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| **// To print one digit per line in reverse order** | **// To count the number of digits** | **// To sum all the digits** |
| import java.util.Scanner;  class mod1  { public static void main(String args[])  { int no, r;  Scanner Sc=new Scanner(System.in);  System.out.println("Enter a number");  no=Sc.nextInt();  while(no!=0)  {r=no%10;  System.out.println(r);  no=no/10;  }  }} | import java.util.Scanner;  class mod1  { public static void main(String args[])  { int no, r,c;  Scanner Sc=new Scanner(System.in);  System.out.println("Enter a number");  no=Sc.nextInt();  c=0;  while(no!=0)  {r=no%10;  c=c+1;  no=no/10;  }  System.out.println("The count is "+c);  }} | import java.util.Scanner;  class mod1  { public static void main(String args[])  { int no, r,s;  Scanner Sc=new Scanner(System.in);  System.out.println("Enter a number");  no=Sc.nextInt();  s=0;  while(no!=0)  {r=no%10;  s=s+r;  no=no/10;  }  System.out.println("The sum is "+s);  }} |

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| **Application of Sum of digits – Armstrong number eg: 153 = 13 +5 3+33** |
| import java.util.Scanner;  class mod1  { public static void main(String args[])  { int no,no1, r,s;  Scanner Sc=new Scanner(System.in);  System.out.println("Enter a number");  no=Sc.nextInt();  no1=no; // To copy the original number  s=0;  while(no!=0)  {r=no%10;  s=s+r\*r\*r;  no=no/10;  }  if(no1==s)  System.out.println(no1+"It is an Armstrong number ");  else  System.out.println(no1+"It is not an Armstrong number ");  }} |

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| **To reverse a number eg: n=123 reverse number of n = 321** |
| import java.util.Scanner;  class mod1  { public static void main(String args[])  { int no,no1, r,rn;  Scanner Sc=new Scanner(System.in);  System.out.println("Enter a number");  no=Sc.nextInt();  no1=no; // To copy the original number  rn=0;  while(no!=0)  {r=no%10;  rn=rn\*10+r;  no=no/10;  }  System.out.println("Reverse of "+ no1+" is "+ rn);  }} |

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| **Application of reverse number- Palindrome number eg: 12321 is a Palindrome** |
| import java.util.Scanner;  class mod1  { public static void main(String args[])  { int no,no1, r,rn;  Scanner Sc=new Scanner(System.in);  System.out.println("Enter a number");  no=Sc.nextInt();  no1=no; // To copy the original number  rn=0;  while(no!=0)  {r=no%10;  rn=rn\*10+r;  no=no/10;  }  if(rn==no1)  System.out.println(no1+ " is a Plindrome Number ");  else  System.out.println(no1+ " is not a Plindrome Number ");  }} |

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| **Application of Reverse number – Print each digit in words** |
| import java.util.Scanner;  class mod1  { public static void main(String args[])  { int no,no1, r,rn;  Scanner Sc=new Scanner(System.in);  System.out.println("Enter a number");  no=Sc.nextInt();  no1=no; // To copy the original number  rn=0;// reverse the number  while(no!=0)  {r=no%10;  rn=rn\*10+r;  no=no/10;  }  // Extract each digit in the number and print it  while(rn!=0)  { r=rn%10;  switch(r)  {case 0:  System.out.print(" Zero ");  break;  case 1:  System.out.print(" One ");  break;  case 2:  System.out.print(" Two ");  break;  case 3:  System.out.print(" Three ");  break;  case 4:  System.out.print(" Four ");  break;  case 5:  System.out.print(" Five ");  break;  case 6:  System.out.print(" Six ");  break;  case 7:  System.out.print(" Seven ");  break;  case 8:  System.out.print(" Eignt ");  break;  case 9:  System.out.print(" Nine ");  break;  }  rn=rn/10;  }  }} |

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| **//To print all factors of a number** | **// To count number of factors** | **// To add all the factors** |
| import java.util.Scanner;  class mod1  { public static void main(String args[])  { int no,i;  Scanner Sc=new Scanner(System.in);  System.out.println("Enter a number");  no=Sc.nextInt();  for(i=1;i<=no;i++)  {if(no%i==0)  System.out.println(i);  }  }} | import java.util.Scanner;  class mod1  { public static void main(String args[])  { int no,i,c;  Scanner Sc=new Scanner(System.in);  System.out.println("Enter a number");  no=Sc.nextInt();  c=0;  for(i=1;i<=no;i++)  {if(no%i==0)  c=c+1;  }  System.out.println("Number of factors are "+c);  }} | import java.util.Scanner;  class mod1  { public static void main(String args[])  { int no,i,s;  Scanner Sc=new Scanner(System.in);  System.out.println("Enter a number");  no=Sc.nextInt();  s=0;  for(i=1;i<=no;i++)  {if(no%i==0)  s=s+i;  }  System.out.println("Sum of all the factors is "+s);  }} |

