Daily practice program-1

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1. Matrix multiplication:

```
class main{
public static void main(String args[]){
 int a[][]={{1,2},{3,4}};
 int b[][]={{5,6},{7,8}};
 int c[][]=new int[2][2];
 for(int i=0;i<2;i++)
 for(int j=0;j<2;j++)
 for(int k=0;k<2;k++)
 c[i][j]+=a[i][k]*b[k][j];
 for(int i=0;i<2;i++){
 for(int j=0;j<2;j++)
 System.out.print(c[i][j]+" ");
 System.out.println();
}}}
```

2. Inverted pyramid:

```
class main{
public static void main(String[] args){
   int n=5;
 for(int i=n;i>=1;i--){
 for(int j=1;j<=i;j++)
 System.out.print("*");
 System.out.println();
}}}
```

3. Square root

```
class main{
 public static void main(String[] args){
    int n=25;
```

```
int r = (int) Math.sqrt(n);
if(r*r == n)
System.out.println(r+" "+(-r));
else
  System.out.println("Not perfect");
}}
```

5. Hollow square:

```
class main{
public static void main(String[] args){
 int n=5;
for(int i=1;i<=n;i++){
for(int j=1;j<=n;j++){
if (i==1 || i==n || j==1 || j==n)
System.out.print("*");
else
System.out.print(" ");
}
System.out.println();
}}}
```

6. Remove vowels:

```
class main{
public static void main(String[] args){
String s="education";
for char c:s.toCharArray(){
if ("aeiouAEIOU".indexOf(c)==-1)
System.out.print(c);
}}}
```

7. Reverse alphabet order:

```
import java.util.*;
class main{
  public static void main(String[] args){
```

```
char a[] = "hello".toCharArray();
Array.sort(a);
for(int i=a.length-1 ;i>=0;i--)
System.out.print(a[i]);
}}
```

8. Armstrong number:

```
class main{
public static void main(String []args){
 int n=153,sum=0,t=n;
while(t>0){
int d=t%10;
sum+=d*d*d;
 t/=10;
 }
System.out.println(sum==n?"Armstrong":"Not");
}}
```

9. Character search:

```
class main{
public static void main(String args[]){
String s="java";
char ch='a';
for(int i=0;i<s.length();i++)
 if(s.charAt(i)==ch)
System.out.println("Index "+i);
}}
```

10. Composite count:

```
class main{
public static void main(String[] args){
int a[]={4,5,6,7};
int count=0;
```

```
for(int n:a){
int f=0;
for(int i=2;i<=n/2;i++)
if(n%i==0) f=1;
if( f==1) count++;
}
System.out.println(count);
}}
```

11. Math max & math min

```
import java.util.*;
class main{
public static void main(String[] args){
 int a[]={5,2,9,1};
Arrays.sort(a);
int min=a[1];
int max=a[a.length-2];
System.out.println("Sum= "+(min+max));
}}
```

12. ATM balance

```
class main{
public static void main(String[] args){
int total=2*2000+3*500+1*200;
System.out.println("Balance="+total);
}}
```

13. Palindrome number

```
class main{
public static void main(String[]args){
int n=121, rev=0, t=n;
while(t>0){
rev=rev*10+t%10;
```

```
n/=10;
}
System.out.println(n==rev?"Palindrome":"Not");
}}
```

14. Decimal to binary & octal:

```
class main{
 public static void main(String[]args){
  int n=10;
 System.out.println(Integer.toBinaryString(n));
 System.out.println(Integer.toOctalString(n));
}}
```

15. Bonus salary:

```
class main{
public static void main(String[] args){
 double sal=9000, bonus=0;
 char g='A';
 bonus = g=='A'?sal*0.05:sal*0.10;
 if (sal<10000) bonus +=sal*0.02;
System.out.println(sal+bonus);
}}
```

16. Perfect numbers:

```
class main{
public static void main(String[]args){
for(int n=2;n<=30;n++){
 int sum=1;
 for(int i=2; i<=n/2;i++){
if(n%i==0) sum+=i;
if(sum==n) System.out.println(n);
}
}}
```

17. Gray code:

```
class main{
public static void main(String[] args){
int n=7;
int g=n^(n>>1);
System.out.println(Integer.toBinaryString(g));
}}
```

