* To check whether the number is **prime number:**

**package** programs\_on\_numbers;

**public** **class** PrimeNumber {

**public** **static** **void** main(String[] args) {

**int** number=11;

**int** c=0;

**for** (**int** i=2 ; i<=number ;i++) {

**if**(number%i==0) {

c++;

}

}

**if**(c==1) {

System.***out***.println(number + " : is a prime number");

}

**else** {

System.***out***.println(number + " : is not a prime number");

}

}

}

**Output :** 11 : is a prime number

* Print prime number that lies between 50 to 100 : **Prime Number between Range**

**package** programs\_on\_numbers;

**public** **class** PrimeNumberBetweenRange {

**public** **static** **void** main(String[] args) {

**int** number =100;

**int** c=0;

System.***out***.print("Prime numbers are :");

**for** (**int** i=50 ; i<=number ;i++) {

**for** (**int** j=2 ; j<=i ; j++) {

**if**(i%j==0) {

c++;

}

}

**if** (c==1) {

System.***out***.print(" "+ i);

}

**else** {

c=0;

}

}

}

}

**Output :** Prime numbers are : 53 59 61 67 71 73 79 83 89 97

* To reverse the given number : **Reverse Number**

**package** programs\_on\_numbers;

**public** **class** ReverseNumber {

**public** **static** **void** main(String[] args) {

**int** number = 12345;

**int** rev =0;

**int** rem;

**int** i=1;

**while** (i<=number) {

rem = number%10;

rev = rev\*10 + rem;

number = number/10;

}

System.***out***.println("Reverse number is : " + rev);

}

}

**Output :** Reverse number is : 54321

* Swap the given Numbers : **Swap number**

**package** numberProgram;

**public** **class** SwapNumber {

**public** **static** **void** main(String[] args) {

**int** a=12;

**int** b=13;

**int** c;

c=a;

a=b;

b=c;

System.***out***.println("The value of a is:"+a);

System.***out***.println("The value of b is "+b);

}

}

**Output:** The value of a is:13

The value of b is:12

* To print whole number within a given range : **whole Number**

**package** programs\_on\_numbers;

**public** **class** WholeNumber {

**public** **static** **void** main(String[] args) {

**int** a=15;

System.***out***.print("Whole numbers are : ");

**for**(**int** b=0;b<=a;b++) {

System.***out***.print(" "+ b);

}

}

}

**Output :** Whole numbers are : 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

* To print Natural number within a given range : **Natural Number**

**package** programs\_on\_numbers;

**public** **class** NaturalNumbers {

**public** **static** **void** main(String[] args) {

System.***out***.print("Natural numbers are : ");

**int** a=20;

**for** (**int** b=1; b<=a; b++) {

System.***out***.print(" "+b);

}

}

}

**Output :** Natural numbers are : 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

* To print Odd number within a given range : **Odd Number**

**package** numberProgram;

**public** **class** Oddnumber {

**public** **static** **void** main(String[] args) {

**int** number = 20;

System.***out***.print("Odd numbers are : ");

**for** (**int** i=0 ; i<=number ; i++) {

**if** (i%2==0) {

System.***out***.print(" " + i);

}

}

}

}

**Output :** Odd numbers are : 0 2 4 6 8 10 12 14 16 18 20

* To print ODD-EVEN numbers within a given range : **ODD EVEN NUMBER**

**package** numberProgram;

**public** **class** OddevenNumber {

**public** **static** **void** main(String[] args) {

**for** (**int** a=1; a<=20; a++) {

**if** (a%2==0) {

System.***out***.println("This is even number "+ a);

}

**else** {

System.***out***.println("This is odd number :"+ a);

}

}

}

}

**Output :**

This is odd number :1

This is even number 2

This is odd number :3

This is even number 4

This is odd number :5

This is even number 6

This is odd number :7

This is even number 8

This is odd number :9

This is even number 10

This is odd number :11

This is even number 12

This is odd number :13

This is even number 14

This is odd number :15

This is even number 16

This is odd number :17

This is even number 18

This is odd number :19

This is even number 20

* To print Fibonacci series numbers within a given range : **Fibonacci series**

**package** numberProgram;

**public** **class** FibonnasiSeries {

**public** **static** **void** main(String[] args) {

**int** m=12;

**int** a=0;

**int** b=1;

**int** c;

**int** i=0;

System.***out***.print("FibonnasiSeries is as :");

**while** (i<=m) {

c=a+b;

a=b;

b=c;

i++;

System.***out***.print(" " +c);

}

}

}

**Output :** FibonnasiSeries is as : 1 2 3 5 8 13 21 34 55 89 144 233 377

* To check whether the given number is palindrome or not : **Palindrome Number**

**package** programs\_on\_numbers;

**public** **class** PalindromeNumber {

**public** **static** **void** main(String[] args) {

**int** number=121;

**int** rem;

**int** rev=0;

**int** i=0;

**int** pal = number;

**while** (i<number) {

rem=number%10;

rev=rev\*10+rem;

number=number/10;

}

System.***out***.println(rev);

**if** (rev == pal) {

System.***out***.println(rev + " : is a palindrome number");

}

**else** {

System.***out***.println(rev + " : is not a palindrome number");

}

}

}

**Output :** 121

121 : is a palindrome number

* To print factorial of given number : **Factorial**

**package** programs\_on\_numbers;

**public** **class** FactorialNumber {

**public** **static** **void** main(String[] args) {

**int** number=5;

**int** fact=1;

**for** (**int** i=1;i<=number;i++) {

fact =fact\*i;

}

System.***out***.println("Factorial of the "+ number + " is :" + fact);

}

}

**Output :** Factorial of the 5 is :120

* To check whether the given number is Armstrong number : **Armstrong number**

**package** programs\_on\_numbers;

**public** **class** AromstrongNumber {

**public** **static** **void** main(String[] args) {

**int** number = 1634 ;

**int** rev =0 ;

**int** rem ;

**int** arms = number ;

**while** (number > 0) {

rem = number % 10 ;

rev = rev + rem \*rem \* rem \* rem;

number = number / 10 ;

}

System.***out***.println(rev);

**if** (rev ==arms) {

System.***out***.println(rev + " is a armstrong number");

}

**else** {

System.***out***.println(rev+ " is not a armstrong number");

}

}

}

**Output :** 1634

1634 is a armstrong number

* Print numbers 1\_10 without using for loop :

**package** programs\_on\_numbers;

**public** **class** Print1\_10WithoutUsingForLoop {

**public** **void** myMethod(**int** a){

**if**(a<=10){

System.***out***.println(a);

myMethod(a+1);

}

}

**public** **static** **void** main(String[] args) {

Print1\_10WithoutUsingForLoop w = **new** Print1\_10WithoutUsingForLoop();

w.myMethod(1);

}

}

**Output :**

1

2

3

4

5

6

7

8

9

10

* Find Largest Number from given Number **: Largest Number**

**package** programs\_on\_numbers;

**public** **class** Largest\_Number {

**public** **static** **void** main(String[] args) {

**int** a=56;

**int** b=567;

**int** c =36;

**int** d= 389;

**if**(a>b&& a>c&&a>d)

{

System.***out***.println(a+ " is a largest number");

}

**else** **if**(b>a&& b>c&&b>d)

{

System.***out***.println(b+ " is a largest number");