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| **// Application of Count the number of factors – Prime Numbers** |
| import java.util.Scanner;  class mod1  { public static void main(String args[])  { int no,i,c;  Scanner Sc=new Scanner(System.in);  System.out.println("Enter a number");  no=Sc.nextInt();  c=0;  for(i=1;i<=no;i++)  {if(no%i==0)  c=c+1;  }  if(c==2)  System.out.println(no+" is a prime number");  else  System.out.println(no+" is not a prime number");  }} |

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| **// Application of Prime number + Nested loop – To print all prime numbers from 1 to 100** |
| import java.util.Scanner;  class mod1  { public static void main(String args[])  { int no,i,c;  Scanner Sc=new Scanner(System.in);  for(no=1;no<=100;no++)  { c=0;  for(i=1;i<=no;i++)  {if(no%i==0)  c=c+1;  }  if(c==2)  System.out.println(no+" is a prime number");  }  }} |

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| **// Application of prime numbers – Twin Prime 3 and 5 (both are prime numbers and the difference between them is two)** |
| import java.util.Scanner;  class mod1  { public static void main(String args[])  { int no1,no2,i,c1,c2;  Scanner Sc=new Scanner(System.in);  System.out.println("Enter a number");  no1=Sc.nextInt();  System.out.println("Enter a number");  no2=Sc.nextInt();  c1=0;  for(i=1;i<=no1;i++)// count the factors of no1  {if(no1%i==0)  c1=c1+1;  }  c2=0;  for(i=1;i<=no2;i++)// count the factors of no2  {if(no2%i==0)  c2=c2+1;  }  if(c1==2 && c2==2 && Math.abs(no1-no2) == 2)  System.out.println(no1+" and "+ no2+" are twin prime ");  else  System.out.println(no1+" and "+ no2+" not are twin prime ");  }} |

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| **// Application of Sum of Factors – Perfect Number : eg: 6 = 1+2+3=6 Sum of factors other than the number is equal to the given number** |
| import java.util.Scanner;  class mod1  { public static void main(String args[])  { int no,s,i;  Scanner Sc=new Scanner(System.in);  System.out.println("Enter a number");  no=Sc.nextInt();  s=0;  for(i=1;i<no;i++) // sum of factors other than the number  {if(no%i==0)  s=s+i;  }  if(s==no)  System.out.println(no+" is a Perferct number ");  else  System.out.println(no+" is not a Perferct number ");  }} |

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| **// Application of sum of factors – Amicable Numbers-n1 and n2 are amicable numbers if, sum of factors of n1 is equal to n2 and sum of factors of n2 is equal to n1.** |
| import java.util.Scanner;  class mod1  { public static void main(String args[])  { int n1,n2,sfn1,sfn2,i;  Scanner Sc=new Scanner(System.in);  System.out.println("Enter a number");  n1=Sc.nextInt();  System.out.println("Enter a number");  n2=Sc.nextInt();  sfn1=0;  for(i=1;i<n1;i++)// sum of factors of n1  {if(n1%i==0)  sfn1=sfn1+i;  }  sfn2=0;  for(i=1;i<n1;i++)// sum of factors of n2  {if(n1%i==0)  sfn2=sfn2+i;  }  if(sfn1==n2 && sfn2==n1 && Math.abs(n1-n2)==2)  System.out.println(n1+ " and "+ n2 +" Amicable numbers ");  else  System.out.println(n1 + " and "+ n2 +" are not Amicable numbers");  }} |

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| **Automorphic Number** | |
| **Long and inefficient method-Works upto 3 digits** | **Short and efficient method- works for any number of digits** |
| import java.util.Scanner;  class mod1  { public static void main(String args[])  { int n1,sq,r=0;  Scanner Sc=new Scanner(System.in);  System.out.println("Enter a number");  n1=Sc.nextInt();  sq=n1\*n1;  if(n1>1 && n1<10)  r=sq%10;  else if(n1>9 && n1<=99)  r=sq%100;  else if(n1>99 && n1<=999)  r=sq%1000;  if(r==n1)  System.out.println(n1+" is an Automorphic number");  else  System.out.println(n1 + "is not an Automorphic number");  }} | import java.util.Scanner;  class mod1  { public static void main(String args[])  { int n1,sq,n2,c=0,r;  Scanner Sc=new Scanner(System.in);  System.out.println("Enter a number");  n1=Sc.nextInt();  n2=n1;  c=0;  while(n1!=0)  {c=c+1;  n1=n1/10;  }  sq=n2\*n2;  r=sq%(int)Math.pow(10.0,(double)c);  if(r==n2)  System.out.println(n2+" is an Automorphic number");  else  System.out.println(n2 + "is not an Automorphic number");  }} |

