



First program in java:

```
1 public class TestBasics {
2
3
4     public static void main(String[] args) {
5
6         System.out.println("welcom in java");
7         System.out.println("programing is fun ");
8
9     }
10
11 }
```

- شروط الأسماء
- 1- لا تبدأ بأرقام
 - 2- لا تحتوي مسافات
 - 3- لا تحتوي رموز خاصة special symbols +=)({}[]<>
 - 4- \$ _ مسوح ال
 - 5- ممنوع استخدام reserved word (key word)

Comment :

```
// mona al harbi in one line
Or to write multiple lines
/*
Ksdjflsdjfk
Lskjfdldfj
Lsdkjflksjdfldsif
*/
```

Find out put ??

```
System.out.println("A");
//System.out.println("B");
System.out.println("C");
```

output:

A
C

```
System.out.println(" ");    تطبع ثم تنزل سطر
System.out.print(" ");      تطبع ثم لا تنزل سطر
```

```
\n    new line
\t    مسافة tab
\b    حذف حرف للخلف
\\    طباعة \
\"    طباعة "
\r    البدء من بداية السطر
```

==

<pre> Find out put : 4 public class P1 { 5 6 public static void main(String[] args) { 7 8 System.out.println("hello in java "); 9 System.out.println("welcom \n mona "); 10 System.out.println("java \t programin "); 11 System.out.println(); 12 System.out.print("end\b the program "); 13 System.out.println("Good by"); 14 15 } 16 17 } </pre>	<pre> Output : hello in java welcom mona java programin en the program Good by </pre>
<pre> 1 // <u>write statment to print the following in java</u> 2 3 hello Mr \ omar 4 System.out.println("Hello Mr \\ omar"); 5 6 hello "Amal" in java 7 System.out.println("hello \" Amal \" in java "); </pre>	<pre> Find out put : System.out.println("one \r tow three"); tow three System.out.println("one \r tow \r three"); three </pre>
<pre> 1 System.out.println("area = 3 * 5"); 2 <u>area = 3 * 5</u> 3 System.out.println("area = " + 3 * 5); 4 <u>area = 15</u> 5 System.out.println("area = " + 3 + 5); 6 area = 3 5 7 System.out.println("area = " + (3 + 5)); 8 area = 8 </pre>	<pre> 9 System.out.println(3 + 5 + " area ***"); 10 8 area *** </pre>

====

<pre> 4 public class P2 { 5 6 public static void main(String[] args) { 7 8 int len = 9 ; 9 int wed = 10 ; 10 11 int area = len * wed ; 12 int primeter = (len + wed) * 2 ; 13 System.out.println("Area of rectangle = " + area); 14 System.out.println("primeter of rectangle = " + primeter) ; 15 16 } 17 18 } 19 </pre>	<p><u>Output :</u> Area of rectangle = 90 primeter of rectangle = 38</p>
<pre> Variables : 6 int i = 8 ; 7 int i = 8.3 ; 8 int i3 = 10 + 5 ; 9 double x = 9.3 ; 10 double x = 9 ; 11 12 char ch = 'a' ; 13 char ch = "a" ; 14 char ch = 'ab' ; 15 char ch = '*' ; 16 char ch = ' ' ; 17 char ch = '9' ; 18 char ch = '65' ; </pre>	<pre> Char ch = 65; System.out.println(ch); //A System.out.println('A'); //A System.out.println('A' + 'B'); //131 System.out.println("" + 'A' + 'B'); // AB String str = "hello" ; String str = 2344 ; String str = "" + 23434 ; String str = "334" ; String str = "Omar" + " - " + "Ali" ; System.out.println(str) ; //Omar - Ali System.out.println("str") ; //str </pre>

<pre> 21 boolean b = true ; 22 boolean f = false ; 23 24 boolean bol = 4 < 10 ; System.out.println(bol) ; // true float x = 3.4f; </pre>	<pre> 6 byte x = 10 ; ✓ 7 int y = x ; ✓ 8 int y2 = 6; ✓ 9 byte x2 = y2; X 10 boolean bol = "true" ; X </pre>
<p>انواع الأرقام الصحيحة</p> <pre> byt short int long ===== </pre> <p>انواع العشرية</p> <pre> float double </pre>	<p>انواع الحرفية</p> <pre> char String ===== </pre> <p>المنطقية logic :</p> <pre> boolean </pre>