}

**if**(c>a&& c>b&&c>d)

{

System.***out***.println(c+ " is a largest number");

}

**else** **if**(d>a&& a>b&&a>c)

{

System.***out***.println(d+ " is a largest number");

}

}

}

**Output :**

567 is a largest number

* How to compare the numbers (find big one ) without using if else condition:

**package** programs\_on\_numbers;

**public** **class** CompareNumberWithoutUsingIFCondition {

**public** **static** **void** main(String args[])

{

**int** x=10;

**int** y=20;

**int** max = (x >y) ? x : y;

System.***out***.println("The largest numbers is: "+max);

}

}

**Output :** The largest numbers is: 20

* To print sum of all even numbers from 1 to 15 : **SUM OF EVEN NUMBERS**

**package** programs\_on\_numbers;

**public** **class** EvenNumberSum {

**public** **static** **void** main(String args [ ])

{

**int** i,sum=0;

**for**(i=1;i<=15;i++)

{

**if**(i%2==0)

{

sum=sum+i;

}

}

System.***out***.println("Final sum value is: "+sum);

}

}

**Output :** Final sum value is: 56

* To print product of all even numbers from 1 to 10: **PRODUCT OF EVEN NUMBERS**

**package** programs\_on\_numbers;

**public** **class** EvenNumbersProduct {

**public** **static** **void** main(String args [ ])

{

**int** i,product=1;

**for**(i=1;i<=10;i++)

{

**if**(i%2==0)

{

product=product\*i;

}

}

System.***out***.println("Final product value is: "+product);

}

}

Output : Final product value is: 3840

* To swap two numbers without using third variable : **SWAP WITHOUT** **USING THIRD VARIABLE**

**package** programs\_on\_numbers;

**public** **class** SwapWithoutUsingThirdVariable {

**public** **static** **void** main(String[] args) {

**int** a=10;

**int** b=20;

a=a+b; //a=10+20---->a=30

b=a-b; //b=30-20----->b=10

a=a-b; //a=30-10------>a=20

System.***out***.println("After swapping : " +a+ " " +b);

System.***out***.println("Value of a is :" + a);

System.***out***.println("Value of a is :" + b);

}

}

**OUTPUT :** After swapping : 20 10

Value of a is :20

Value of a is :10

**Pattern Programs :**

**Pattern 1:**

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**package** patternProgram;

**public** **class** RightAngle {

**public** **static** **void** main(String[] args) {

**for** (**int** a=1;a<=5;a++) {

**for** (**int** b=1; b<=a;b++) {

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

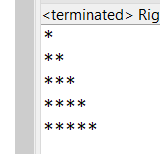
}

System.***out***.println();

}

}

}



**Pattern 2:**

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**package** program\_on\_patterns;

**public** **class** RightAnglePattern2 {

**public** **static** **void** main(String[] args) {

**for**(**int** a=1;a<=5; a++) {

**for** (**int** b=4; b>=a;b--) {

System.***out***.print(" ");

}

**for** (**int** c=1; a>=c; c++) {

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

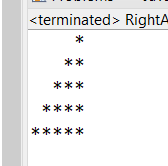
}

System.***out***.println();

}

}

}



**Pattern 3 :**

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**package** patternProgram;

**public** **class** Pyramid {

**public** **static** **void** main(String[] args) {

**for**(**int** a=1;a<=5;a++) {

**for** (**int** b=4; b>=a;b--) {

System.***out***.print(" ");

}

**for** (**int** c=1;a>=c; c++ ) {

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

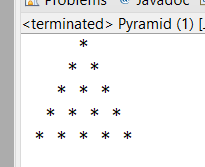
}

System.***out***.println();

}

}

}



**Pattern 4:**

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**public** **class** Pyramid2 {

**public** **static** **void** main(String[] args) {

**for** (**int** a=1;a<=5;a++)

{

**for** (**int** b=4; b>=a;b--)

{

System.***out***.print(" ");

}

**for** (**int** c=1; a>=c;c++)

{

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

}

**for** (**int** d=2; a>=d; d++)

{

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

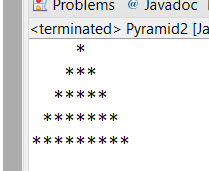
}

System.***out***.println();

}

}

}



**Pattern 5:**

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**public** **class** Pattern {

**public** **static** **void** main(String[] args) {

**for** (**int** a=1; a<=7;a++) {

**for** (**int** b=1; a>=b; b++)

{

System.***out***.print(" ");

}

**for** (**int** c=7; c>=a; c--)

{

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

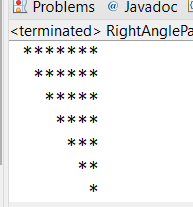
}

System.***out***.println();

}

}

}



**Pattern 6:**

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**public** **class** HollowPattern {

**public** **static** **void** main(String[] args) {

**for** (**int** a=1; a<=5; a++) {

**for** (**int** b=1;b<=5;b++) {

**if** (a>=2 && a<=4 && b>=2 && b<=4) {

System.***out***.print(" ");

}

**else** {

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

}

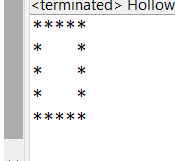
}

System.***out***.println();

}

}

}



**Pattern 7:**

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**public** **class** FullBlock {

**public** **static** **void** main(String[] args) {

**for** (**int** a=1;a<=5;a++) {

**for** (**int** b=1 ; b<=5; b++) {

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

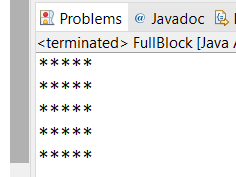
}

System.***out***.println();

}

}

}



**Pattern 8:**

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**public** **class** DownRightAngle {

**public** **static** **void** main(String[] args) {

**for** (**int** a=1;a<=5;a++) {

**for**(**int** b=5; b>=a; b--) {

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

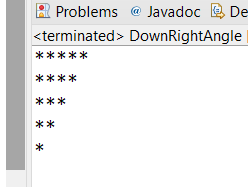
}

System.***out***.println();

}

}

}



**Pattern 9 :**

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**public** **class** DiagonalPattern {

**public** **static** **void** main(String[] args) {

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

{

**for** (**int** j=4;j>i;j--)

{

System.***out***.print(" ");

}

**for** (**int** k=1; k<=i; k++)

{

**if** (i>=2 && k>1)

{

System.***out***.print(" ");

}

**else**

{

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

}

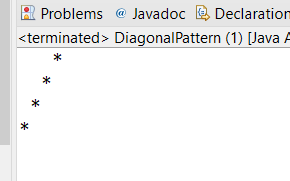
}

System.***out***.println();

}

}

}



**Pattern 10:**

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**public** **class** DiagonalPattern2 {

**public** **static** **void** main(String[] args) {

**for** (**int** a=1; a<=5; a++)

{

**for** (**int** b=1; a>=b; b++) {

**if** (a>=2 && b<=(a-1)) {

System.***out***.print(" ");

}

**else** {

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

}

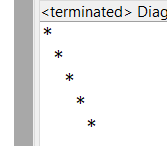
}

System.***out***.println();

}

}

}



**Pattern 11 :**

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**public** **class** Star\_Pattern\_1 {

**public** **static** **void** main(String args[ ])

{

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

{

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

{

**if**(i%2==0) //(i==2||i==4)

{

System.***out***.print("#");

