### Simple C programs:

|  |  |
| --- | --- |
| ***Hello world***  #include <stdio.h> #include <conio.h> void main()  {  clrscr();  printf("Hello world\n"); getch();  } | ***Output:***  Hello world |
| ***Add two numbers:***  #include<stdio.h> #include <conio.h> void main()  {  int a, b, c;  clrscr();  printf("Enter two numbers to add\n"); scanf("%d%d",&a,&b);  c = a + b;  printf("Sum of entered numbers is %d\n",c); getch();  } | ***Output:***  Enter two numbers to add 4  5  Sum of entered numbers is 9 |
| ***Area and circumference of circle:***  #include <stdio.h> #include <conio.h> void main()  {  int r; float a,c; clrscr();  printf("Enter r value\n"); scanf("%d",&r); a=3.14\*r\*r;  c=2\*3.14\*r;  printf("area of the circle is %f\n",a); printf("circumference of the circle is %f\n",c); getch();  } | ***Output:***  Enter r value 2  area of the circle is 12.56  circumference of the circle is 12.56 |
| ***Area of rectangle:***  #include <stdio.h> #include <conio.h> void main()  { |  |

|  |  |
| --- | --- |
| int l,b,a;  clrscr();  printf("Enter l,b value\n"); scanf("%d%d", &l, &b); a=l\*b;  printf("area of the rectangle is %d",a); getch();  } | ***Output:***  Enter l,b value 2  3  area of the rectangle is 6 |
| ***Average of three subjects marks:***  #include <stdio.h> #include <conio.h> void main()  {  int m1,m2,m3,tot; float avg;  clrscr();  printf("Enter three subject marks\n"); scanf("%d%d%d", &m1, &m2, &m3); tot=(m1+m2+m3);  avg=(tot/3);  printf("average of three marks is %f", avg); getch();  } | ***Output:***  Enter three subject marks 50  60  70  average of three marks is 60.0 |
| ***All arithmetic operations:*** #include <stdio.h> #include <conio.h> void main()  {  int a, b, c, d, e; float f; clrscr();  printf("Enter two integers\n"); scanf("%d%d", &a, &b);  c = a + b; d = a - b; e = a \* b; f = a / b;  printf("Sum = %d\n",c); printf("Difference = %d\n",d); printf("Multiplication = %d\n",e); printf("Division = %f\n",f); getch();  } | ***Output:***  Enter two integers 10  5  Sum =15  Difference = 5  Multiplication = 50  Division = 2.0 |

|  |  |
| --- | --- |
| ***Swap two numbers using temp variable***  #include <stdio.h> #include<conio.h> void main()  {  int x, y, temp; clrscr();  printf("Enter the value of x and y\n"); scanf("%d%d", &x, &y);  printf("Before Swapping\nx = %d\ny = %d\n",x,y); temp = x;  x = y;  y = temp;  printf("After Swapping\nx = %d\ny = %d\n",x,y); getch();  } | ***Output:***  Enter the value of x and y 5  10  Before Swapping x = 5, y  =10  After Swapping x =10, y =5 |
| **Swap two numbers without using temp variable**  #include <stdio.h> #include<conio.h> void main()  {  int x, y; clrscr();  printf("Enter the value of x and y\n"); scanf("%d%d", &x, &y);  printf("Before Swapping\nx = %d\ny = %d\n",x,y); x=x+y;  y=x-y;  x=x-y;  printf("After Swapping\nx = %d\ny = %d\n",x,y); getch();  } | ***Output:***  Enter the value of x and y 5  10  Before Swapping x = 5, y  =10  After Swapping x =10, y =5 |
| ***Temperature conversion:*** #include<stdio.h> #include<conio.h>  void main ()  {  float cel, faren; clrscr();  printf ("Enter the Temperature in Celcius:"); scanf ("%f", &cel);  faren = (1.8 \* cel) + 32;  printf ("The Temperature in Fahreinheit is:%f", faren); getch();  } | ***Output:***  Enter the Temperature in Celcius:  20  The Temperature in Fahreinheit is:  68 |
| ***program to find simple interest:*** |  |

