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COM 210 (Prof. Lane)

6/21/22

1. Fill in the sizes and ranges of each variable type

Type	Size	Range
boolean	1 bit	true, false
char	1 byte/8bits	0-255
byte	8 bits	- 0-255
short	2 bytes	- 0 to 65,535
int	4 bytes	- 0 to 4,294,967,295
long	4 bytes	- 0 to 18,446,744,073,709,551,615
float	4 bytes	- 3.4E
double	8 bytes	- 1.7E

2. Execute the following in Java, and explain why the outputs are what they are:

```
x = y = z = 1;
x += 1; // what is x=__2__?
x = 5; y = 6 + ++x; // what is x=__6__?
x = 5;
y = 6 + x++; what is y=__11__?
```

Since y = 6 + the increment of x, and x is 5, the increment of x would be 6.

x+= means you need to increment what x is equal to (1+1=2)

3. Create an if statement that checks if a number is either greater than 40 OR less than 10. If true output the line "number is outside of bounds" if false then check if the number is even (hint: use mod). If the number is even output "The number is in bounds and even") if the number is odd output "number is in bounds and odd".

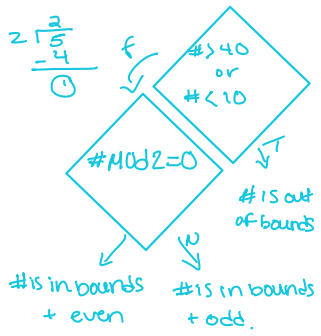
```
int num;
if ((num >40 || (num <10))
{ //start if
  System.out.println("number is out of bounds");
} //end if
else
{ //start else
  if(num%2==0)
  System.out.println("The # is in bounds and even");
}//end else
System.out.println("The #is odd and in bounds");
```

4.

```
switch (i) {
case 5 : x + 10; break;
case 6 : x = 20;
case 7 : x *= 2; break;
default : x = 30;
}
```

Print out the value of x for values of i: 5,6,7,10. Explain your answers

5 mod 2 = 1



5. Create a for loop that will list out all the possibilities of 2 binary variables.

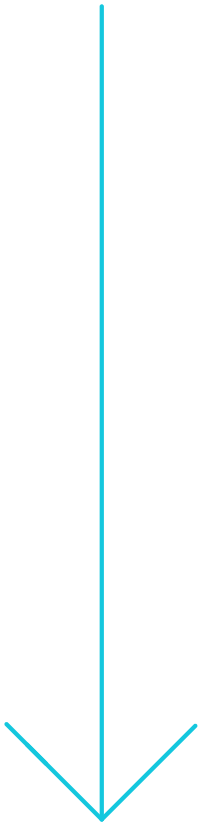
   Hint:

0	0
0	1
1	0
1	1

```
for(j=0;i<=1;i++);
for(j=1;i<=1;i++);
system.out.println(i+j);
```

6. Create a Java array "B" that holds 4 breakfast foods {eggs, cereal, toast, bacon}
   Create a Java array "I" that holds 4 integers {10,20,30,40}

   - Print out the 3rd term of B
   - Print out the 4th term of I
   - Update the 2nd term of B to oatmeal
   - Print all the values of B
   - Print the sum of all the integers in I
   - Print the cross of all Breakfast, Integer combos (in that order)
     - Hint: eggs10,eggs20,eggs30,eggs40,cereal10,….bacon40
   - How many steps did it take to print out all the ordered pairs from above?



```
Public static void (string) [] argos
{

String B [ ] = [“eggs” , “cereal” , “toast” , “bacon”};
Int I [ ] = {10, 20, 30, 40};

System.out.println(B[2]);

System.out.println(I[3]);


System.out.println();

System.out.println(Arrays.toString(B));

public void findElements (int arr[], int n, int key)

For (int i =0; i<n; i++)
If arr[i]==key

}

Public static int sum ()
{

Int I [ ] = {10, 20, 30, 40};
Int sum = 0;
Int i;

For (i=0; i< I.length; i++)
Sum +=I(i);

System.out.println();
For (int i =0; i<B.length-1; i++)
{
For (int j=0; j<=I.length-1;j++)
{
System.out.println(B[i] + “ “ + I[j]);
}

System.out.println (“it took me 3 steps to print all pairs”);

Public void findElements (int arr[], int n , int key)
{
For (int i=0; i<n; i++)
If (arr[i]==key)

}
```