}

**else**

{

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

}

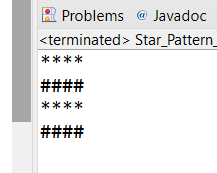
}

System.***out***.println(" ");

}

}

}



**Pattern 12 :**

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\*#\*#

**public** **class** Star\_Pattern\_2 {

**public** **static** **void** main(String args[ ])

{

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

{

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

{

**if**(j==2||j==4)//(j%2==0)

{

System.***out***.print("#");

}

**else**

{

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

}

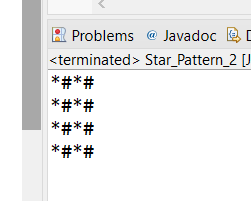
}

System.***out***.println(" ");

}

}

}



**Pattern 13:**

111

222

333

**public** **class** Star\_Pattern\_3 {

**public** **static** **void** main(String args[ ])

{

**for**(**int** i=1;i<=3;i++)

{

**for**(**int** j=1;j<=3;j++)

{

System.***out***.print(i);

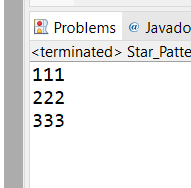
}

System.***out***.println();

}

}

}



**Pattern 14:**

123

123

123

**public** **class** Star\_Pattern\_4 {

**public** **static** **void** main(String args[ ])

{

**for**(**int** i=1;i<=3;i++)

{

**for**(**int** j=1;j<=3;j++)

{

System.***out***.print(j);

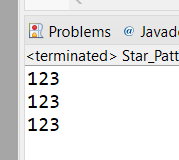
}

System.***out***.println();

}

}

}



**Pattern 15:**

123

456

789

**public** **class** Star\_Pattern\_5 {

**public** **static** **void** main(String args[ ])

{

**int** a=1;

**for**(**int** i=1;i<=3;i++)

{

**for**(**int** j=1;j<=3;j++)

{

System.***out***.print(a);

a++;

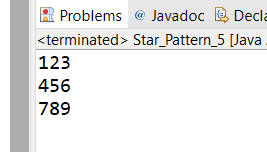
}

System.***out***.println();

}

}

}



**Pattern 16 :**

AAA

BBB

CCC

**public** **class** Star\_Pattern\_6 {

**public** **static** **void** main(String args[ ])

{

**char** ch='A';

**for**(**int** i=1;i<=3;i++)

{

**for**(**int** j=1;j<=3;j++)

{

System.***out***.print(ch);

}

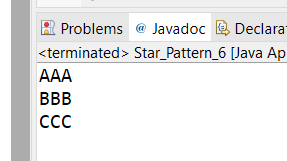
ch++;

System.***out***.println();

}

}

}



**Pattern 17:**

ABC

ABC

ABC

**public** **class** Star\_Pattern\_7 {

**public** **static** **void** main(String args[ ])

{

**for**(**int** i=1;i<=3;i++)

{

**char** ch='A';

**for**(**int** j=1;j<=3;j++)

{

System.***out***.print(ch);

ch++;

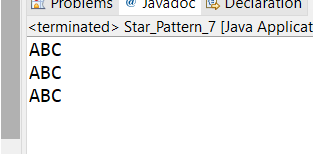
}

System.***out***.println();

}

}

}



**Pattern 18:**

ABC

DEF

GHI

**public** **class** Star\_Pattern\_8 {

**public** **static** **void** main(String args[ ])

{

**char** ch='A';

**for**(**int** i=1;i<=3;i++)

{

**for**(**int** j=1;j<=3;j++)

{

System.***out***.print(ch);

ch++;

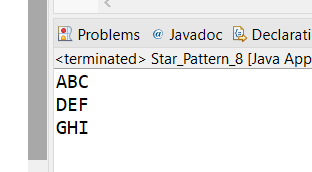
}

System.***out***.println();

}

}

}



**Pattern 18 :**

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\*

**public** **class** Pyramid3 {

**public** **static** **void** main(String args[ ])

{

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

{

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

{

**if**(i<=j)

{

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

}

**else** {

System.***out***.print(" ");

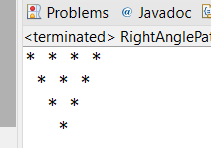
}}

System.***out***.println();

}

}

}



**Pattern 20:**

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\*

**public** **class** Pyramid4 {

**public** **static** **void** main(String args[])

{

**int** star=7,space=0;//(spaces before star)

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

{

**for**(**int** j=1;j<=space;j++)

{

System.***out***.print(" ");

}

**for**(**int** k=1;k<=star;k++)

{

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

}

star=star-2;

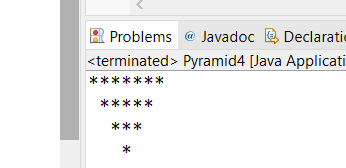
space=space+1;

System.***out***.println(" ");

}

}

}



**Pattern 21 :**

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**public** **class** Star\_Pattern\_9 {

**public** **static** **void** main(String args[])

{

**int** star=1,space=3;

**for**(**int** i=1;i<=7;i++)

{

**for**(**int** j=1;j<=space;j++)

{

System.***out***.print(" ");

}

**for**(**int** k=1;k<=star;k++)

{

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

}

**if**(i<=3 )

{

star=star+2;

space=space-1;

}

**else** {

star=star-2;

space=space+1;

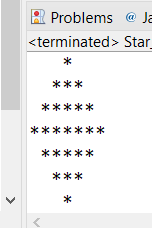
}

System.***out***.println(" ");

}

}

}



**Pattern 22:**

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**public** **class** Star\_Pattern\_10 {

**public** **static** **void** main(String args[])

{

**int** star=5,space=0;

**for**(**int** i=1;i<=5;i++)

{

**for**(**int** j=1;j<=space;j++)

{

System.***out***.print(" ");

}

**for**(**int** k=1;k<=star;k++)

{System.***out***.print("\*");

}

**if**(i<=2 )

{

star=star-2;

space=space+1;

}

**else** {

star=star+2;

space=space-1;

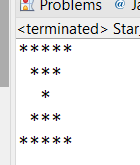
}

System.***out***.println(" ");

}

}

}



**Pattern 23:**

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**public** **class** Star\_Pattern\_11 {

**public** **static** **void** main(String args[])

{

**int** star=1,space=0;

**for**(**int** i=1;i<=7;i++)

{

**for**(**int** k=1;k<=star;k++)

{

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

}

**if**(i<=3 )

{

star=star+1;

}

**else** {

star=star-1;

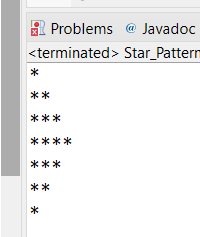
}

System.***out***.println(" ");

}

}

}



**Pattern 24:**

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**public** **class** Star\_Pattern\_12 {

**public** **static** **void** main(String args[])

{

**int** star=1,space=3;

**for**(**int** i=1;i<=7;i++)

{

**for**(**int** j=1;j<=space;j++)

{

System.***out***.print(" ");

}

**for**(**int** k=1;k<=star;k++)

{

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

}

**if**(i<=3 )

{

star=star+1;

space=space-1;

}

**else** {

star=star-1;

space=space+1;

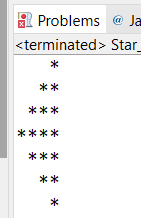
}

System.***out***.println(" ");