|  |  |
| --- | --- |
| #include <stdio.h> | **Output:** |
| #include <conio.h> | Enter p,n,r value |
| void main() | 1000 |
| { | 20 |
| int p,n; | 0.5 |
| float r, si; | the simple interest is 100 |
| clrscr(); |  |
| printf("Enter p,n,r value\n"); |  |
| scanf("%d%d%f", &p, &n, &r); |  |
| si=(p\*n\*r)/100; |  |
| printf("the simple interest is %f",si); |  |
| getch(); |  |
| } |  |

|  |  |
| --- | --- |
| **Find greatest number:** #include<stdio.h> #include<conio.h>  void main()  {  int x=15,y=13; clrscr();  if (x > y )  printf("x is greater than y"); getch();  } | **Output:**  x is greater than y |

|  |  |
| --- | --- |
| ***Greatest of two numbers:*** #include <stdio.h> #include <conio.h> void main()  {  int a,b; clrscr();  printf("Enter a, b value**\n**"); scanf("%d%d", &a,&b); if(a>b)  printf("%d is the greatest number",a); else  printf("%d is the greatest number",b); getch();  } | ***Output:***  Enter a, b value 3  5  5 is the greatest number |

|  |  |
| --- | --- |
| ***Odd or even number*** #include <stdio.h> #include <conio.h> void main()  {  int n; clrscr();  printf("Enter an integer\n"); scanf("%d", &n);  if (n%2 == 0) printf("Even\n");  else  printf("Odd\n"); getch();  } | ***Output:***  Enter an integer 8  Even |
| ***Leap year or not:***  #include <stdio.h> #include <conio.h> void main()  {  int year; clrscr();  printf("Enter a year\n"); scanf("%d", &year);  if ( year%4 == 0) printf("leap year.\n"); else  printf("not a leap year.\n"); getch();  } | ***Output:*** Enter a year 2015  not a leap year |
| ***Positive or negative number*** #include <stdio.h> #include <conio.h> void main()  {  int n; clrscr();  printf("Enter an integer\n"); scanf("%d", &n);  if (n>= 0)  printf("Positive number"); else  printf("Negative number"); getch();  } | ***Output:***  Enter an integer 5  Positive number |

|  |  |
| --- | --- |
| ***Greatest of 3 numbers*** |  |
| #include <stdio.h> |  |
| #include<conio.h> |  |
| void main() | **Output:** |
| { | Enter three number |
| int a, b, c; | 23 |
| clrscr(); | 5 |
| printf("Enter three numbers: "); | 12 |
| scanf("%d %d %d", &a, &b, &c); | Largest number=23 |
| if (a>b) |  |
| { |  |
| if(a>c) |  |
| printf("Largest number = %d",a); |  |
| else |  |
| printf("Largest number = %d",c); |  |
| } |  |
| else |  |

|  |  |
| --- | --- |
| {  if(b>c)  printf("Largest number = %d",b); else  printf("Largest number = %d",c);  }  getch();  } |  |

The expression is tested from the top(of the ladder) downwards. As soon as the true condition is found, the statement associated with it is executed.

|  |  |
| --- | --- |
| **Find the number divisible by both 5 and 8** |  |
| #include<stdio.h> | **Output:** |
| #include<conio.h> | enter a number |
| void main( ) | 10 |
| { | divisible by 5 |
| int a; |  |
| clrscr(); |  |
| printf("enter a number"); |  |
| scanf("%d",&a); |  |

