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| **Leap Year:**  #include<stdio.h>  void main(){  int year;  printf("Enter a year:");  scanf("%d",&year);  if((year%400==0) || ((year%4==0) && (year%100!=0))) printf("Leap Year");  else   printf("Not a leap year");  }  **Largest of 3 numbers:**  #include<stdio.h>  void main(){  int a,b,c;  printf("Enter three numbers:");  scanf("%d%d%d",&a,&b,&c);  if(a>b && a>c)   printf("largest=%d", a);  else if (b>a && b>c)   printf("largest=%d", b);  else   printf("largest=%d", c);  }  **Roots of Quadratic Equation**  #include<stdio.h>  #include<math.h>  void main(){  float a,b,c,d,r1,r2,rp,ip;  printf("Enter value of a,b,c:");  scanf("%f%f%f",&a,&b,&c);  d = sqrt(b\*b - 4\*a\*c);  if(d>=0)  {   r1 = (-b+sqrt(d))/2\*a;   r2 = (-b-sqrt(d))/2\*a;   printf("Roots are:%0.2f and %0.2f",r1,r2);  }  else  {   d = -d;   rp = -b/2\*a;   ip = d/2\*a;   printf("Roots are:%0.2f+i%0.2f and %0.2f-i%0.2f",rp,ip,rp,ip); }  }  **Basic Calculator:**  #include<stdio.h>  void main(){  int a,b,choice;  float c;  char ans='n';  do  {   printf("Enter two numbers:");   scanf("%d%d",&a,&b);   printf("\n1.ADDITION\n2.SUBTRACTION\n3.MULTIPLICATION\n4.DIVISION"); printf("\nEnter your choice : ");   scanf("%d",&choice);   switch(choice) |

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| {   case 1:c=a+b;   printf("Result: %d",c);   break;   case 2:c=a-b;   printf("Result: %d",c);   break;   case 3:c=a\*b;   printf("Result: %d",c);   break;   case 4:c=a/b;   printf("Result: %f",d);   break;   default:printf("Wrong Choice");   }   printf("\nDo you want to continue???");   ans = getch();  }while(ans=='y' || ans=='Y');  }  **Sum of first ‘n’ numbers:**  #include<stdio.h>  void main(){  int n,i,sum=0;  printf("Enter the value of n:");  scanf("%d",&n);  for(i=1;i<=n;i++)   sum=sum+i;  printf("Sum of n numbers: %d",sum);  }  **Factorial of a number:**  #include<stdio.h>  void main(){  int i,n,fact=1;  printf("Enter the no");  scanf("%d",&n);  for(i=1;i<=n;i++)   fact=fact\*i;  printf("Factorial is: %d",fact);  }  **Fibonacci Series:**  #include<stdio.h>  void main()  {  int i,no,a=0,b=1,c;  printf("Enter the value of n:");  scanf("%d",&no);  printf("%d\n%d\n",a,b);  for(i=1;i<=n-2;i++)  {   c=a+b;   printf("%d",c);   a=b;   b=c;  }  }  **Factors of a number:**  #include<stdio.h>  void main(){  int n,i; |

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| printf("Enter a number:");  scanf("%d",&n);  printf("Factors are:\n");  i=2;  while(i<=n-1)  {   if(n%i==0)   printf("%d\n",i);   i++;  }  }  **Prime Number:**  #include<stdio.h>  void main(){  int n,i=2,prime=1;  printf("Enter the No:");  scanf("%d",&n);  while(i<=n/2)  {   if(n%i==0)   {   prime=0;   break;   }   i++;  }  if(prime==1)   printf("%d is a Prime no",n);  else   printf("%d is not a Prime no",n);  }  **Prime Numbers from 1 to 100:**  #include<stdio.h>  void main(){  int limit=100,i,n,prime;  for(n=2;n<=limit;n++)  {   i=2,prime=1;   while(i<=n/2)   {   if(n%i==0)   {   prime=0;   break;   }   i++;   }   if(prime==1)   {   printf("%d\n",n);   }  }  }  **Sum and product of digits of a number:**  #include<stdio.h>  void main(){  int n,dig,sum=0,p=1;  printf("Enter any number:");  scanf("%d",&n);  do |

