

Challenge Questions:

1. Consider the following Java code:

```
java
int a = 3, b = 5, c = 8;
if (a > b) {
    if (b < c)
        a = b;
    else
        c = a;
} else {
    b = c - a;
}
System.out.println(a + b + c);
```

What will be the output?

2. Given this code fragment:

```
java
int x = 2, y = 4, z = 6;
if (x < y) {
    if (z > y)
        y = z;
    else
        x = z;
} else {
    z = x + y;
}
System.out.println(x + y + z);
```

What is the result?

3. Predict the output of the following code:

```
java
int p = 8, q = 12, r = 5;
if (p < q) {
    if (r > q)
        r = q;
    else
        q = p;
    p = r;
} else {
    q = r * 2;
}
System.out.println(p + q + r);
```

4. What will be displayed when this code executes?

```
java
int m = 1, n = 9, o = 3;
if (m == o) {
    o = m + n;
} else {
    if (n > o)
        m = o + 1;
    else
        n = m;
}
```

```
System.out.println(m + n + o);
```

5. Calculate the output:

```
java
int i = 7, j = 3, k = 11;
if (i != j) {
    if (j < k)
        k = i;
    j = j + 5;
} else {
    k = j * 2;
}
System.out.println(i + j + k);
```

6. Given the following code:

```
java
int a = 4, b = 6, c = 9;
if (a > c) {
    if (b < c)
        b = a;
    else
        c = b;
} else {
    a = b - c;
}
System.out.println(a + b + c);
```

What is the result?

7. What will be printed by this code?

```
java
int x = 10, y = 2, z = 15;
if (x < z) {
    if (y > z)
        x = y;
    else
        y = z;
} else {
    z = x + y;
}
System.out.println(x + y + z);
```

8. Predict the output:

```
java
int p = 5, q = 8, r = 10;
if (q > p) {
    if (r > q)
        q = r;
    r = p;
} else {
    p = q;
}
System.out.println(p + q + r);
```

9. Consider this code fragment:

```
java
int a = 12, b = 7, c = 5;
if (b < c) {
    c = a - b;
} else {
    if (a > b)
        b = a + c;
    else
        a = c - b;
}
System.out.println(a + b + c);
```

What is the output?

10. What will be displayed?

```
java
int x = 4, y = 1, z = 9;
if (x != y) {
    if (z < y)
        z = y;
    else
        x = z;
} else {
    y = x + z;
}
System.out.println(x + y + z);
```

11. Calculate the result:

```
java
int a = 15, b = 2, c = 8;
if (a > b) {
    if (b < c)
        a = c - b;
    else
        b = c;
}
c = a + b;
System.out.println(a + b + c);
```

12. Given the following code:

```
java
int m = 6, n = 3, o = 5;
if (m < n) {
    n = o * 2;
} else {
    if (o > m)
        o = n + 4;
    else
        m = n - 1;
}
System.out.println(m + n + o);
```

What is the output?

13. What will be the output of this code?

```
java
int x = 3, y = 14, z = 2;
if (x > z) {
    if (y < z)
        y = z;
    else
        z = y;
} else {
    x = z - y;
}
System.out.println(x + y + z);
```

14. Predict the output:

```
java
int p = 9, q = 5, r = 13;
if (p != r) {
    if (q < p)
        p = q + r;
    else
        r = q;
}
System.out.println(p + q + r);
```

15. Consider this code:

```
java
int a = 10, b = 3, c = 7;
if (b >= a) {
```

```
        c = b * 2;
    } else {
        if (c > b)
            a = b + c;
        else
            b = a;
    }
    System.out.println(a + b + c);
```

16. What will this code display?

```
java
int i = 5, j = 8, k = 2;
if (j > i) {
    if (k < j)
        i = k + j;
    else
        j = i - k;
}
System.out.println(i + j + k);
```

17. Calculate the result:

```
java
int m = 11, n = 4, o = 12;
if (n > o) {
    o = m + n;
} else {
    if (m > n)
```



```
        n = o - 2;
    else
        m = o;
}
System.out.println(m + n + o);
```

18. Predict the output:

```
java
int x = 14, y = 6, z = 10;
if (y < z) {
    if (x > z)
        z = x;
    else
        y = x;
} else {
    x = y + z;
}
System.out.println(x + y + z);
```

19. What will be printed?

```
java
int p = 3, q = 15, r = 4;
if (q > r) {
    if (p < q)
        p = r + q;
    else
        r = q;
```

```
}  
System.out.println(p + q + r);
```