}

}

}



**ARRAY PROGRAMS:**

* To find Array Frequency of **Odd-Even Number:**

**public** **class** Array\_Frequency\_Odd\_Even {

**public** **static** **void** main(String[] args) {

**int** a[]= {1,2,5,6,8,9};

**int** even=0;

**int** odd=0;

**for**(**int** i=0; i<a.length; i++)

{

**if**(a[i]%2==0)

{

even++;

}

**else**

{

odd++;

}

}

System.***out***.println("Frequency of even no : " +even);

System.***out***.println("Frequency of odd no : "+odd);

}

}

**Output :**

Frequency of even no : 3

Frequency of odd no : 3

* To find sum of Array Elements **:SUM**

**public** **class** SUM\_OF\_ARRAY\_ELEMENTS {

**public** **static** **void** main(String[] args) {

**int** a[] = {10,15,7,20,55,87,18,47};

**int** sum=0;

**for**(**int** i=0; i<a.length; i++)

{

sum= sum + a[i];

}

System.***out***.println("Sum of all Array Elements is : " +sum);

}

}

OUTPUT :

Sum of all Array Elements is : 259

* To find AVG of Array Elements **:AVG**

**public** **class** AVG\_ARRAY\_ELEMENTS {

**public** **static** **void** main(String[] args) {

**int** a[]= {10,26,29,34,76,49,53};

**int** sum=0;

**for**(**int** i=0; i<a.length; i++)

{

sum= sum+a[i];

}

System.***out***.println("The average of Array Elements is : " +sum/a.length);

}

}

OUTPUT :

The average of Array Elements is : 39

* To find BIG ELEMENTof Array Elements **:BIG ELEMENT**

**public** **class** BIG\_ELEMENT\_IN\_ARRAY {

**public** **static** **void** main(String[] args) {

**int** a[] = {12,47,56,18,7,19,27};

**int** big = a[0];

**for**(**int** i=0; i<a.length; i++)

{

**if**(big<a[i])

{

big=a[i];

}

}

System.***out***.println("Biggest Element in Array is : " +big);

}

}

OUTPUT :

Biggest Element in Array is : 56

* To find SMALLEST ELEMENTof Array Elements **:SMALLEST ELEMENT**

**public** **class** SMALL\_ELEMENT\_IN\_ARRAY {

**public** **static** **void** main(String[] args) {

**int** a[] = {10,37,45,7,59,93};

**int** small = a[0];

**for**(**int** i=0; i<a.length; i++)

{

**if**(small>a[i])

{

small= a[i];

}

}

System.***out***.println("Smallest Element in Array is : " +small);

}

}

OUTPUT :

Smallest Element in Array is : 7

* To find DUPLICATE ELEMENT of Array Elements **: DUPLICATE ELEMENT**

**public** **class** DUPLICATE\_ELEMENTS\_IN\_ARRAY {

**public** **static** **void** main(String[] args) {

**int** a[]= {1, 25, 3, 1,1,2,3,3};

**for**(**int** i=0; i<a.length; i++)

{

**for**(**int** j=i+1; j<a.length; j++)

{

**if**(a[i]==a[j])

{

System.***out***.println("Duplicates of Array is : " +a[j]);

}

}

}

}

}

**OUTPUT :**

Duplicates of Array is : 1

Duplicates of Array is : 1

Duplicates of Array is : 3

Duplicates of Array is : 3

Duplicates of Array is : 1

Duplicates of Array is : 3

* To find Frequency of Number in Array**: Frequency of Number in Array**

**public** **class** FREQUENCY\_OF\_NUMBER\_IN\_ARRAY {

**public** **static** **void** main(String[] args) {

**int** a[]= {10,15,12,17,12,12,18,12};

**int** num=12;

**int** count=0;

**for**(**int** i=0; i<a.length; i++)

{

**if**(a[i]==num)

{

count++;

}

}

System.***out***.println("Frequency of " +num + " in array is : " +count);

}

}

OUTPUT :

Frequency of 12 in array is : 4

* To find MISSING ELEMENT of Array Elements **: Missing Element in Array**

**public** **class** MISSING\_ELEMENT\_IN\_ARRAY {

**public** **static** **void** main(String[] args) {

**int** a[] = {1,2,3,4,5,7,8,9,10};

**int** val=1;

**for**(**int** i=0; i<a.length; i++)

{

**if**(a[i]!=val)

{

**break**;

}

val++;

}

System.***out***.println("Missing Element in Array is : "+val);

}

}

OUTPUT :

Missing Element in Array is : 6

* To find Positive And Negative Element Count of Array Elements **: Positive And Negative Element Count**

**public** **class** POSITIVE\_AND\_NEGATIVE\_ELEMENT\_COUNT\_ARRAY {

**public** **static** **void** main(String[] args) {

**int** a[]= {-10,-20,15,48,-15,47,78,-45};

**int** possitiveCount=0;

**int** negativeCount=0;

**for**(**int** i=0; i<a.length; i++)

{

**if**(a[i]>0)

{

possitiveCount++;

}

**else**

{

negativeCount++;

}

}

System.***out***.println("Possitive count of Element is : " +possitiveCount);

System.***out***.println("Negative count of Element is : " +negativeCount);

}

}

**OUTPUT :**

Possitive count of Element is : 4

Negative count of Element is : 4

* To reverse the given array: **Reverse Array**

**public** **class** REVERSE\_ARRAY {

**public** **static** **void** main(String[] args) {

**int** a[] = {1,20,25,14,23,78,45,12};

**for**(**int** i=a.length-1; i>=0; i--)

{

System.***out***.print(a[i]+ " ");

}

}

}

**OUTPUT :**

12 45 78 23 14 25 20 1

* To find second highest element from an array without sorting: **SECOND HIGHEST ELEMENT**

**public** **class** SECOND\_HIGHEST\_ELEMENT\_IN\_ARRAY {

**public** **static** **void** main(String[] args) {

**int** a[]= {22,5,6,88,9};

**int** max=a[0];

**int** secmax=a[0];

**for**(**int** i=1;i<a.length;i++)

{

**if**(a[i]>max)

{

secmax=max;

max=a[i];

}

**else** **if**(a[i]>secmax)

{

secmax=a[i];

}

}

System.***out***.println("maximum value : "+max);

System.***out***.println("second maximum value : "+secmax);

}

}

**OUTPUT :**

maximum value : 88

second maximum value : 22

* To find second smallest element from an array without sorting: **SECOND SMALLEST ELEMENT**

**public** **class** SECOND\_SMALLEST\_ELEMENT\_IN\_ARRAY {

**public** **static** **void** main(String[] args) {

**int** a[]= {22,5,6,88,9};

**int** min=a[0],secmin=a[0];

**for**(**int** i=1;i<a.length;i++)

{

**if**(a[i]<min)

{

secmin=min;

min=a[i];

}

**else** **if**(a[i]<secmin)

{

secmin=a[i];

}

}

System.***out***.println("minimum value : "+min);

System.***out***.println("second minimum value : "+secmin);

}

}

**OUTPUT :**

minimum value : 5

second minimum value : 6

* To find all missing numbers from 1 to 60 from an array: **FIND ALL MISSING** **ELEMENTS IN ARRAY**

