the first and second code segments shown below identical?

// First code segment
if (even == true)
    System.out.println("It is even. ");
// Second code segment
if (even)
    System.out.println("It is even. ");

A. Yes
B. No
C. Depends on the boolean
Are the first and second code segments shown below identical?

```java
// First code segment
if (even == true)
    System.out.println("It is even. ");
// Second code segment
if (even)
    System.out.println("It is even. ");
```

A. Yes  
B. No  
C. Depends on the boolean
Conditionals (Selection)
What is the value of myInteger after execution of the following code?

```java
int myInteger = -1;
if (myInteger++ < 0) {
    myInteger = myInteger + 2;
} else {
    myInteger = myInteger + 1;
}
```

A. 0  
B. 1  
C. 2  
D. 3  
E. None of the above
What is the value of myInteger after execution of the following code?

```java
int myInteger = -1;
if (myInteger++ < 0) {
    myInteger = myInteger + 2;
} else {
    myInteger = myInteger + 1;
}
```

A. 0  
B. 1  
C. 2  
D. 3  
E. None of the above
int myInteger = 1;
if (-- myInteger == 1) {
    myInteger += 4;
} else {
    myInteger += 5;
}
What is the value of myInteger after execution of the following code?

```java
int myInteger = 1;
if (--myInteger == 1) {
    myInteger += 4;
} else {
    myInteger += 5;
}
```

A. 3  
B. 4  
C. 5  
D. 6  
E. None of the above
On to the lecture
What is printed to the console after execution of the following code?

```java
boolean bo = true;
boolean b1 = false;
System.out.println(!bo);
System.out.println(bo && b1);
System.out.println(bo || !b1);
System.out.println(!bo ^ (bo || b1));
```

A. false, true, false, false
B. false, false, true, false
C. true, true, false, false
D. false, false, true, true
E. None of the above
What is printed to the console after execution of the following code?

```java
boolean bo = true;
boolean b1 = false;
System.out.println(!bo);
System.out.println(bo && b1);
System.out.println(bo || !b1);
System.out.println(!bo ^ (bo || b1));
```

A. false, true, false, false
B. false, false, true, false
C. true, true, false, false
D. false, false, true, true
E. None of the above
What is printed to the console after execution of the following code?

```java
int x = 30; int y=20;
int s = x % y;
if (s == 10)
    System.out.println("length = 10");
else if (s >= 10)
    System.out.println("length >= 10");
else
    System.out.println("length < 10");
```

A. length = 10
B. length = 10
C. length >= 10
D. length < 10
E. None of the above
What is printed to the console after execution of the following code?

```java
int x = 30; int y=20;
int s = x % y;
if (s == 10)
    System.out.println("length = 10");
else if (s >= 10)
    System.out.println("length >= 10");
else
    System.out.println("length < 10");
```

A. length = 10
   length >= 10
B. length = 10
C. length >= 10
D. length < 10
E. None of the above
What is the value of the variable taxes after execution of the following code?

double income = 80000.00;
double taxes = 5000.00;
if (income > 65000.00) {
    if (income < 90000.00)
        taxes += income * 0.25;
    else
        taxes += income * 0.15;
} else  taxes += income * 0.10;

A. 25000
B. 21250
C. 13000
D. 17000
E. None of the above
What is the value of the variable taxes after execution of the following code?

```java
double income = 80000.00;
double taxes = 5000.00;
if (income > 65000.00) {
    if (income < 90000.00)
        taxes += income * 0.25;
    else
        taxes += income * 0.15;
} else  taxes += income * 0.10;
```

A. 25000  
B. 21250  
C. 13000  
D. 17000  
E. None of the above
Which of the following statements will generate a compile error?

A. if (radius >= 0);
   radius = 1;
B. if (radius < 0)
   else radius = 2;
C. if (radius < 0);
   else; radius = 3;
D. boolean b = (2 < 1);

E. switch (c) {
   case 'a':
   case 'b':
   case 'c': c = 'z';
   break;
}

CS163 CS164
Which of the following statements will generate a compile error?