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| **Strong Number 145 = 1!+4!+5!** |
| import java.util.Scanner;  class mod1  { public static void main(String args[])  { int n1,n2,s,r,f,i;  Scanner Sc=new Scanner(System.in);  System.out.println("Enter a number");  n1=Sc.nextInt();  n2=n1;  s=0;  while(n1!=0)  {r=n1%10;  f=1;  for(i=1;i<=r;i++)  f=f\*i;  s=s+f;  n1=n1/10;  }    if(s==n2)  System.out.println(n2+" is a Strong number");  else  System.out.println(n2 + " is not a Strong number");  }} |

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| **To Print the denomination for the given number** | |
| **Long and inefficient method** | **Short and efficient method** |
| import java.util.Scanner;  class mod1  { public static void main(String args[])  { int n1,r;  Scanner Sc=new Scanner(System.in);  System.out.println("Enter a number");  n1=Sc.nextInt();  if(n1>=1000)  { r=n1/1000;  System.out.println(r+"x 1000 = "+ r\*1000);  n1=n1%1000;  }  if(n1>=500)  { r=n1/500;  System.out.println(r+"x 500 = "+ r\*500);  n1=n1%500;  }  if(n1>=100)  { r=n1/100;  System.out.println(r+"x 100 = "+ r\*100);  n1=n1%100;  }  if(n1>=50)  { r=n1/50;  System.out.println(r+"x 50 = "+ r\*50);  n1=n1%50;  }  if(n1>=20)  { r=n1/20;  System.out.println(r+"x 20 = "+ r\*20);  n1=n1%20;  }  if(n1>=10)  { r=n1/10;  System.out.println(r+"x 10 = "+ r\*10);  n1=n1%10;  }  if(n1>=5)  { r=n1/5;  System.out.println(r+"x 5 = "+ r\*5);  n1=n1%5;  }  if(n1>=2)  { r=n1/2;  System.out.println(r+"x 2 = "+ r\*2);  n1=n1%2;  }  if(n1==1)  System.out.println("1 x 1 = "+ 1);  }} | import java.util.Scanner;  class mod1  { public static void main(String args[])  { int n1,r,i;  int d[]={1000,500,100,50,20,10,5,2,1};  Scanner Sc=new Scanner(System.in);  System.out.println("Enter a number");  n1=Sc.nextInt();  for(i=0;i<d.length;i++)  { if(n1>=d[i])  { r=n1/d[i];  System.out.println(r+"x"+d[i]+"="+ r\*d[i]);  n1=n1%d[i];  }  }    }} |

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| To convert Decimal number to Binary number (Not in syllabus) |
| **// Convert decimal to binary equvalent**  import java.io.\*;  class st1  {  public static void main(String args[])throws IOException  {  BufferedReader br = new BufferedReader(new InputStreamReader(System.in));  int dnum,i,k,r,t;  int bnum[]=new int[15];    System.out.println("Enter a number");  dnum=Integer.parseInt(br.readLine());  t=dnum;  i=0;    while(dnum!=0)  {  r=dnum%2;  bnum[i]=r;  i++;  dnum=dnum/2;  }  System.out.print("Binary equivalent of "+ dnum +" is ");    for(k=i-1;k>=0;k--)  System.out.print(bnum[k]);  }} |

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| **// To accept 2 number and print their highest common factor and their lowest common factor** |
| import java.io.\*;  class m1  { public static void main(String args[])throws IOException  {BufferedReader br = new BufferedReader(new InputStreamReader(System.in));  int n2,n1,sn,lcm,hcf=0,i;  System.out.println("Enter a number");  n2=Integer.parseInt(br.readLine());  n1=Integer.parseInt(br.readLine());  sn=Math.min(n1,n2);  for(i=1;i<=sn;i++)  {  if(n1%i==0 && n2%i==0)  hcf=i;  }  lcm=(n1\*n2)/hcf;  System.out.println("The HCF of "+n1+" and "+ n2 +" is "+hcf);  System.out.println("The LCM is "+n1+" and "+ n2 +" is "+lcm);  }} |

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| **// Sum of all the prime digits in the given number** |
| import java.io.\*;  class m1  {  public static void main(String args[])throws IOException  {  BufferedReader br = new BufferedReader(new InputStreamReader(System.in));  int n,n1,r,s=0;    System.out.println("Enter a number");  n=Integer.parseInt(br.readLine());  n1=n;  while(n!=0)  {  r=n%10;  if(r==1 || r==2 || r==3 || r==5 || r==7)  s=s+r;  n=n/10;  }  System.out.println("The sum of all prime digits in "+n1+" is "+s);  }} |