**public** **class** FIND\_ALL\_MISSING\_ELEMENTS\_IN\_ARRAY {

**public** **static** **void** main(String[] args) {

**boolean** status=**true**;

**int** a[]= {22,17,4,46,8,2,56};

**for**(**int** j=1;j<=60;j++)

{

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

**if**(j==a[i])

{

status=**false**;

**break**;

}

}

**if**(status==**true**)//number is not present

{

System.***out***.print(" " +j);

}

status=**true**;//for every number status should be true

}

}

}

**OUTPUT :**

1 3 5 6 7 9 10 11 12 13 14 15 16 18 19 20 21 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 47 48 49 50 51 52 53 54 55 57 58 59 60

* To Sort the array elements using for-each loop:**SORT\_ARRAY**

**public** **class** SORT\_ARRAY {

**public** **static** **void** main(String[] args) {

**int** [] jk = **new** **int** [5] ;

jk [0]=3;

jk [1]=8;

jk [2]=5;

jk [3]=11;

jk [4]=15;

System.***out***.println("\*\*\*\*\*\*\*\*\*\*Before Sorting of array\*\*\*\*\*\*\*\*");

**int** size = jk.length;

System.***out***.println(size);

**for** (**int** bb:jk) {

System.***out***.println(bb);

}

System.***out***.println("\*\*\*\*\*\*\*\*\*\*AfterSortingOfArray\*\*\*\*\*\*\*\*\*\*\*\*");

Arrays.*sort*(jk);

**for** (**int** cx:jk) {

System.***out***.println(cx);

}

}

}

OUTPUT :

\*\*\*\*\*\*\*\*\*\*Before Sorting of array\*\*\*\*\*\*\*\*

5

3

8

5

11

15

\*\*\*\*\*\*\*\*\*\*AfterSortingOfArray\*\*\*\*\*\*\*\*\*\*\*\*

3

5

8

11

15

**PROGRAMS ON STRING:**

* To find **duplicate string :**

**public** **class** FIND\_DUPLICATE\_STRING {

**public** **static** **void** main(String[] args) {

String a[]= {"Rohit", "Rahul", "Rohit", "Rahul","Suryawanshi"};

**for**(**int** i=0; i<a.length; i++)

{

**for**(**int** j=i+1; j<a.length; j++)

{

**if**(a[i].equals(a[j]))

{

System.***out***.println("Duplicate of String is : " +a[j]);

}

}

}

}

}

**OUTPUT :**

Duplicate of String is : Rohit

Duplicate of String is : Rahul

* To find frequency of alphabet in given string: **FREQUENCY OF** **ALPHABET**

**public** **class** FREQUENCY\_OF\_ALPHABET {

**public** **static** **void** main(String[] args) {

**int** counter =0;

String str = "I Love My Counnntry";

**char** c ='n';

**for**(**int** i=0; i<str.length(); i++)

{

**if**(c==str.charAt(i))

{

counter++;

}

}

System.***out***.println("Frequency of " +c+ " = " +counter);

}

}

OUTPUT :

Frequency of n = 3

* Java program to check whether given string is palindrome string: **PALINDROME STRING**

**public** **class** PALINDROME\_STRING {

**public** **static** **void** main(String[] args) {

String rev="";

String str="MADAM";

String org= str;

**for**(**int** i=str.length()-1; i>=0; i--)

{

rev= rev+ str.charAt(i);

}

System.***out***.println(rev);

**if**(org.equals(rev))

{

System.***out***.println(rev+ " is a palindrome String");

}

**else**

{

System.***out***.println(rev+ " is not a palindrome String");

}

}

}

**OUTPUT :**

MADAM

MADAM is a palindrome String

* Java program to reverse each word of given string : **REVERSE EACH WORD** **OF GIVEN STRING**

**public** **class** REVERSE\_EACH\_WORD\_OF\_GIVEN\_STRING {

**public** **static** **void** main(String[] args) {

String a = "Hello I am Sourabh";

String word[] = a.split(" ");

**for**(String element: word)

{

System.***out***.print(" ");

**for**(**int** i=element.length()-1; i>=0; i--)

{

**char** b = element.charAt(i);

System.***out***.print(b);

}

}

}

}

OUTPUT :

olleH I ma hbaruoS

* Java program to reverse each word of given string : **reverse string** **with spaces**

**public** **class** REVERSE\_EACH\_WORD {

**public** **static** **void** main(String[] args) {

String a ="Rohit is a Automation tester";

String [] b= a.split(" ");

**for**(**int** i=b.length-1; i>=0; i--)

{

System.***out***.print(" ");

System.***out***.print(b[i]);

}

}

}

**OUTPUT :**

tester Automation a is Rohit

* Java program to reverse the given string completely : **REVERSE STRING**

**public** **class** STRING\_REVERSE\_COMPLETE {

**public** **static** **void** main(String[] args) {

String rev ="";

String str = "I Love My Country";

**for**(**int** i=str.length()-1; i>=0; i--)

{

rev = rev + str.charAt(i);

}

System.***out***.println(rev);

}

}

**OUTPUT :**

yrtnuoC yM evoL I

* To check count of e/E character present in a String s="javaEEdeve"

**public** **class** STRING\_COUNT {

**public** **static** **void** main(String[] args) {

String s="javaEEdeve";

**int** count=0;

**for**(**int** i=0;i<s.length();i++)

{

**if**(s.charAt(i)=='e'||s.charAt(i)=='E')

{

count++;

}

}

System.***out***.println("Count of E/e is : "+count);

}

}

**OUTPUT :**

Count of E/e is : 4

* To find smaller case vowels from string s="javadev" a.print vowels b.count vowels:**FIND COUNT OF VOWELS**

**public** **class** FIND\_VOWELS\_OF\_GIVEN\_STRING {

**public** **static** **void** main(String[] args) {

String s="javadev";

**int** count=0;

**for**(**int** i=0;i<s.length();i++)

{

**if**(s.charAt(i)=='a'||s.charAt(i)=='e'||s.charAt(i)=='i'||

s.charAt(i)=='o'||s.charAt(i)=='u')

{

System.***out***.println(s.charAt(i));

count++;

}

}

System.***out***.println("Count of vowels in smaller case is : "+count);

}

}

**OUTPUT:**

a

a

e

Count of vowels in smaller case is : 3

* To count no of words present in string: **COUNT OF WORDS IN GIVEN STRING**

**public** **class** COUNT\_OF\_WORD\_IN\_STRING {

**public** **static** **void** main(String[] args) {

String s=" I am a java developer ";

System.***out***.println("Before trimming:"+s);

String s1=s.trim(); //helps to remove spaces from start and end //of sentence

System.***out***.println("After trimming:"+s1);

**int** count=1;

**for**(**int** i=0;i<s1.length();i++) {

**if**(s1.charAt(i)==' ' && s1.charAt(i+1)!=' ') {

count=count+1;

}

}

System.***out***.println("No of words are : "+count);

}

}

**OUTPUT :**

Before trimming: I am a java developer

After trimming:I am a java developer

No of words are : 5

* To print all characters only once from string String s="javajavajavadevdevdev" : **PRINT\_CHARACTERS\_ONLY\_ONCE\_OF\_STRING**

**public** **class** PRINT\_CHARACTERS\_ONLY\_ONCE\_OF\_STRING {

**public** **static** **void** main(String[] args) {

String s="javajavajavadevdev";

String un="";