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| {   dig=n%10;   sum=sum+dig;   p=p\*dig;   n=n/10;  }while(n!=0);   printf("Sum is:%d",sum);   printf("Product is:%d",p);  }  **Armstrong Number:**  #include<stdio.h>  void main(){  int n,cp,dig,sum=0;  printf("Enter any number:");  scanf("%d",&n);  cp=n;  do  {   dig=n%10;   sum=sum+dig\*dig\*dig;   n=n/10;  }while(n!=0);  if(sum==cp)   printf("Armstrong Number");  else   printf("Not an Armstrong Number");  }  **Armstrong Number from 1 to 1000:**  #include<stdio.h>  void main(){  int n,temp,dig,sum,limit=1000;  for(n=1; n<=limit; n++)  {   temp=n;   sum=0;   while(n>0)   {   dig=n%10;   sum=sum+(dig\*dig\*dig);   n=n/10;   }   if(temp==sum)   |  |  | | --- | --- | | } } | printf("%d\n",no); |   **Reverse of a number:**  #include<stdio.h>  void main(){  int n,digit,rev=0;  printf("Enter a number");  scanf("%d",&n);  while(n!=0)  {   digit=n%10;   rev=rev\*10+digit;   n=n/10;  }  printf("Reverse is: %d",rev);  } |

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| **Palindrome Number:**  #include<stdio.h>  void main(){  int n,digit,rev=0,og;  printf("Enter a number:");  scanf("%d",&n);  og = n;  while(n >= 1)  {   digit = n % 10;   rev = rev \* 10 + digit;   n = n / 10;  }  if(og==rev)   printf("Palindrome Number");  else   printf("Not a Palindrome Number");  }  **LCM and GCD of numbers:**  #include<stdio.h>  void main(){  int n1,n2,lcm,gcd;  printf("Enter two numbers:");  scanf("%d%d",&n1,&n2);  if(n1>n2)  {   lcm=n1;   gcd=n2;  }  else  {   lcm=n2;   gcd=n1;  }  while(lcm%n1!=0 || lcm%n2!=0)   lcm++;  while(n1%gcd!=0 || n2%gcd!=0)   gcd--;  printf("LCM=%d\nGCD=%d",lcm,gcd);  }  **Binary equivalent of Decimal number:**  #include<stdio.h>  void main(){  long int bn = 0;  int digit, n, temp = 1;  printf("Enter a Number:");  scanf("%d",&n);  while(n!=0){   digit = n%2;   bn = bn + digit \* temp;   temp = temp \* 10;   n = n/2;  }  printf("Binary Number is: %ld",bn);  } |

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| **Even/Odd Nunber:**  case 1:printf("January"); break;  #include<stdio.h> case 2:printf("February"); break;  void main(){ case 3:printf("March"); break;  int num; case 4:printf("April"); break;  printf("Enter the number:"); case 5:printf("May"); break;  scanf("%d",&num); case 6:printf("June"); break;  if(num%2==0) case 7:printf("July"); break;  printf("\n%d is even number",num); case 8:printf("August"); break;  else case 9:printf("September"); break;  printf("\n%d is odd number",num); case 10:printf("October"); break;  } case 11:printf("November"); break;  case 12:printf("December"); break;  **Largest of 3 Numbers:** default: printf("Invalid number");  #include<stdio.h> }  void main(){ }  int a,b,c;  printf("Enter three numbers:"); **Sum of n numbers:**  scanf("%d%d%d",&a,&b,&c); #include<stdio.h>  if(a>b && a>c) void main(){  printf("largest=%d", a); int n,i,sum=0;  else if (b>a && b>c) printf("Enter the value of n:");  printf("largest=%d", b); scanf("%d",&n);  else for(i=1;i<=n;i++)  printf("largest=%d", c); sum=sum+i;  } printf("Sum of n numbers: %d",sum);  }  **Largest of 3 Numbers using Nested if-**  **else:**  **To count no. of digits:**  #include<stdio.h> #include<stdio.h>  void main(){ void main(){  int a,b,c; int n,count=0;  printf("Enter three integers:"); printf("Enter number:");  scanf("%d%d%d",&a,&b,&c); scanf("%d",&n);  if(a>b){ while(n!=0){  if(a>c) count++;  printf("a is the biggest"); n=n/10;  else }  printf("c is biggest"); }  }  else { **Factors of a number:**  if(b>c) #include<stdio.h>  printf("b is biggest"); void main(){  else int n,i;  printf("c is biggest"); printf("Enter a number:");  } scanf("%d",&n);  } printf("Factors are:\n");  i=2;  **To find character is an alphabet:**  while(i<=n-1){  #include<stdio.h> if(n%i==0)  void main(){ printf("%d\n",i);  char c; i++;  printf("Enter a character:"); }  scanf("%c",&c); }  if((c>='a' && c<='z') || (c>='A' &&  c<='Z')) **Multiplication Table:**  printf("%c is an alphabet",c); #include <stdio.h>  else void main(){  printf("%c is not an alphabet",c); int n,i,j;  } printf("Enter an integer:");  scanf("%d",&n);  **Month Name:**  for(i=1;i<=n;i++){  #include<stdio.h> for(j=1;j<=10;j++)  void main(){ printf("%d\t", i\*j);  int month; printf("\n");  printf("Enter a month number:"); }  scanf("%d",&month); }  switch(month){ |