Scanner **** input

```
4 import java.util.Scanner;
5
6 public class P3ReadLenAndWed {
7
8     public static void main(String[] args) {
9
10        Scanner read = new Scanner(System.in) ;
11
12        System.out.println("Pleas Enter length and wedth ");
13        double len = read.nextDouble() ;
14        int wed = read.nextInt() ;
15
16        double area = len * wed ;
17        double primeter = ( len + wed ) * 2 ;
18        System.out.println("Area of rectangle = " + area);
19        System.out.println("primeter of rectangle = " +
primeter ) ;
20
21    }
22
23 }
24
```

Output

```
Pleas Enter length and wedth
4
6
Area of rectangle = 24
primeter of rectangle = 20
```

=====

```
4 import java.util.Scanner ;
5
6 public class program {
7
8
9 public static void main(String[] args) {
10
11 Scanner input = new Scanner(System.in) ;
12
13 System.out.print("enter your name : ");
14 String s = input.nextLine() ;
15 System.out.print("enter your nationality");
16 String national = input.next() ;
17 System.out.print("enter birth year ");
18 int y = input.nextInt() ;
19
20 System.out.print("enter your gender f or m ");
21 char ch = input.next().charAt(0) ;
22
23
24 System.out.println("your name is " + s );
25 System.out.print("nationality is : " + national);
26 System.out.println("age = " + (2016 - y) );
27
28 }
29
30 }
```

output :

```
enter your name : maha
enter your nationality Saudi
enter birth year 1990
enter your gender f or m f
your name is maha
nationality is Saudi
age = 26
```

<p>اولويات العمليات الحسابية precedence</p> <p>() / * % + - =</p>	<pre>28 System.out.println(5 / 2); //2 29 System.out.println(5 % 2); //1 30 System.out.println(5.0 / 2); //2.5 31 32 33 System.out.println(34 / 5); // 6 34 System.out.println(34 % 5); // 4 35 System.out.println(34.0 / 5); // 6.8</pre>
<p>قانون</p> <pre>37 System.out.println(-34 / 5); // -6 38 System.out.println(-34 % 5); // -4 39 40 41 System.out.println(2 / 10); // 0 42 System.out.println(2 % 10); // 2</pre>	<pre>System.out.println(3*7-6+2*5/4+6); // 23 System.out.println(4 + 6 * 7) ; // 46 System.out.println((4 + 6) * 7) ; // 70</pre>
<p>// Print last digit in num</p> <pre>System.out.println(num % 10) ; Delet last digit of num num = num / 10 ;</pre>	<p>Print num of 3 digit in revers order :</p> <pre>1 import java.util.* ; 2 public class test1 3 { 4 public static void main(String args[]) 5 { 6 Scanner input =new Scanner(System.in) ; 7 System.out.println("Enter number of 3 digit"); 8 int num = input.nextInt() ; 9 int n1 , n2 , n3 ; 10 n1 = num % 10 ; 11 num = num / 10 ; 12 13 n2 = num % 10 ; 14 num = num / 10 ; 15 16 n3 = num % 10 ; 17 num = num / 10 ; 18 19 20 System.out.println(n1 + " " + n2 + " " + n3) ; } }</pre>

Variables : <pre>int a = 10 ; a = a + 3 ; System.out.println(a) ; // 13</pre>	Constants : <pre>final int a = 10 ; a = a + 3 ; // <u>error can't modify on final identifiers</u> System.out.println(a) ;</pre>
<pre>++ -- int a = 3 ; a++ ; // add one only a-- // subtract one only</pre>	<pre>all statement is correct to increment a by one a = a + 1 ; a++; ++a ; a += 1 ;</pre>
<pre>int a = 3 ; a++ ; or ++a; or a-- ; or --a ; // legal but all of this is error : ++a++ or 3++ or (4+5)++ or (a + b)++</pre>	<pre>int a = 3 ; System.out.println(a) ; // 3 a++ ; System.out.println(a) ; //4 ++a ; System.out.println(a) ; //5 System.out.println(a++) ; // 5 System.out.println(a) ; // 6 System.out.println(++a) ; // 7 System.out.println(a) ; // 7</pre>
<pre>int a=3 ; int B = a++;</pre>	<pre>int a=3 ; int B = ++a;</pre>
<pre>int a=3 ; int B = 2+ a++;</pre>	<pre>int a=3 ; int B = 2+ ++a;</pre>
<pre>int a=3 ; System.out.println("a = " + a++) ; // a= 3 System.out.println(a) ; // 4</pre>	<pre>int a=3 ; System.out.println("a = " + (a + 1)) ; // a= 4 System.out.println(a) ; // 3</pre>

