



1. Write a Java program to swap two variables, Without using third variable

Fun Exercises

```
public class Exercise15 {  
  
    public static void main(String[] args) {  
  
        // int, double, float  
  
        int a, b;  
  
        a = 15;  
  
        b = 27;  
  
        System.out.println("Before swapping : a, b = "+a+", "+ + b);  
  
        a = a + b;  
  
        b = a - b;  
  
        a = a - b;  
  
        System.out.println("After swapping : a, b = "+a+", "+ + b);  
  
    }  
  
}
```

2. Write a Java program to check whether Java is installed on your computer. Hint: Use System Class

```
public class Exercise2 {  
    public static void main(String[] args) {  
        System.out.println("\nJava Version:  
"+System.getProperty("java.version"));  
        System.out.println("Java Runtime Version:  
"+System.getProperty("java.runtime.version"));  
        System.out.println("Java Home: "+System.getProperty("java.home"));  
        System.out.println("Java Vendor: "+System.getProperty("java.vendor"));  
        System.out.println("Java Vendor URL:  
"+System.getProperty("java.vendor.url"));  
        System.out.println("Java Class Path:  
"+System.getProperty("java.class.path")+"\n");  
    }  
}
```

3. Write a Program to reverse a string.

```
import java.util.Scanner;

public class Exercise3 {

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

        System.out.print("Input a string: ");

        char[] letters = scanner.nextLine().toCharArray();

        System.out.print("Reverse string: ");

        for (int i = letters.length - 1; i >= 0; i--) {

            System.out.print(letters[i]);

        }

        System.out.print("\n");

    }

}
```

4. Write a Java program to count the letters, spaces, numbers and other characters of an input string ?

```
import java.util.Scanner;

public class Exercise4 {

    public static void main(String[] args) {

        String test = "Aa kiu, I swd skieo 236587. GH kiu: sieo?? 25.33";
        count(test);

    }

    public static void count(String x){
        char[] ch = x.toCharArray();
        int letter = 0;
        int space = 0;
        int num = 0;
    }

}
```



```
int other = 0;
for(int i = 0; i < x.length(); i++){
    if(Character.isLetter(ch[i])){
        letter ++ ;
    }
    else if(Character.isDigit(ch[i])){
        num ++ ;
    }
    else if(Character.isSpaceChar(ch[i])){
        space ++ ;
    }
    else{
        other ++;
    }
}
System.out.println("The string is : Aa kiu, I swd skieo 236587. GH kiu: sieo??
25.33");

System.out.println("letter: " + letter);
System.out.println("space: " + space);
System.out.println("number: " + num);
System.out.println("other: " + other);
}
```

5. Write a Java program to create and display unique three-digit number using 1, 2, 3, 4. Also count how many three-digit numbers are there.

```
import java.util.Scanner;

public class Exercise5 {

    public static void main(String[] args) {

        int amount = 0;

        for(int i = 1; i <= 4; i++){

            for(int j = 1; j <= 4; j++){

                for(int k = 1; k <= 4; k++){
```



```
        if(k != i && k != j && i != j){  
            amount++;  
            System.out.println(i + "" + j + "" + k);  
        }  
    }  
}  
  
System.out.println("Total number of the three-digit-number is " + amount);  
}
```

6. Write a Java program to input and display your password.

```
import java.io.Console;  
public class Example6 {  
    public static void main(String[] args) {  
        Console cons;  
        if ((cons = System.console()) != null) {  
            char[] pass_ward = null;  
            try {  
                pass_ward = cons.readPassword("Input your Password:");  
                System.out.println("Your password was: " + new String(pass_ward));  
            } finally {  
                if (pass_ward != null) {  
                    java.util.Arrays.fill(pass_ward, ' ');  
                }  
            }  
        }  
    }  
}
```

```

    }

    } else {

        throw new RuntimeException("Can't get password...No console");

    }

}

}

```

7. Write a Java program to print the following string in a specific format ?

```

Twinkle, twinkle, little star,
    How I wonder what you are!
        Up above the world so high,
        Like a diamond in the sky.
Twinkle, twinkle, little star,
    How I wonder what you are

```

```

public class Example7 {
    public static void main(String[] args) {

        System.out.println("\nTwinkle, twinkle, little star, \n\tHow I wonder what you are! \n\t\tUp
above the world so high, \n\t\tLike a diamond in the sky. \nTwinkle, twinkle, little star, \n\tHow
I wonder what you are!\n\n");
    }
}