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

**char** ch=s.charAt(i);

**if**(un.indexOf(ch)==-1) {

un=un+ch;

}

}

System.***out***.println("Unique string is :"+un);

}

}

**OUTPUT :**

Unique string is :javde

* To count longest word from a string String s="I am a java developer": **COUNT OF LARGEST WORD**

**public** **class** FIND\_LARGEST\_WORD\_OF\_GIVEN\_STRING {

**public** **static** **void** main(String[] args) {

String s="I am a java developer";

String s1[]=s.split(" ");

System.***out***.println("length of array : "+s1.length);

**for**(**int** i=0;i<s1.length;i++)

{

System.***out***.print(s1[i]+"-");

System.***out***.println(s1[i].length());

}

**int** max=0;

**for**(**int** i=0;i<s1.length;i++)

{

**if**(s1[i].length()>max)

{

max=s1[i].length();

}

}

System.***out***.print("The longest word from the string : "+max);

}

}

**OUTPUT :**

length of array : 5

I-1

am-2

a-1

java-4

developer-9

The longest word from the string : 9

* To calculate frequency of characters present in a string "javadev" : **FREQUENCY OF CHARACTERS IN GIVEN STRING**

**public** **class** FREQUENCY\_OF\_CHARACTERS {

**public** **static** **void** main(String[] args) {

String str="javadev";

String s=str.toUpperCase();//s=JAVADEV

**char**[] s1=s.toCharArray();//{'J','A','V','A','D','E','V'}

**for**(**char** ch='A';ch<='Z';ch++)

{

**int** count=0;

**for**(**int** i=0;i<s1.length;i++)

{

**if**(ch==s1[i])

{

count++;

}}

**if**(count>0)

System.***out***.println(ch+"-"+count);

}

}

}

**OUTPUT :**

A-2

D-1

E-1

J-1

V-2

* **STRING MODIFICATIONS:**
* WAP to replace e with a in given string "java development"
* WAp to replace "java" with "core java" in given "java development"
* WAP to remove spaces from given string "java development"
* WAP to remove all capital letters from string "jAvA DeVeloPer"
* WAP to remove all small letters from same string
* WAP to remove digits from string "ja123vaDEveloper"
* WAP to remove vowels from string "ja123vaDEveloper

**public** **class** STRING\_MODIFICATIONS {

**public** **static** **void** main(String[] args) {

String s="java development";

String r1=s.replace('e','a');

System.***out***.println(r1);

String r2=s.replaceAll("java","core java");

System.***out***.println(r2);

String r3=s.replaceAll(" ","");

System.***out***.println(r3);

String s1="jAvA DeVeloPer";

String r4=s1.replaceAll("[A-Z]","");

System.***out***.println(r4);

String r5=s1.replaceAll("[a-z]","");

System.***out***.println(r5);

String s2="ja123vaDEveloper";

String r6=s2.replaceAll("[0-9]","");

System.***out***.println(r6);

String r7=s2.replaceAll("[aeiouAEIOU]","");

System.***out***.println(r7);

}

}

**OUTPUT :**

java davalopmant

core java development

javadevelopment

jv eeloer

AA DVP

javaDEveloper

j123vDvlpr

* **Java Program based on user input (Scanner class ):**
* **Factorial Number:**

**public** **class** Factorial {

**public** **static** **void** main(String[] args) {

Scanner jk = **new** Scanner (System.***in***);

System.***out***.println("Enter your number?");

**int** number = jk.nextInt();

**int** i;

**int** fact=1;

**for** ( i=1; i<=number ;i++) {

fact = fact\*i;

}

System.***out***.println("Your value is:"+fact);

jk.close();

}

}

**OUTPUT :**

Enter your number?

5

Your value is:120

* **Palindrome Number:**

**import** java.util.Scanner;

**public** **class** Palindrome\_Number {

**public** **void** method2() {

Scanner as =**new** Scanner (System.***in***) ;

System.***out***.println("Enter your palindrome number?");

**int** number = as.nextInt();

**int** remain=0;

**while** (number > 0) {

remain = remain\*10+ number%10;

number = number/10;

}

System.***out***.println("your palindrome number is : "+remain);

as.close();

}

**public** **static** **void** main(String[] args) {

Palindrome\_Number jk = **new** Palindrome\_Number ();

jk.method2();

}

}

**OUTPUT :**

Enter your palindrome number?

121

your palindrome number is : 121

* **Reverse Number:**

**import** java.util.Scanner;

**public** **class** Reverse\_number {

**public** **static** **void** main(String[] args) {

Scanner jk = **new** Scanner (System.***in***);

System.***out***.println("Enter your number");

**int** number =jk.nextInt();

**int** rev =0;

**while** (number >0) {

rev = rev \*10+ number %10;

number = number/10;

}

System.***out***.println("Your reverse number is : " + rev);

jk.close();

}

}

**OUTPUT :**

Enter your number

12345

Your reverse number is : 54321

* **Prime Number :**

**public** **class** PRIME\_NUMBER {

**public** **static** **void** main(String[] args) {

Scanner input = **new** Scanner(System.***in***);

System.***out***.println("Enter your number ");

**int** number= input.nextInt();

**int** c=0;

**for** (**int** i=2 ; i<=number ;i++) {

**if**(number%i==0) {

c++;

}

}

**if**(c==1) {

System.***out***.println(number + " : is a prime number");

}

**else** {

System.***out***.println(number + " : is not a prime number");

}

}

}

OUTPUT :

Enter your number

11

11 : is a prime number

* **FIBONACCI SERIES:**

**public** **class** FibonnasiSeries {

**public** **static** **void** main(String[] args) {

Scanner input = **new** Scanner(System.***in***);

System.***out***.println("Enter your number ");

**int** number= input.nextInt();

**int** a=0;

**int** b=1;

**int** c;

**int** i=0;

System.***out***.print("FibonnasiSeries is as :");

**while** (i<=number) {

c=a+b;

a=b;

b=c;

i++;

System.***out***.print(" " +c);

}

}

}

**OUTPUT :**

Enter your number

12

FibonnasiSeries is as : 1 2 3 5 8 13 21 34 55 89 144 233 377

* **ARMSTRONG NUMBER:**

**public** **class** AromstrongNumber {

**public** **static** **void** main(String[] args) {

Scanner input = **new** Scanner(System.***in***);

System.***out***.println("Enter your number ");

**int** number= input.nextInt();

**int** rev =0 ;

**int** rem ;

**int** arms = number ;

**while** (number > 0) {

rem = number % 10 ;

rev = rev + rem \*rem \* rem \* rem;

number = number / 10 ;

}

System.***out***.println(rev);

**if** (rev ==arms) {

System.***out***.println(rev + " is a armstrong number");

}

**else** {

System.***out***.println(rev+ " is not a armstrong number");

}

}

}

**OUTPUT:**

Enter your number

1634

1634

1634 is a armstrong number

* **SWAP NUMBERS :**

**public** **class** SwapNumber {

**public** **static** **void** main(String[] args) {

Scanner input = **new** Scanner(System.***in***);

System.***out***.println("Enter your number ");

**int** number1= input.nextInt();

**int** number2= input.nextInt();

**int** c;

c=number1;

number1=number2;

number2=c;

System.***out***.println("The value of number1 is:"+ number1);

System.***out***.println("The value of number2 is "+number2);