<pre>Char ch = 'A' ; //each character in java has Unicode or Ascii code Ch++; System.out.println(ch) ; // B</pre>	<pre>a = 5 ; System.out.println(a++ * 5 + a + 2) ; Answer : 33</pre>
<pre>a=3 21 System.out.println(++a == a++) ; true 22 System.out.println(++a == ++a) ; false 23 System.out.println(a++ == ++a) ; false 24 System.out.println(a++ == a++) ; false</pre>	<p>إشارة -- ، ++ لها أولوية على == سواء كانت قبل أو بعد</p>
<pre>int a = 10 ; a = a + 3 ; or a += 3 ; a = a * 5 ; or a *= 5 ; a = a - 4 ; or a -= 4 ; a = a / 3 ; or a /= 3 ;</pre>	<p>الاختصارات لها اولوية في النهاية بعد كل العمليات</p> <pre>int a = 3 ; a = a * 2 + 5 ; // a = 11 ----- int a = 3 ; a *= 2 + 5 ; // 21</pre>
<p>Casting تحويل</p> <pre>double num = 5.3 ; int a = (int) num ; // a = 5</pre>	<pre>System.out.println((double) (15 / 2)) ; System.out.println((double) (15) / 2) ;</pre>
<pre>char ch = 'A' ; System.out.println((int) ch) ; // 65 System.out.println((char) 65) ; // A</pre>	<pre>5 / 2 5 / (double) 2</pre>

Printf (print format)

%n new line
 % s حجز مكان لنص string
 % d int
 % f double
 % c char
 % b boolean
 %% طباعة %

```

6 String str = "Maha" ;
7 int g = 20 ;
8 double score = 4.237 ;
9 char gen = 'f' ;
10
11 System.out.printf("Name is %s and age = %d %n" , str , g );
12 // Name is Maha and age = 20
13
14 System.out.printf("Name is%8s age=%7d %n" , str , g );
15 //

```

N	a	m	e		i	s				M	a	h	a		a	g	e	=					2	0				
---	---	---	---	--	---	---	--	--	--	---	---	---	---	--	---	---	---	---	--	--	--	--	---	---	--	--	--	--

```

16
17 System.out.printf("Name is%-8s-grade=%.2f %n" , str , score );
18 //

```

N	a	m	e		i	s		M	a	h	a					-	g	r	a	d	e	=	4	.	2	4				
---	---	---	---	--	---	---	--	---	---	---	---	--	--	--	--	---	---	---	---	---	---	---	---	---	---	---	--	--	--	--

```

20 System.out.printf("grade = %8.2f %n " , score );
21 grade = 4.24

```

g	r	a	d	e		=						4	.	2	4													
---	---	---	---	---	--	---	--	--	--	--	--	---	---	---	---	--	--	--	--	--	--	--	--	--	--	--	--	--

Read number of seconds from user then find how many Hour , minuts and seconds

```
import java.util.Scanner;
public class JavaApplication43 {
    public static void main(String[] args) {
Scanner input = new Scanner(System.in) ;
    System.out.println("enter number of seconds  ");
        int sec = input.nextInt() ;

        int hr = sec / 3600 ;

        sec = sec % 3600 ;

        int min = sec / 60 ;

        sec = sec % 60 ;

        System.out.println(hr + ":" + min  + ":" + sec );

    }
}
=====
```

read number of cookies from user then find how many box you need and how many remain cookies, each box can hold 36 cookies .

```
import java.util.Scanner ;
public class test {

    public static void main(String[] args) {
Scanner input = new Scanner(System.in) ;
        System.out.println("enter number of cookies ");
        int num = input.nextInt()    ;

        int numBox = num / 36 ;

        int remain = num % 36 ;

        System.out.println("num of box = " + numBox );
        System.out.println("remain cookies with out boxing " + remain );
    }

}
```

=====

swap : suppose you hava 2 integer a ana b swap it :

```
int temp = a ;
a= b ;
b= temp
```