20. Consider the following code:

```
java  
int a = 7, b = 10, c = 3;  
if (b <= a) {  
    c = b - a;  
} else {  
    if (c != b)  
        a = b * 2;  
    else  
        b = a;  
}  
System.out.println(a + b + c);
```

Challenge Questions:

21. Given `int x = 4, y = 3, z = 2;`, predict the output:

```
if (x > y) {  
    if (y < z)  
        System.out.println("AAA");  
    else  
        System.out.println("BBB");  
} else {
```

```
    System.out.println("CCC");  
}
```

22. What will be printed by this code?

```
int p = 5, q = 5, r = 1;  
if (p < q)  
    System.out.println("XXX");  
else if (p == q)  
    System.out.println("YYY");  
else  
    System.out.println("ZZZ");
```

23. Given the values `int m = 2, n = 3, o = 4;`, what is the output?

```
if (m >= n)  
    System.out.println("%%%%");  
else  
    System.out.println("####");  
System.out.println("++++");
```

24. Consider this code:

```
int a = 7, b = 8, c = 9;  
if (++b > a || --c < b)  
    a--;
```

```
else
    b++;
System.out.println(a + " " + b + " " + c);
```

What is the output?

25. What will the following code print?

```
int x = 1, y = 2, z = 3;
if (x == y)
    System.out.println("****");
else if (z > y)
    System.out.println("###");
else
    System.out.println("!!!");
```

26. Predict the output for the code:

```
int a = 10, b = 5, c = 3;
if (a > b)
    if (b < c)
        System.out.println("111");
    else
        System.out.println("222");
else
    System.out.println("333");
```

27. Given `int m = 4, n = 5;`, what will be printed?

```
if (m > n)
    System.out.println("AAAA");
else
    System.out.println("BBBB");
System.out.println("CCCC");
```

28. What will this code display?

```
int p = 3, q = 2, r = 1;
if (p-- > q++ && ++q < r)
    r++;
else
    q++;
System.out.println(p + " " + q + " " + r);
```

29. Predict the output:

```
int a = 8, b = 9, c = 7;
if (a > b)
    System.out.println("ONE");
else if (b > c)
    System.out.println("TWO");
else
    System.out.println("THREE");
```

30. What will be the output?

```
int x = 4, y = 4;
if (x != y)
    System.out.println("####");
else
    System.out.println("!!!!");
System.out.println("@@@@");
```

31. Consider `int a = 2, b = 1, c = 3;`, what is printed?

```
if (a < b)
    System.out.println("++++");
else if (c > a)
    System.out.println("===");
else
    System.out.println("----");
```

32. What will this code print?

```
int p = 6, q = 4;
if (p > ++q)
    q++;
else
    p--;
System.out.println(p + " " + q);
```

33. Given the code:

```
int x = 3, y = 3, z = 5;
if (y > z)
    if (z < x)
        System.out.println("FOO");
    else
        System.out.println("BAR");
else
    System.out.println("BAZ");
```

What is the output?

34. Predict the output:

```
int a = 1, b = 0;
if (a++ > 1 || b-- > -1)
    a--;
else
    b++;
System.out.println(a + " " + b);
```

35. What will this code display?

```
int x = 9, y = 8;
if (x >= y) {
```

```
    if (y == x)
        System.out.println("SAME");
    else
        System.out.println("DIFFERENT");
}
```

36. Consider:

```
int a = 5, b = 2, c = 6;
if (a > b && b < c)
    c--;
else
    b++;
System.out.println(a + " " + b + " " + c);
```

What is the output?

37. Given `int a = 4, b = 3;`, predict the result:

```
if (a > b)
    System.out.println("LARGER");
else
    System.out.println("SMALLER");
System.out.println("DONE");
```

38. What will the following code print?


```
int x = 0, y = 2;
if (++x > y-- && y++ < 3)
    y++;
else
    x--;
System.out.println(x + " " + y);
```

39. What is the output for:

```
int a = 3, b = 5, c = 7;
if (b < c || c > a)
    c--;
else
    b++;
System.out.println(a + " " + b + " " + c);
```

40. Consider this code:

```
int m = 4, n = 3, o = 5;
if (m >= o)
    o = m + n;
else if (n < m)
    m = o;
else
    n = m;
System.out.println(m + " " + n + " " + o);
```