```

1. Java's defining characteristics come from?

- a. It's a newly created language
- b. It's predecessors
- c. None of the above
- d. a&b

2. Java derives it's syntax from and many of Java's object-oriented features were influenced by.....?

3. Java?

- a. Platform-dependent
- b. Platform-independent

Oops in Java

8. Which type of programming language is Java?
- a. Process-oriented model
 - b. Object-oriented programming
9. Write a simple Java program to print the statement "This is My First Java program"?
10. What is the return type of program's main() method?
11. What is the argument type of program's main() method?
12. Which of the following signatures are valid for the main() method entry point of an application?
- a. public static void main()
 - b. public static void main(String arg[])
 - c. public void main(String [] arg)
 - d. public static void main(Stering[] arg)
 - e. public static int main(String [] arg)

Lab 2

Java keywords

13. Name two keywords in Java that are reserved but not used?
14. Choose the valid keywords from those listed below?
- a. bytes
 - b. byte



c. import

d. finalist

Operators

15. What are the operators used in Java?

16. Write a program to print the remainder of division operation (22/10 & 22.25/10)?

17. Write a program to demonstrate several assignment operators (+, -=, *=, /=)?

18. int a = 1;

int b = 2;

int c;

int d;

c = ++b;

d = a++;

c++;

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What is the value of c and d after executing this code?

19. a = 4; b = 1; Boolean c = a < b; Value of c?

a. true

b. false

c. 1

d. 4

20. Choose valid statements in java?

a. if(!done)

b. if(done)

c. if(done == 0)

d. if(done != 0)



21. a = true, b = false

c = a | b;

d = a & b;

e = a ^ b;

f = (! a & b) | (a & ! b);

g = ! a;

What is the value of c, d, e, f, and g?

22. a = 20; b = 10;

x = a > b ? a : b;

What is the value of x?

a. 10

b. 20

c. 30

23. Write Java assignment statements to evaluate the following equations.

a. Area = $\pi r^2 + 2\pi rh$

b. Energy = mass (acceleration*height + velocity²/2)

24. Write a Java program to find area and perimeter of a square and rectangle?

25. Write a program to find out biggest number out of three numbers using relational and short-circuit OR and AND operators?

26. Write a program to swap of two integers without using temporary variable?

Lab 3

Control Statements

27. What are the three categories of control statements?
28. Write a program that uses an if-else-if ladder to determine which season a particular month is in?
29. Write a program that uses a switch case to determine given character is vowel or not?
30. Write a program that uses a switch case to determine which season a particular month is in?
31. Write a program for four-function calculator using switch case?(add,sub,mul,div)

Lab 4

Using while loop

32. Write a program to determine given number is prime or not?

(Hint -Prime number: A number only divided by itself and 1)

33. Write a program to find even number up to range?
34. Write a program to find average of odd number below range?
35. Write a program to find midpoint of 100 and 200?
36. Write a program for palindrome using while loop? (write for both string and numbers)

(Hint: Given number are 125 to print 521

125 is not a palindrome) or (liril reverse is lilri)

37. Write a program to find sum of digits of a number.

(Hint : $12345 = 1+2+3+4+5 = 15$)

38. Write a program for Fibonacci series

(Hint :Give number is 6. To print this format 0 1 1 2 3 5)

39. Write multiplication tables using do-while loop?
40. Write a program to determine given number is prime or not using for loop?

41. Write a program to print the format below using nested for loop

1	0
2 3	0 0
4 5 6	0 0 0
7 8 9 10 and	0 0 0

Lab 5

Array

42. Write a program to print array elements in reverse order.

43. Write a program to find Biggest and Lowest element of an array.

44. Write a program to swap two arrays without using temporary variable.

Lab 6

Class and methods

45. Design a class to represent a bank account including the following members.

Data members

Name of the depositor

Account number

Type of account

Balance amount in the account

Methods

To assign a initial values

To deposit an amount after checking balance

To display the name and balance

46. Modify the above program (55) to incorporate a constructor to provide initial value and using *this* keyword.
47. Write a program for arithmetic operation using method overloading?
48. Write the above (57) program using overloading constructors?
49. Write a simple program find the volume of Box using method calls?
50. Write Example program – Inheritance and multilevel inheritance?
51. Write a program to print the integer value using method overriding and super keyword?
52. Design a package to display the name and account balance using array of object?
53. Write an above program (62) using import package?
54. Write a simple interface program to print an integer value using access implementation through interface references?

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