Homework

The following homework is designed to cover the course objectives for this unit.

Homework Exercise 2.1

Research the ITT Tech Virtual Library and other resources on the Internet to find answers to the following questions:

1. How is using the for loop different in JDK 1.5 and 1.6?
2. Why are the new features in JDK 1.6 considered more user-friendly?

Submit your written answers in a Word document to your instructor at the beginning of Unit 3.

Homework Exercise 2.2

Submit your written answers to the following 24 questions to your instructor at the beginning of Unit 3.

1. What will the value of y be after the following statements are executed?

```
x = 0;
y = (x > 0) ? 10 : -10;
```

   a. 10
   b. 20
   c. Illegal expression
   d. 0
   e. -10

2. Suppose income is 4001, what is the output of the following code?

```
if (income > 3000) {
  System.out.println("Income is greater than 3000");
}
else if (income > 4000) {
  System.out.println("Income is greater than 4000");
```

   a. Income is greater than 4000 followed by Income is greater than 3000.
   b. Income is greater than 3000 followed by Income is greater than 4000.
   c. Income is greater than 3000.
   d. Income is greater than 4000.
   e. No output is displayed.

3. When Java evaluates 1 + 2 + 3 + (4 + 5) + 6 * 7, which operation is performed first?

   a. 1 + 2
   b. 4 + 5
   c. 2 + 3
   d. 6 * 7

4. What is the value of y after the following switch statement is executed?

```
x = 3;
switch (x + 3) {
  case 6: y = 0;
  case 7: y = 1;
  default: y += 1;
}
```

   a. 1
   b. 3
   c. 2
   d. 4

5. What is the printout of the following switch statement?

```
char ch = 'b';

switch (ch) {
  case 'a':
    System.out.print(ch);
  case 'b':
    System.out.print(ch);
  case 'c':
    System.out.print(ch);
  case 'd':
    System.out.print(ch);
}
```

   a. b
   b. bcd
   c. abcd
   d. bbb
   e. bb

6. The statement System.out.printf("%5d", 123456) displays the following output:

   a. 12345.6
   b. 12345
   c. 123456
   d. 23456

7. According to the Java expression evaluation rule, which of the following operators in the expression 3 + 4 + 4 * 5 is executed first?

   a. The *
   b. The first +
   c. The second +
   d. It could be either the first + or the *

8. The statement System.out.printf("%10s", 123456) displays the following output: (Note: * represents a space.)

   a. 12345*****
   b. 123456****
   c. ****123456
   d. 23456*****

9. Suppose x = 10 and y = 10. What is the value of x after evaluating the expression (y > 10) && (x++ > 10)?

   a. 9
   b. 11
   c. 10

10. Analyze the following code:

```
boolean even = false;
if (even = true) {
  System.out.println("It is even!");
}
```

    Which of the following happens when the code is executed?

    a. The program runs fine but displays nothing.
    b. The program has a syntax error.
    c. The program has a runtime error.
    d. The program runs fine and displays “It is even!”

11. Which of the following is the correct expression that evaluates to true if the number x is between 1 and 100 or the number is negative?

    a. ((x < 100) && (x > 1)) && (x < 0)
    b. 1 < x < 100 && x < 0
    c. (1 > x > 100) || (x < 0)
    d. ((x < 100) && (x > 1)) || (x < 0)

12. Suppose x = 10 and y = 10. What is the value of x after evaluating the expression (y > 10) & (x++ > 10)?

    a. 10
    b. 9
    c. 11

13. The statement System.out.printf("%3.1f", 1234.56) displays the following output: _____

    a. 1234.56
    b. 123.5
    c. 1234.5
    d. 1234.6
    e. 123.4

14. Suppose x = 1, y = -1, and z = 1. What is the printout of the following statement?

```
if (x > 0)
   if (y > 0)
      System.out.println("x > 0 and y > 0");
else if (z > 0)
      System.out.println("x < 0 and z > 0");
```

    a. x < 0 and z > 0;
    b. x > 0 and y > 0;
    c. x < 0 and z < 0;
    d. No printout

15. Suppose x = 10 and y = 10. What is the value of x after evaluating the expression (y >= 10) | (x++ > 10)?

    a. 11
    b. 10
    c. 9

16. How many times will the following code print "Welcome to Java"?

```
int count = 0;
do {
  System.out.println("Welcome to Java");
} while (++count < 10);
```

    a. 0
    b. 9
    c. 8
    d. 11
    e. 10

17. How many times will the following code print "Welcome to Java"?

```
int count = 0;
do {
  System.out.println("Welcome to Java");
} while (count++ < 10);
```

    a. 9
    b. 8
    c. 0
    d. 11
    e. 10

18. What is the value of count after the following loop is executed?

```
int count = 0;
do {
  System.out.println("Welcome to Java");
} while (count++ < 9);
System.out.println(count);
```

    a. 11
    b. 9
    c. 0
    d. 8
    e. 10

19. How many times will the following code print "Welcome to Java"?

```
int count = 0;
do {
  System.out.println("Welcome to Java");
  count++;
} while (count < 10);
```

a. 11
b. 10
c. 9
d. 8
e. 0

20. What is the value of sum after the following loop terminates?

```
int sum = 0;
int item = 0;
do {
  item++;
  sum += item;
  if (sum > 4) break;
}
while (item < 5);
```

a. 7
b. 8
c. 5
d. 6

21. What is the value of i after the following for loop?

```
int y = 0;
for (int i = 0; i<10; ++i) {
  y += i;
}
```

a. 10
b. Undefined
c. 11
d. 9

22. How many times will the following code print "Welcome to Java"?

```
int count = 0;
while (count < 10) {
  System.out.println("Welcome to Java");
  count++;
}
```

a. 10
b. 11
c. 0
d. 9
e. 8

23. What is the output for y?

```
int y = 0;
for (int i = 0; i<10; ++i) {
  y += i;
}
System.out.println(y);
```

a. 10
b. 12
c. 13
d. 11
e. 45

24. What is the value of sum after the following loop terminates?

```
int sum = 0;
int item = 0;
do {
  item++;
  sum += item;
  if (sum >= 4) continue;
}
while (item < 5);
```

a. 16
b. 15
c. 17
d. 18