}

}

**OUTPUT :**

Enter your number

10

12

The value of number1 is:12

The value of number2 is 10

* Creation of 2 D array by using Scanner class :

**public** **class** CREATE\_2D\_ARRAY {

**public** **static** **void** main(String[] args) {

Scanner sc=**new** Scanner(System.***in***);

System.***out***.println("Enter Row Size :");

**int** rowsize=sc.nextInt();

System.***out***.println("Enter Column Size :");

**int** colsize=sc.nextInt();

**int** a[][]=**new** **int**[rowsize][colsize];

//for taking values from user

System.***out***.println("Enter the elements :");

**for**(**int** i=0;i<rowsize;i++) {

**for**(**int** j=0;j<colsize;j++) {

a[i][j]=sc.nextInt();

}}

//for printing values

**for**(**int** i=0;i<rowsize;i++) {

**for**(**int** j=0;j<colsize;j++) {

System.***out***.println("Value at a["+i+"]["+j+"]th : "+a[i][j]);

}}

}

}

**OUTPUT :**

Enter Row Size :

3

Enter Column Size :

2

Enter the elements :

6

5

4

3

2

1

Value at a[0][0]th : 6

Value at a[0][1]th : 5

Value at a[1][0]th : 4

Value at a[1][1]th : 3

Value at a[2][0]th : 2

Value at a[2][1]th : 1

* **Prime number between range :**

**public** **class** PrimeNumberBetweenRange {

**public** **static** **void** main(String[] args) {

Scanner jk = **new** Scanner (System.***in***);

System.***out***.println("Enter your number?");

**int** number = jk.nextInt();

System.***out***.print("Prime numbers are :");

**int** c=0;

**for** (**int** i=jk.nextInt(); i<=number ;i++) {

**for** (**int** j=2 ; j<=i ; j++) {

**if**(i%j==0) {

c++;

}

}

**if** (c==1) {

System.***out***.print(" "+ i);

}

**else** {

c=0;

}

}

}

}

OUTPUT:

Enter your number?

100

Prime numbers are :

50

53 59 61 67 71 73 79 83 89 97

* **Natural Numbers:**

**import** java.util.Scanner;

**public** **class** NaturalNumbers {

**public** **static** **void** main(String[] args) {

Scanner jk = **new** Scanner (System.***in***);

System.***out***.println("Enter your number?");

**int** number = jk.nextInt();

System.***out***.print("Natural numbers are : ");

**for** (**int** b=1; b<=number; b++) {

System.***out***.print(" "+b);

}

}

}

**OUTPUT :**

Enter your number?

10

Natural numbers are : 1 2 3 4 5 6 7 8 9 10

* **LEAP YEAR:**

**public** **class** Leap\_Year {

**public** **static** **void** main(String[] args) {

// find leap year

/\*condition=

1)century proper divide by 400 OR

2) proper divide by 4

3) but not divisible by 100\*/

Scanner P=**new** Scanner(System.***in***);

System.***out***.print("Enter Year=");

**int** year= P.nextInt();

//int year =2001;

**if**(year% 4==0)

{

**if**(year%100==0)

{

**if**(year%400==0)

{

System.***out***.println(" leap year");

}

**else** {

System.***out***.println(" not leap year");

}

}

**else** {

System.***out***.println(" leap year");

}

}

**else** {

System.***out***.println(" not leap year");

}

}

}

**OUTPUT :**

Enter Year=

2021

not leap year

**PROGRAMS ON COLLECTIONS:**

* **Write a program to traverse (or iterate) ArrayList:**

**public** **class** ITERATE\_ARRAYLIST {

**public** **static** **void** main(String args[]) {

// initialize ArrayList

ArrayList<Integer> al = **new** ArrayList<Integer>();

// add elements to ArrayList object

al.add(3);

al.add(17);

al.add(6);

al.add(9);

al.add(7);

System.***out***.println("Using Advanced For Loop");

// printing ArrayList

**for** (Integer num : al) {

System.***out***.println(num);

}

}

}

**OUTPUT:**

Using Advanced For Loop

3

17

6

9

7

* **Write a program to convert List to Array:**

**public** **class** ARRAYLIST\_TO\_ARRAY\_CONVERSION {

**public** **static** **void** main(String args[]) {

// Creating and initializing ArrayList

ArrayList<String> fruits = **new** ArrayList<>();

fruits.add("Apple");

fruits.add("Banana");

fruits.add("Mango");

fruits.add("Pear");

// ArrayList to String array conversion

String str [] = **new** String [fruits.size()];

**for** (**int** i=0 ; i<fruits.size(); i++) {

str[i]=fruits.get(i);

System.***out***.println(str[i]);

}

System.***out***.println("\*\*\*\*\*\*\*\_by using advanced for loop\_\*\*\*\*\*\*\*\*");

//print element by using advance for loop:

**for** ( String ss : str) {

System.***out***.println(ss);

}

}

}

**OUTPUT:**

Apple

Banana

Mango

Pear

\*\*\*\*\*\*\*\_by using advanced for loop\_\*\*\*\*\*\*\*\*

Apple

Banana

Mango

Pear

* **Write a program to traverse (or iterate) HashSet:**

**import** java.util.HashSet;

**import** java.util.Iterator;

**public** **class** ITERATE\_HASHSET {

**public** **static** **void** main(String args[]) {

// Declaring a HashSet

HashSet<String> hashset = **new** HashSet<String>();

// Add elements to HashSet

hashset.add("Pear");

hashset.add("Apple");

hashset.add("Orange");

hashset.add("Papaya");

hashset.add("Banana");

// Get iterator

Iterator<String> it = hashset.iterator();

// Show HashSet elements

System.***out***.println("HashSet contains: ");

**while**(it.hasNext()) {

System.***out***.println(it.next());

}

}

}

**OUTPUT:**

HashSet contains:

Apple

Pear

Papaya

Orange

Banana

* **Write a program to convert Array to List:**
* **Method 1 : Using Arrays.asList() method**

**import** java.util.ArrayList;

**import** java.util.Arrays;

**public** **class** ARRAY\_TO\_ARRAYLIST\_CONVERSION {

**public** **static** **void** main(String args[]) {

// Declaring and initializing Array

String[] cities={"Boston", "Dallas", "New York", "Chicago"};

//Converting Array to ArrayList using Arrays.asList()

ArrayList<String> list= **new** ArrayList<>(Arrays.*asList*(cities));

// Add more elements to the converted list

list.add("San Francisco");

list.add("San jose");

// Print arraylist elements using for-each loop

**for**(String s : list) {

System.***out***.println(s);

}

}

}

**OUTPUT:**

Boston

Dallas

New York

Chicago

San Francisco

San jose

* **Method 2 : Using Collections.addAll() method:**

**public** **class** ARRAY\_TO\_ARRAYLIST\_CONVERSION2 {

**public** **static** **void** main(String args[]) {

// Creating and initializing Array

String[] strArray = {"AAA", "BBB", "CCC", "DDD"};

// Declaring ArrayList

ArrayList<String> al = **new** ArrayList<>();

//Converting Array to ArrayList using addAll() method

Collections.*addAll*(al, strArray);

// Add more elements to the converted list

al.add("YYY");

al.add("ZZZ");

// Displaying arraylist elements using for-each loop

**for**(String s : al) {

System.***out***.println(s);