|  |  |
| --- | --- |
| if( a%5==0 && a%8==0) printf("divisible by both 5 and 8"); else if( a%8==0 )  printf("divisible by 8"); else if(a%5==0) printf("divisible by 5"); else  printf("divisible by none"); getch();  } |  |
| ***Roots of quadratic equation using else if*** |  |
| #include <stdio.h> | ***Output:*** |
| #include <conio.h> | enter the value of a,b & c |
| #include<math.h> | 1 |
| void main() | -7 |
| { | 0 |
| int a,b,c,d; | Both roots are real |
| float x1,x2; | First Root x1 = 0.0 |
| clrscr(); | Second Root x2 = 7.0 |
| printf("enter the value of a,b & c\n"); |  |
| scanf("%d%d%d",&a,&b,&c); |  |
| d=b\*b-4\*a\*c; |  |
| if(d==0) |  |
| { |  |
| printf("Both roots are equal\n"); |  |
| x1=-b/(2.0\*a); |  |
| x2=x1; |  |
| printf("First Root x1= %f\n",x1); |  |
| printf("Second Root x2= %f\n",x2); |  |
| } |  |
| else if(d>0) |  |
| { |  |
| printf("Both roots are real and diff-2\n"); |  |
| x1=(-b+sqrt(d))/(2\*a); |  |
| x2=(-b-sqrt(d))/(2\*a); |  |
| printf("First Root x1= %f\n",x1); |  |
| printf("Second Root x2= %f\n",x2); |  |
| } |  |
| else |  |
| printf("Root are imaginary\n"); |  |
| getch(); |  |
| } |  |

|  |  |  |
| --- | --- | --- |
| ***Student details using else if :*** #include<stdio.h> #include<conio.h>  void main ()  {  int m1,m2,m3,total; float GPA;  clrscr();  printf("Enter three subject marks"); scanf("%d%d%d",&m1,&m2,&m3); total=m1+m2+m3; GPA=total\*100/300;  if(GPA >=90&& GPA <=100) printf("DISTINGSTION");  else if(GPA >=80&& GPA <=89) printf("FIRST CLASS");  else if(GPA >=70&& GPA <=79) printf("SECOND CLASS");  else if(GPA >=50&& GPA <=69) printf("THIRD CLASS");  else  printf("FAIL"); getch();  } | | ***Output:***  Enter three subject marks 90  100  80  DISTINGSTION |
| **Arithmetic operations using switch:**  #include<stdio.h> #include<conio.h> void main()  {  int a,b,c,choice; clrscr(); while(choice!=3)  {  printf("\n 1. Press 1 for addition");  printf("\n 2. Press 2 for subtraction"); printf("\n Enter your choice"); scanf("%d",&choice);  switch(choice)  {  case 1:  printf("Enter 2 numbers"); scanf("%d%d",&a,&b); c=a+b;  printf("The sum is %d",c); break;  case 2:  printf("Enter 2 numbers"); scanf("%d%d",&a,&b);  c=a-b;  printf("The difference is %d",c); break;  default:  printf("you have passed a wrong key"); printf("\n press any key to continue");  }  }  getch();  } | **Output:**  Press 1 for addition Press 2 for subtraction Enter your choice  1  Enter 2 numbers  4  5  The sum is 9 | |
| ***Student details using switch case*** #include<stdio.h> #include<conio.h>  void main()  {  int m1,m2,m3,gpa; float tot, avg; clrscr();  printf("Enter three subject Marks");  scanf("%d%d%d",&m1,&m2,&m3); tot=m1+m2+m3; | **Output:**  Enter three subject Marks 100  90  80  grade=A | |

|  |  |
| --- | --- |
| avg=tot/3; gpa=avg/10; switch(gpa)  {  case 10 :  case 9 :  case 8 : printf("grade=A"); break;  case 7 : printf("grade=B"); break;  case 6 : printf("grade=C"); break;  case 5 : printf("grade=D"); break;  default : printf("grade=F");  }  getch();  } |  |