18. Tax:

```
class main{
public static void main(String[] args){
double inc=400000, tax;
if (inc<=150000) tax=0;
else if (inc<=300000) tax=inc*0.1;
else if (inc<=500000) tax=inc*0.2;
else tax=inc*0.3;
System.out.println(tax);
}}
```

19. Average until -1

```
import java.util.*;
class main{
public static void main(String[]args){
Scanner sc=new Scanner(System.in);
int n, sum=0, c=0;
while ((n=sc.nextInt())!=-1){
sum+=n;
c++;
}
System.out.println("Average: "+(sum/c));
}}
```

20. Count upper, lower, digits:

```
class main{
public static void main(String[] args){
String s = "java123";
int u=0,l=0,d=0;
for(char c:s.toCharArray()){
if(Character.isUpperCase(c)) u++;
else if(Character.isLowerCase(c)) l++;
else if(Character.isDigit(c)) d++;
}
System.out.println(u+" "+l+" "+d);
}}
```

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Main.java

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Run

```
1 class Main{
2 public static void main(String args[]){
3  int total=2*2000+3*500+1*200;
4  System.out.println("Balance="+total);
5  }}
6
```

Output

Clear

```
Balance=5700

=== Code Execution Successful ===
```

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Main.java

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```java
class Main{
public static void main(String args[]){
double inc=400000,tax;
if(inc<=150000) tax=0;
else if(inc<=300000) tax=inc*0.1;
else if(inc<=500000) tax=inc*0.2;
else tax=inc*0.3;
System.out.println(tax);
}}

```

Output

Clear

```
80000.0

=== Code Execution Successful ===
```


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Main.java

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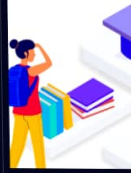
```
class Main{
public static void main(String args[]){
String s="education";
for(char c:s.toCharArray()){
if("aeiouAEIOU".indexOf(c)==-1)
System.out.print(c);
}
}}
```

Output Clear

```
dctn
=== Code Execution Successful ===
```

Main.java

Share | Run | Output | Clear

```
1 - class Main{
2 - public static void main(String args[]){
3  String s="Java123";
4  int u=0,l=0,d=0;
5 - for(char c:s.toCharArray()){
6  if(Character.isUpperCase(c)) u++;
7  else if(Character.isLowerCase(c)) l++;
8  else if(Character.isDigit(c)) d++;
9  }
10  System.out.println(u+" "+l+" "+d);
11  }}
12
```

```
1 3 3

=== Code Execution Successful ===
```

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Main.java

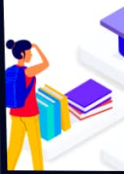
Share | Run

```java
class Main{
public static void main(String args[]){
int n=25;
int r=(int)Math.sqrt(n);
if(r*r==n)
System.out.println(r+" "+(-r));
else
System.out.println("Not perfect");
}}
```

Output | Clear

```
5 -5

=== Code Execution Successful ===
```

Main.java

Share

```java
import java.util.*;
class Main{
public static void main(String args[]){
int a[]={5,2,9,1};
Arrays.sort(a);
int min=a[1];
int max=a[a.length-2];
System.out.println("Sum="+(min+max));
}}
```

Output

Clear

```
Sum=7

=== Code Execution Successful ===
```

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Main.java

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```
class Main{
public static void main(String args[]){
int a[]={4,5,6,7};
int count=0;
for(int n:a){
int f=0;
for(int i=2;i<=n/2;i++)
if(n%i==0) f=1;
if(f==1) count++;
}
System.out.println(count);
}}
```

Output Clear

```
2

=== Code Execution Successful ===
```

Main.java

Share Run

```java
class Main{
public static void main(String args[]){
int a[][]={{1,2},{3,4}};
int b[][]={{5,6},{7,8}};
int c[][]=new int[2][2];
for(int i=0;i<2;i++)
for(int j=0;j<2;j++)
for(int k=0;k<2;k++)
c[i][j]+=a[i][k]*b[k][j];
for(int i=0;i<2;i++){
for(int j=0;j<2;j++)
System.out.print(c[i][j]+" ");
System.out.println();
}
}}
```