}

}

}

**OUTPUT:**

AAA

BBB

CCC

DDD

YYY

ZZZ

* **Method 3 : Using add() method:**

**import java.util.ArrayList;**

**import java.util.Arrays;**

**import java.util.Collections;**

**public class ARRAY\_TO\_ARRAYLIST\_CONVERSION3 {**

**public static void main(String args[]) {**

**// Declaring and instantiating ArrayList in one step**

**ArrayList<String> al = new ArrayList();**

**// Given initialized array**

**String[] strArray = {"Cocacola", "Pepsi", "Fanta", "Dr Pepper"};**

**//Converting Array to ArrayList manually**

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

**// Adding every element of array to the ArrayList**

**al.add(strArray[i]);**

**}**

**// Showing arraylist elements using for-each loop**

**for(String str1 : al) {**

**System.out.println(str1);**

**}**

**}**

**}**

**OUTPUT:**

Cocacola

Pepsi

Fanta

Dr Pepper

* **Write a program to iterate the HashMap:**

**import** java.util.HashMap;

**public** **class** ITERATE\_HASHMAP {

**public** **static** **void** main(String args[]) {

// Creating a HashMap of String keys and String values

HashMap<String, String> hashmap = **new** HashMap<String, String>();

hashmap.put("Key1", "Value1");

hashmap.put("Key2", "Value2");

System.***out***.println("Iterating or looping map using foreach loop");

// Iterating or looping using keySet() method

**for** (String key : hashmap.keySet()) {

System.***out***.println("key: " + key + " value: " +

hashmap.get(key));

}

}

}

**OUTPUT:**

Iterating or looping map using foreach loop

key: Key2 value: Value2

key: Key1 value: Value1

Write a program to sort ArrayList using Comparable and Comparator?

**import** java.util.TreeSet;

**public** **class** TreeSetClass {

**public** **static** **void** main(String[] args) {

TreeSet<String> jk = **new** TreeSet<String>(**new** ComparatorDiscussion());

jk.add("Riddhi");

jk.add("Siddhi");

jk.add("Vedant");

jk.add("Badri");

jk.add("Digu");

System.***out***.println(jk);

}

}

**import** java.util.Comparator;

**public** **class** ComparatorDiscussion **implements** Comparator<String> {

@Override

**public** **int** compare(String o1, String o2) {

**return** o1.compareTo(o2);

}

}

**OUTPUT :**

[Badri, Digu, Riddhi, Siddhi, Vedant]

* **Write a program to sort ArrayList in descending order:**

**public** **class** ARRAYLIST\_DECENDING\_ORDER {

**public** **static** **void** main(String args[]) {

ArrayList<String> arrList = **new** ArrayList();

arrList.add("Apple");

arrList.add("Banana");

arrList.add("Pear");

arrList.add("Mango");

/\*Unsorted List: ArrayList content before sorting\*/

System.***out***.println("ArrayList Before Sorting:");

**for**(String s: arrList){

System.***out***.println(s);

}

/\* Sorting in decreasing (descending) order\*/

Collections.*sort*(arrList, Collections.*reverseOrder*());

/\* Sorted List in reverse order\*/

System.***out***.println("ArrayList in descending order:");

**for**(String str: arrList){

System.***out***.println(str);

}

}

}

**OUTPUT:**

Apple

Banana

Pear

Mango

ArrayList in descending order:

Pear

Mango

Banana

Apple

* **Write a program to convert LinkedList to ArrayList:**

**import** java.util.LinkedList;

**import** java.util.List;

**public** **class** LINKED\_LIST\_TO\_ARRAYLIST\_CONVERSION {

**public** **static** **void** main(String args[]) {

// Creating LinkedList Object

LinkedList<String> linkedlist = **new** LinkedList<String>();

linkedlist.add("Mango");

linkedlist.add("Banana");

linkedlist.add("Pear");

linkedlist.add("Apple");

linkedlist.add("Orange");

// Converting LinkedList to ArrayList

List<String> list = **new** ArrayList(linkedlist);

**for** (String s : list) {

System.***out***.println(s);

}

}

}

**OUTPUT :**

Mango

Banana

Pear

Apple

Orange

* **Write a program to convert HashSet to Array:**

**import** java.util.HashSet;

**public** **class** HASHSET\_TO\_ARRAY\_CONVERSION {

**public** **static** **void** main(String args[]) {

// Create a HashSet object

HashSet<String> hashset = **new** HashSet<String>();

// Adding elements to HashSet object

hashset.add("Doctor");

hashset.add("Engineer");

hashset.add("Lawyer");

hashset.add("Police");

// Printing HashSet elements

System.***out***.println("HashSet contains: "+ hashset);

// Creating an Array of HashSet size

String[] array = **new** String[hashset.size()];

// Converting HashSet to Array using toArray() method

hashset.toArray(array);

// Printing Array elements

System.***out***.println("Array contains: ");

**for** (String str : array) {

System.***out***.println(str);

}

}

}

**OUTPUT:**

HashSet contains: [Engineer, Doctor, Lawyer, Police]

Array contains:

Engineer

Doctor

Lawyer

Police

* **Write a program to reverse ArrayList in java:**

**import** java.util.ArrayList;

**import** java.util.Collections;

**public** **class** REVERSE\_ARRAYLIST {

**public** **static** **void** main(String[] args)

{

//Creating an ArrayList object

ArrayList<String> arrlist = **new** ArrayList<String>();

//Adding elements to ArrayList object

arrlist.add("Apple");

arrlist.add("Amazon");

arrlist.add("Facebook");

arrlist.add("Google");

arrlist.add("IBM");

arrlist.add("Tesla");

//Displaying ArrayList Before Reverse

System.***out***.println("Before Reverse ArrayList:");

System.***out***.println(arrlist);

/\*Reversing the list using

Collections.reverse() method\*/

Collections.*reverse*(arrlist);

//Displaying list after reverse

System.***out***.println("After Reverse ArrayList:");

System.***out***.println(arrlist);

}

}

**OUTPUT :**

Before Reverse ArrayList:

[Apple, Amazon, Facebook, Google, IBM, Tesla]

After Reverse ArrayList:

[Tesla, IBM, Google, Facebook, Amazon, Apple]

**public** **class** ITERATE\_TREEMAP {

* **Write a program to iterate TreeMap in java:**

**public** **static** **void** main(String args[]) {

// Declaring a TreeMap of String keys and String values

TreeMap<String, String> treemap = **new** TreeMap<String, String>();

// Add Key-Value pairs to TreeMap

treemap.put("Key1", "Pear");

treemap.put("Key2", "Apple");

treemap.put("Key3", "Orange");

treemap.put("Key4", "Papaya");

treemap.put("Key5", "Banana");

// Get Set of entries

Set set = treemap.entrySet();

// Get iterator

Iterator it = set.iterator();

// Show TreeMap elements

System.***out***.println("TreeMap contains: ");

**while**(it.hasNext()) {

Map.Entry pair = (Entry) it.next();

System.***out***.print("Key is: "+pair.getKey() + " and ");

System.***out***.println("Value is: "+pair.getValue());

}

}

}

**OUTPUT:**

TreeMap contains:

Key is: Key1 and Value is: Pear

Key is: Key2 and Value is: Apple

Key is: Key3 and Value is: Orange

Key is: Key4 and Value is: Papaya

Key is: Key5 and Value is: Banana