|  |  |
| --- | --- |
| ***sum of n numbers*** |  |
| #include <stdio.h> |  |
| #include<conio.h> |  |
| void main() | **Output:** |
| { | Enter the number |
| int n, sum = 0, i ; | 5 |
| clrscr(); | Sum of entered integers 15 |
| printf("Enter the number\n"); |  |
| scanf("%d", &n); |  |
| for (i = 1; i <= n; i++) |  |
| sum = sum + i; |  |
| printf("Sum of entered integers =%d",sum); |  |
| getch(); |  |
| } |  |
| ***sum of n odd numbers*** |  |
| #include <stdio.h> |  |
| #include<conio.h> |  |
| void main() | **Output:** |
| { | Enter the number |
| int n, sum = 0, i ; clrscr(); | 5 |
| printf("Enter the number\n"); | Sum of entered odd number |
| scanf("%d", &n); | 9 |
| for (i = 1; i <= n; i=i+2) |  |
| sum = sum + i; |  |
| printf("Sum of entered odd number =%d",sum); |  |
| getch(); |  |
| } |  |
| ***Sum of even numbers*** |  |
| #include <stdio.h> |  |
| #include<conio.h> |  |
| void main() | **Output:** |
| { | Enter the number |
| int n, sum = 0, i ; | 6 |
| clrscr(); | Sum of entered even numbers |
| printf("Enter the number\n"); | 12 |
| scanf("%d", &n); |  |
| for (i = 2; i <= n; i=i+2) |  |
| sum = sum + i; |  |
| printf("Sum of entered even numbers =%d",sum); |  |
| getch(); |  |
| } |  |
| ***sum of squares numbers*** |  |
| #include <stdio.h> |  |
| #include<conio.h> |  |
| void main() | **Output:** |
| { | Enter the number |
| int n, sum = 0, i ; | 3 |
| clrscr(); | Sum of squares |
| printf("Enter the number\n"); | 14 |
| scanf("%d", &n); |  |
| for (i = 1; i <= n; i++) |  |
| sum = sum + i\*i; |  |
| printf("Sum of squares =%d",sum); |  |
| getch(); |  |
| } |  |
| ***sum of cubes numbers*** |  |
| #include <stdio.h> |  |
| #include<conio.h> |  |
| void main() | **Output:** |
| { | Enter the number |
| int n, sum = 0, i ; | 2 |
| clrscr(); | Sum of cubes |
| printf("Enter the number\n"); | 9 |
| scanf("%d", &n); |  |
| for (i = 1; i <= n; i++) |  |
| sum = sum + i\*i\*i; |  |
| printf("Sum of cubes =%d",sum); |  |
| getch(); |  |
| } |  |
| ***Product of a number/ factorial number*** |  |
| #include <stdio.h> |  |
| #include<conio.h> |  |
| void main() | **Output:** |
| { | Enter the number |
| int n, fact=1, i ; | 2 |
| clrscr(); | Factorial of number is |
| printf("Enter the number\n"); | 2 |
| scanf("%d", &n); |  |
| for (i = 1; i <= n; i++) |  |
| fact = fact \* i; |  |
| printf("Factorial of number is =%d",fact); |  |
| getch(); |  |
| } |  |
| ***Sum of series 1+1/2+1/3+ + 1/n***  #include <stdio.h> #include<conio.h> void main()  {  double sum=0.0,n,i; clrscr();  printf("Enter the number\n"); scanf("%lf", &n);  for (i = 1; i <= n; i++) sum = sum + (1/i);  printf("Sum of the series =%lf ",sum); getch();  } | **Output:**  Enter the number 4  Sum of the series 20.0833 |
| ***Sum of series 1/1!+1/2!+1/3!+… + 1/n!***  #include <stdio.h> #include<conio.h> void main()  {  double n, fact= 1.0, sum = 0.0, i ; clrscr();  printf("Enter the number\n"); scanf("%lf", &n);  for (i = 1; i <= n; i++)  {  fact=fact \* i;  sum = sum + (1/fact);  }  printf("Sum of the series =%lf",sum); getch();  } | **Output:**  Enter the number 3  Sum of the series 1.6666 |
| ***Fibonacci series*** #include<stdio.h> #include<conio.h> void main()  {  int n, a = 0, b = 1, i, c; clrscr();  printf("Enter the limit\n"); scanf("%d",&n); printf("%d,%d,",a,b);  for (i=1;i<=n;i++)  {  c=a+b; printf("%d,",c);  a=b; b=c;  }  getch();  } | **Output:**  Enter the limit 6  0,1,1,2,3,5 |
| ***To check Prime number or not*** #include<stdio.h> #include<conio.h>  void main()  {  int n, i, count=0; clrscr();  printf("Enter the no to check prime or not\n"); scanf("%d",&n);  for(i=1;i<=n;i++)  {  if(n%i==0)  {  count++;  }  }  if(count==2)  printf("The number is a prime number"); else  printf("The number is not a prime number"); getch();  } | **Output:**  Enter the no to check prime or not 7  The number is a prime number |