A. if (radius >= 0);
   radius = 1;
B. if (radius < 0)
   else radius = 2;
C. if (radius < 0);
   else; radius = 3;
D. boolean b = (2 < 1);
E. switch (c) {
    case 'a':
    case 'b':
    case 'c': c = 'z';
    break;
}
What is the value of percent after execution of the following code?

double percent = 0.5;
if (percent > 0.5)
    if (percent == 0.5)
        percent *= 2.0;
else
    percent *= 3.0;

A. 0.5
B. 1.0
C. 1.5
D. 2.0
E. None of the above
What is the value of percent after execution of the following code?

double percent = 0.5;
if (percent > 0.5)
  if (percent == 0.5)
    percent *= 2.0;
  else
    percent *= 3.0;

A. 0.5  
B. 1.0  
C. 1.5  
D. 2.0  
E. None of the above
What is the value of myChar after execution of the following code?

```
char myChar = '@';
switch (myChar ) {
    case '#':  myChar = 'a';
    case '@':  myChar = 'b';
    case 'a':  myChar = 'c';
        break;
    default:  myChar = 'd';
}
```

A. ‘a’
B. ‘b’
C. ‘c’
D. ‘d’
What is the value of myChar after execution of the following code?

```java
char myChar = '@';
switch (myChar) {
    case '#':  myChar = 'a';
    case '@':  myChar = 'b';
    case 'a':  myChar = 'c';
                break;
    default:   myChar = 'd';
}
```

A. ‘a’  
B. ‘b’  
C. ‘c’  
D. ‘d’
iClicker
What is the value of myInteger after execution of the following code?

```java
int myInteger = 1234;
switch (myInteger) {
    case 1234 || 4321:
        myInteger -= 10;
    default:
        myInteger += 10;
}
```

A. 1224  
B. 1234  
C. 1244  
D. Will not compile!
What is the value of myInteger after execution of the following code?

```java
int myInteger = 1234;
switch (myInteger) {
    case 1234 || 4321:
        myInteger -= 10;
    default:
        myInteger += 10;
}
```

A. 1224  
B. 1234  
C. 1244  
D. Will not compile!
On to the lecture
Which line correctly creates the myString object with the text "Hello World"?

Select the one correct answer.

A. String myString = (Hello World);
B. String myString = 'Hello World';
C. String myString = "Hello World";
D. String myString = new String(Hello World);
E. None of the above
Which line correctly creates the myString object with the text "Hello World"?

Select the one correct answer.

A. String myString = (Hello World);
B. String myString = ‘Hello World’;
C. String myString = "Hello World";
D. String myString = new String(Hello World);
E. None of the above
Which code correctly finds the index of the first instance of myChar in myString?

```java
char myChar = 'a';
String myString = "Java";
```

A. myString.charAt(myChar);
B. myString.instanceOf(myChar);
C. myString.indexOf(myChar);
D. None of the above
Which code correctly finds the index of the first instance of myChar in myString?

char myChar = 'a';
String myString = "Java";

A. myString.charAt(myChar);
B. myString.instanceOf(myChar);
C. myString.indexOf(myChar);
D. None of the above
What will the code shown below print to the console?

```java
String s = "Java is the best";
char c = 'a';
System.out.println(s.length() + " " + s.charAt(2) + " " + s.indexOf(c));
```

A. 16 a 1, 3
B. 16 v 1, 3
C. 16 v 1
D. 16 v 3
What will the code shown below print to the console?

```java
String s = "Java is the best";
char c = 'a';
System.out.println(s.length() + " " + s.charAt(2) + " " + s.indexOf(c));
```

A. 16 a 1, 3
B. 16 v 1, 3
C. 16 v 1
D. 16 v 3