Output Clear

```
19 22
43 50

=== Code Execution Successful ===
```


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Main.java

Share | Run

```
class Main{
public static void main(String args[]){
for(int n=2;n<=30;n++){
int sum=1;
for(int i=2;i<=n/2;i++)
if(n%i==0) sum+=i;
if(sum==n) System.out.println(n);
}
}}
```

Output | Clear

```
6
28

=== Code Execution Successful ===
```

Main.java

Share Run

```java
class Main{
public static void main(String args[]){
int n=25;
int r=(int)Math.sqrt(n);
if(r*r==n)
System.out.println(r+" "+(-r));
else
System.out.println("Not perfect");
}}
```

Output Clear

```
5 -5

=== Code Execution Successful ===
```

Main.java

Share | Run

```java
class Main{
public static void main(String args[]){
double sal=9000,bonus=0;
char g='A';
bonus = g=='A'?sal*0.05:sal*0.10;
if(sal<10000) bonus+=sal*0.02;
System.out.println(sal+bonus);
}}

```

Output | Clear

```
9630.0

=== Code Execution Successful ===
```


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Main.java

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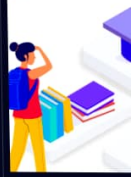
```java
class Main{
public static void main(String args[]){
String s="java";
char ch='a';
for(int i=0;i<s.length();i++)
if(s.charAt(i)==ch)
System.out.println("Index "+i);
}}
```

Output Clear

```
Index 1
Index 3

=== Code Execution Successful ===
```

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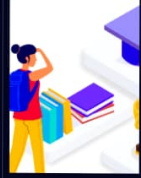
Main.java

Share | Run

```java
import java.util.*;
class Main{
public static void main(String args[]){
char a[]="hello".toCharArray();
Arrays.sort(a);
for(int i=a.length-1;i>=0;i--)
System.out.print(a[i]);
}}
```

Output | Clear

```
ollhe
=== Code Execution Successful ===
```

Main.java

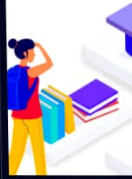
Share Run

```java
class Main{
public static void main(String args[]){
int n=5;
for(int i=1;i<=n;i++){
for(int j=1;j<=n;j++){
if(i==1||i==n||j==1||j==n)
System.out.print("$");
else
System.out.print(" ");
}
System.out.println();
}
}}
```

Output Clear

```
$$$$$
$   $
$   $
$   $
$$$$$

=== Code Execution Successful ===
```

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Main.java

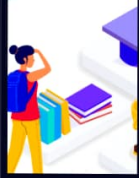
Share Run

```java
class Main{
public static void main(String args[]){
int n=121,rev=0,t=n;
while(t>0){
rev=rev*10+t%10;
t/=10;
}
System.out.println(n==rev?"Palindrome":"Not");
}}
```

Output Clear

```
Palindrome

=== Code Execution Successful ===
```

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Main.java

Share | Run

```java
class Main{
public static void main(String args[]){
int n=7;
int g=n^(n>>1);
System.out.println(Integer.toBinaryString(g));
}}
```

Output

Clear

```
100

=== Code Execution Successful ===
```

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Main.java

Share Run

```java
class Main{
public static void main(String args[]){
int n=153,sum=0,t=n;
while(t>0){
int d=t%10;
sum+=d*d*d;
t/=10;
}
System.out.println(sum==n?"Armstrong":"Not");
}}
```

Output

Clear

```
Armstrong

=== Code Execution Successful ===
```

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Main.java

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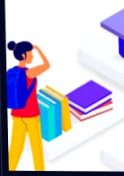
```java
class Main{
public static void main(String args[]){
int n=10;
System.out.println(Integer.toBinaryString(n));
System.out.println(Integer.toOctalString(n));
}}

```

Output | Clear

```
1010
12

=== Code Execution Successful ===
```

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Main.java

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```
class Main{
public static void main(String args[]){
for(int n=2;n<=30;n++){
int sum=1;
for(int i=2;i<=n/2;i++)
if(n%i==0) sum+=i;
if(sum==n) System.out.println(n);
}
}}
```

Output | Clear

```
6
28

=== Code Execution Successful ===
```