|  |  |  |
| --- | --- | --- |
| **print half Pyramid of numbers** #include<stdio.h> #include<conio.h>  void main( )  {  int i,j; clrscr();  for(i=1;i<5;i++)  {  printf("\n");  for(j=i;j>0;j--)  { printf("%d",j);  }  }  getch();  } | **output:**  1  21  321  4321  54321 | |
| ***Sum of individual digits*** #include<stdio.h> #include<conio.h>  void main()  {  int n, sum = 0, a; clrscr();  printf("Enter a number\n"); scanf("%d", &n);  while (n != 0)  {  a = n %10;  sum = sum + a; n = n/10;  }  printf("The sum of digits: %d\n",sum); getch();  } | | **Output:**  Enter a number 123  The sum of digits: 6 |
| ***Reverse the given number*** include <stdio.h> #include<conio.h>  void main()  {  int n, sum = 0;  printf("Enter a number to reverse\n"); scanf("%d", &n);  while (n != 0)  {  a = n %10;  sum = sum\*10+ a; n = n/10;  }  printf("Reverse of entered number=%d”,sum); getch();  } | | **Output:**  Enter a number to reverse 123  Reverse of entered number= 321 |
| ***Check the number is palindrome or not***  #include <stdio.h> #include<conio.h> void main()  {  int n, sum = 0, org, a; clrscr();  printf("Enter a number to check palindrome:\n");  scanf("%d",&n); org = n;  while( n != 0 )  {  a = n %10;  sum = sum\*10 + a; n = n/10;  }  if ( sum == org )  printf("It is a palindrome number.\n"); else  printf("it is not a palindrome number.\n"); getch();  } | | **Output:**  Enter a number to check palindrome:  121  It is a palindrome number. |
| ***Check whether Armstrong number or not:***  #include <stdio.h> #include<conio.h> void main()  {  int n, sum = 0, a, org; clrscr();  printf("Enter a number\n"); scanf("%d", &n);  org=n;  while (n != 0)  {  a = n %10;  sum = sum + a\*a\*a; n = n/10;  }  if(sum==org)  printf("Its an Armstrong number"); else  printf("Its an not Armstrong number"); getch();  } | | **Output:**  Enter a number 153  Its an Armstrong number |
| ***check the number is perfect or not*** #include<stdio.h> #include<conio.h>  void main()  {  int n,i=1,sum=0; printf("Enter a number: ");  scanf("%d",&n); while(i<n)  {  if(n%i==0) sum=sum+i; i++;  }  if(sum==n)  printf("%d is a perfect number",i); else  printf("%d is not a perfect number",i); getch();  } | | **Output:**  Enter a number: 6  6 is a perfect number |

|  |  |
| --- | --- |
| **print first ten multiple of 5** #include<stdio.h> #include<conio.h>  void main()  {  int a=5,i=1; clrscr();  do  {  printf("%d\t",a\*i); i++;  }  while(i <= 10); getch();  } | **output**  5  10  15  20  25  30  35  40  45  50 |
| ***add all numbers entered by user until 0***  #include <stdio.h> #include <conio.h> void main()  {  int sum=0,num; clrscr();  do  {  printf("enter a number\n"); scanf("%d",&num); sum=sum+num;  }  while(num!=0); printf("Sum=%d",sum); getch();  } | **Output:**  enter a number 2  5  4  1  0  Sum=12 |