



1401102-3  
Computer Programming  
First Term: 2018



Chapter 7- Methods Exercises

**Lecturer: I.Rua Alsuroji**

- **Exercise 1\_1:** Write a method that read an input from a user

```
public static void main(String[] args)
{
System.out.println ("Enter an integer number: ");
readUser ();
}
```

```
public static void readUser()
{
Scanner keyboard = new Scanner(System.in);
int input= keyboard.nextInt();

System.out.println (input);
}
```

- **Exercise 1\_2:** Write a Java method that read an input from a user

```
public static void main(String[] args)
{
System.out.println ("Enter an integer number: ");
int returnedValue= readUser();

System.out.println ("The value you Entered is: "+returnedValue);
}
```

```
public static int readUser()
{
Scanner keyboard = new Scanner(System.in);
int input= keyboard.nextInt();

System.out.println (input);
return input;
}
```

- **Exercise 2:** Write a Java method that check if the entered number is **negative or positive or zero.**

```
public static void main(String[] args) {  
    System.out.println("Enter a number to check: ");  
    Scanner keyboard=new Scanner(System.in);  
  
    int n =keyboard.nextInt();  
    checkNum(n);  
}
```

```
public static void checkNum(int num) {  
  
    if(num < 0)  
        System.out.println(num+" is a negative number");  
  
    else if (num > 0)  
        System.out.println(num+" is a positive number");  
  
    else  
        System.out.println(num+" is Zero");  
}
```

## Exercise 3\_1: Write a Java method to find the smallest number among three entered numbers.

```
public static void main(String[] args){
Scanner in = new Scanner(System.in);

System.out.print("Input the first number: ");
double x = in.nextDouble();

System.out.print("Input the Second number: ");
double y = in.nextDouble();

System.out.print("Input the third number: ");
double z = in.nextDouble();

System.out.print("The smallest value is " + smallest(x, y, z));
}
```

## Exercise 3\_1: cont

```
public static double smallest(double n1, double n2, double n3) {  
  
    if((n1 < n2) && (n1 < n3))  
        return n1;  
  
    else if (n2 < n3)  
        return n2;  
  
    else  
        return n3;  
  
}
```

## Exercise 3\_2: Write a Java method to find the smallest number among three entered numbers.

```
public static void main(String[] args) {
    Scanner in = new Scanner(System.in);

    System.out.print("Input the first number: ");
    double x = in.nextDouble();

    System.out.print("Input the Second number: ");
    double y = in.nextDouble();

    System.out.print("Input the third number: ");
    double z = in.nextDouble();

    System.out.print("The smallest value is " +
        smallest(x, y, z));
}
```

```
public static double smallest(double x, double y, double z)
{ return Math.min(Math.min(x, y), z); }
```

## Exercise 4: Write a Java method to compute the average of three numbers

```
public static void main(String[] args){
Scanner in = new Scanner(System.in);

System.out.print("Input the first number: ");
double x = in.nextDouble();

System.out.print("Input the Second number: ");
double y = in.nextDouble();

System.out.print("Input the third number: ");
double z = in.nextDouble();

System.out.print("The average is: " + avg(x, y, z));
}
```

```
public static double avg(double x, double y, double z) {
return (x+y+z)/3;
}
```



**Exercise 5: Write a Java method to display the middle character of a string.**

a) If the length of the string is odd there will be two middle characters.

b) If the length of the string is even there will be one middle character.

```
public static void main(String[] args) {
Scanner in = new Scanner(System.in);

System.out.print("Input a string: ");
String str = in.nextLine();

System.out.print("The middle character in the string: "+ middle(str));
}
```

## Exercise 5: cont

```
public static String middle(String str) {  
  
    int length= str.length();  
    int position, sublength;  
  
    if (length % 2 == 0) {  
        position = length / 2 - 1;  
        sublength = 2; }  
  
    else {  
        position = length / 2;  
        sublength = 1; }  
  
    return str.substring(position, position + sublength);  
}
```

## Exercise 6: Write a Java method to count all vowels in a string.

```
public static void main(String[] args) {
Scanner in = new Scanner(System.in);

System.out.print("Input a string: ");
String str = in.nextLine();

System.out.print("Number of Vowels in the string: " +
count_Vowels(str));
}
```

## Exercise 6: cont

```
public static int count_Vowels(String str) {
    int count = 0;
    int length= str.length();

    for (int i = 0; i < length; i++) {

        if (str.charAt(i) == 'a' || str.charAt(i) == 'e' ||
            str.charAt(i) == 'i' || str.charAt(i) == 'o' || str.charAt(i)
                == 'u')
            count++; } //end if

    } //end loop

    return count;
}
```

## Exercise 7: cont

```
public static int count_Words(String str) {
    int count = 0;

    for (int i = 0; i < str.length(); i++) {
        if (str.charAt(i) == ' ')
            count++;
    }
    count = count + 1; }

return count; // returns 0 if string starts or ends with space " ".
}
```

## Exercise 7: Write a Java method to count all words in a string

```
public static void main(String[] args) {  
    Scanner in = new Scanner(System.in);  
  
    System.out.print("Input a string: ");  
    String str = in.nextLine();  
  
    System.out.print("Number of Words in the string: " +  
        count_Words(str));  
}
```

## Exercise 8: Write a Java method to find a chosen math operation for two given numbers using the built\_in java methods

```
public static void main(String[] args)
{
double x = 16, y = 4;

Scanner input= new Scanner(System.in);

System.out.println("Choose the number of the math
operation you want to apply on X="+x+", Y="+y);

System.out.println("1- The maximum. \n2- The minimum.
\n3- The square root. \n4- X power to Y. \n5- The
logarithm.");
int n= input.nextInt();

mathCal(x,y,n);
```

```
public static void mathCal (double x, double y, int n) {
switch(n){
case 1:
{System.out.println("Maximum number of x and y is: " +Math.max(x, y));
break;}
case 2:
{System.out.println("Minimum number of x and y is: " +Math.min(x, y));
break;}
case 3:
{System.out.println("Square root of x is: " + Math.sqrt(x) + "\nSquare
root of y is: " + Math.sqrt(y)); break;}
case 4:
{System.out.println("Power of x and y is: " + Math.pow(x, y)); break;}
case5:
{System.out.println("Logarithm of x is: " + Math.log(x) + "Logarithm of
y is: " + Math.log(y)); break;}
} // end switch
} // end method
```



## HW:

Write a Java method to check whether an entered string is a valid password.

Password rules:

- A password must have at least eight characters, and
- A password must consists of only letters and digits.

Sample Output:

1. A password must have at least eight characters.
2. A password must consists of only letters and digits.

Enter now:

abcd1234

The Password you entered is valid.

+ Any Questions??