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| **Pattern Programs:**  1.  \*\*\*\*  \*\*\*  \*\*  \*  #include<stdio.h>  void main(){  inti,j,n=4;  for(i=0;i<n;i++){  for(j=0;j<n;j++){  printf("\*");  }  n--;  printf("\n");  }  }  2.  \*   \* \*  \* \* \*   \* \*   \*  #include<stdio.h>  void main(){  int i,j;  for(i=1;i<=3;i++){  for(j=1;j<=3-i;j++){  printf(" ");  }  for(j=1;j<=i;j++){  printf("\* ");  }  printf("\n");  }  for(i=3-1;i>=1;i--) {//for downward pyramid  for(j=1;j<=3-i;j++){  printf(" ");  }  for(j=i;j>=1;j--){  printf("\* ");  }  printf("\n");  }  }  3.  1   121   12321  1234321  #include<stdio.h>  void main(){  int i,j;  for(i=1;i<=4;i++){  for(j=1;j<=4-i;j++){  printf(" ");  }  for(j=1;j<=i;j++){  printf("%d",j);  }  for(j=i-1;j>=1;j--){ |

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| printf("%d",j);  }  printf("\n");  }  }  4.  \*  \*\*  \*\*\*  \*\*\*\*  #include<stdio.h>  void main(){  int no,i,j;  printf(“Enter no of rows\n”);  scanf(“%d”,&no);  for(i=1;i<=no;i++){  for(j=1;j<=i;j++){  printf(“\*”);  }  printf(“\n”);}}  5.  1  12  123  1234  #include<stdio.h>  void main(){  int no,i,j;  printf(“Enter no of rows\n”);  scanf(“%d”,&no);  for(i=1;i<=no;i++){  for(j=1;j<=i;j++){  printf(“%d”,j);  }  printf(“\n”);  }  }  6.(Pascal triangle)  1   1 1   1 2 1  1 3 3 1  #include<stdio.h>  int facto(int no){  int i,fact=1;  for(i=1;i<=no;i++){  fact=fact\*i;  }  return fact;  }  void main(){  int no,fa,i,j;  printf("Enter no\n");  scanf("%d",&no);  for(i=0;i<no;i++){  for(j=0;j<no-i;j++){  printf(" ");  }  for(j=0;j<=i;j++){ |

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| fa=facto(i)/(facto(j)\*facto(i-j));  printf("%d ",fa);  }  printf("\n");  }  }  7.  A   ABA   ABCBA  ABCDCBA  #include<stdio.h>  void main(){  int i,j,n;  printf("Enter the number of lines:");  scanf("%d",&n);  for(i=1;i<=n;i++){  for(j=1;j<=n-i;j++){  printf(" ");  }  for(j=1;j<=i;j++){  printf("%c",(char)(j+64));  }  for(j=i-1;j>=1;j--){  printf("%c",(char)(j+64));  }  printf("\n");  }  }   |  |  | | --- | --- | | 8. | \* |   \* \*   \* \* \*  \* \* \* \*   \* \* \*   \* \*   \*  #include<stdio.h>  void main()  {  int i,j,n;  printf("Enter the number of \* in the middle line:");  scanf("%d",&n);  for(i=1;i<=n;i++){  for(j=1;j<=n-i;j++){  printf(" ");  }  for(j=1;j<=i;j++){  printf("\*");  }  printf("\n");  }  for(i=n-1;i>=1;i--) {//for downward pattern  for(j=1;j<=n-i;j++){  printf(" ");  }  for(j=1;j<=i;j++){  printf("\*");  }  printf("\n");  } |

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| }  9.  A  B C  D E F  G H I J  K L M N  #include<stdio.h>  void main(){  int i,j,n,k;  printf("Enter the number of lines:");  scanf("%d",&n);  for(i=1,k=1;i<=n;i++){  for(j=1;j<=i;j++){  printf("%c ",64+k);  k++;  }  printf("\n");  }  }  10.  A  A B  A B C  A B C D  A B C D E  #include<stdio.h>  void main(){  int i,j,n=5,k;  for(i=1;i<=n;i++){  for(j=1,k=1;j<=i;j++){  printf("%c ",64+k);  k++;  }  printf("\n");  }  }  11.  1  1 2  1 2 3  1 2 3 4  Solution:  #include <stdio.h>  void main(){  int i,j,n;  printf("Enter line no:");  scanf("%d",&n);  for ( i = 1; i <= n; i++){  for ( j = 1; j <= i; j++){  printf("%d",j);  }  printf("\n");  }  }  11.  1   1 2 A   1 2 3 A B  1 2 3 4 A B C |

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| #include <stdio.h>  void main(){  int i,j,k,l,n, alpha=65;  printf("Enter line no:");  scanf("%d",&n);  for(i=1;i<=n;i++){  for(j=n;j>i;j--){  printf(" ");  }  for(k=1;k<=i;k++) {  printf("%d",k);  }  for(alpha=65,l=1;l<i;l++,alpha++) {  printf("%c",(char)alpha);  }  printf("\n");  }  } |

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| **WAP to calculate the valueof aseries: 1 + 22 + 33 … nn**.  #include<stdio.h>  #include<math.h>  void main(){  int n, i, sum = 0;  printf("Enter any integer:");  scanf("%d",&n);  for(i=1;i<=n;i++)   sum = sum + pow (i,i);  printf("\nSum = %d",sum);  }  **WAP to calculate the valueof aseries: ½ + ¾ +** ⅚ **… n terms.**  #include<stdio.h>  void main(){  int n,i,j;  float sum = 0;  printf("Enter any integer:");  scanf("%d",&n);  for(i=1,j=1;i<=n;i++,j=j+2)   sum = sum + (float)j/(j+1);  printf("\nSum=%f",sum);  }  **WAP to calculate the valueof aseries: ½ - ¾ +** ⅚ **- ⅞ … n terms.**  #include<stdio.h>  void main(){  int n,i,j,s=1;  float sum = 0;  printf("Enter any integer:");  scanf("%d",&n);  for(i=1,j=1;i<=n;i++,j=j+2)  {   sum = sum + s \* (float)j/(j+1);   s=-s;  }  printf("\nSum=%f",sum);  }  **WAP to calculate the valueof aseries: 1/1! + 2/2! + 3/3! … n/n!.**  #include <stdio.h>  void main(){  float n,sum=0, f=1, i;  printf("Enter the value:");  scanf("%f",&n);  for(i=1;i<=n;i++)  {   f = f \* i;   sum = sum + (i/f);  }  printf("Sum of the series= %f",sum);  }  **WAP to calculate valueofaseries: x - x/2! + x/3! - x/4!...x/n!**  #include<stdio.h>  void main(){  float n,sum=0, f=1, i, s=1,x;  printf("Enter value of n and x:");  scanf("%f%f", &n,&x);  for(i = 1; i <= n; i++) { |

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| f = f \* i;   sum = sum + s\*(x/f);   s=-s;  }  printf("Sum of the series= %f",sum);  }  **WAP to calculate valueofaseries: sin x = x - x3/3! + x5/5! … xn/n!**  #include<stdio.h>  #include<math.h>  void main(){  int i,n,fact=1,sign=-1;  float x,num,sum,term;  printf("Enter the angle in degrees and value of n");  scanf("%f%d",&x,&n);  x=x\*3.14/180;  sum=x;  for(i=3;i<=n;i=i+2)  {   fact=fact\*i\*(i-1);   term=pow(x,i)/fact;   sum=sum+sign\*term;   sign=-sign;  }  printf("Value of series= %f",sum);  } |

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| **Program to find sum of three numbers:**  #include<stdio.h>  void main() {   int a,b,c, sum;   printf("Enter 3 numbers\n");   scanf("%d%d%d",&a,&b,&c);   sum=a+b+c;   printf("Result is: %d",sum);  }  **Program to find whether number is even or odd:**  #include<stdio.h>  void main() {   int number;   printf("Enter a number:");   scanf("%d ",&number);   (number%2==0) ? printf("Number is Even") : printf("Number is Odd"); }  **Program to find largest of three numbers using conditional operator:** #include<stdio.h>  void main() {   int a,b,c,greatest;   printf("Enter three numbers:\n");   scanf("%d%d%d",&a,&b,&c);   greatest = (a>b) ? (a>c ? a:c) : (b>c ? b:c);   |  |  | | --- | --- | | } | printf("The greatest Number is: %d", greatest); |   **Program to find area of circle and rectangle:**  #include<stdio.h>  void main(){   int radius,length,breadth;   float area;   const float PI = 3.14;   printf("Enter radius:");   scanf("%d",&radius);   area = PI \* radius \* radius;   printf("Area of circle is:%f",area);   printf("\nEnter length and breadth:");   scanf("%d%d",&length,&breadth);   area = length \* breadth;   |  |  | | --- | --- | | } | printf("Area of circle is:%f",area); |   **Program to swap two numbers:**  #include<stdio.h>  void main() {   int a,b,t;   printf("Enter any two numbers\n");   scanf("%d%d",&a,&b);   t=a;   a=b;   b=t;   printf("Answer is=%d%d",a,b);  }  **Program to swap two numbers without using third variable:** #include<stdio.h>  void main() {   int a,b;   printf("Enter the value of A and B");   scanf("%d%d",&a,&b); |

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| printf("\nBefore Swapping: A=%d and B=%d",a,b);  a=a+b;  b=a-b;  a=a-b;   |  |  | | --- | --- | | } | printf("\nAfter Swapping: A=%d and B=%d",a,b); | |