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51. Program to display the contents of a file using command line argument

1. Program to calculate the factorial of a number

main()

{

int x,n;

printf("Enter a number :");

scanf("%d",&n);

x=fact(n);

printf("%d",x);

}

int fact(int n)

{

int f=1;

while(n>0)

{

f=f\*n;

n--;

}

return f;

}

2. Program to calculate the sum digits of a number

main()

{

int x,n;

printf("Enter a number :");

scanf("%d",&n);

x=sum\_digit(n);

printf("%d",x);

}

int sum\_digit(int n)

{

int s=0;

while(n>0)

{

s=s + n%10;

n=n/10;

}

return s;

}

3. Program to reverse a number

main()

{

int x,n;

printf("Enter a number :");

scanf("%d",&n);

x=reverse(n);

printf("%d",x);

}

int reverse(int n)

{

int s=0;

while(n>0)

{

s=s \*10 + n%10;

n=n/10;

}

return s;

}

4. Program to check the number is strong number or not.

main()

{

int x,n;

printf("Enter a number :");

scanf("%d",&n);

x=strong(n);

if(x==n)

printf("Strong");

else

printf("Not strong");

}

int strong(int n)

{

int s=0,r,f;

while(n>0)

{

r=n%10;

f=fact(r);

s=s+f;

n=n/10;

}

return s;

}

int fact(int n)

{

int f=1;

while(n>0)

{

f=f\*n;

n--;

}

return f;

}

5. Program to calculate the prime factors of a numbers

main()

{

int x,n;

printf("Enter a number :");

scanf("%d",&n);

prime\_factors(n);

}

int prime\_factors(int n)

{

int i=1,k;

while(i<=n)

{

if(n%i==0)

{

k=check\_prime(i);

if(k!=0)

printf("%d ",k);

}

i++;

}

}

int check\_prime(int n)

{

int i=1;

int c=0;

while(i<=n)

{

if(n%i==0)

c++;

i++;

}

if(c==2)

return n;

else

return 0;

}mmmim

6. Program to check given number is armstrong or not

main()

{

int n,x;

printf("Enter a number:");

scanf("%d",&n);

x=armstrong(n);

if(x==n)

printf("Arm strong");

else

printf("Not arm strong");

}

int armstrong(int num)

{

int sum=0,r;

while(num!=0)

{

r=num%10;

num=num/10;

sum=sum+(r\*r\*r);

}

return sum;

}

7. Program to check given number is palendrome or not

main()

{

int n,x;

printf("Enter a number:");

scanf("%d",&n);

x=palendrome(n);

if(x==n)

printf("Palendrome ");

else

printf("Not palendrome ");

}

int palendrome(int num)

{

int r=0;

while(num>0)

{

r=r\* 10 + num%10;

num=num/10;

}

return r;

}

8. Program to add between any two numbers using loop

main()

{

int x;

int a,b;

printf("Enter any two numbers :");

scanf("%d%d",&a,&b);

x=add(a,b);

printf("%d ",x);

}

int add(int a,int b)

{

while(a>0)

{

b++;

a--;

}

return b;

}

9. Program to calculate daily expenditure if monthely expenditure is given using loop.

main()

{

int x,n;

printf("Enter monthely expenditure :");

scanf("%d",&n);

x=daily\_exp(n);

printf("%d ",x);

}

int daily\_exp(int n)

{

int c=0;

while(n>0)

{

c++;

n=n-30;

}

return c;

}

10. Program to count number of bits are set to 1 in an integer.

main()

{

int x,n;

printf("Enter a number :");

scanf("%d",&n);

x=bit\_count(n);

printf("%d ",x);

}

int bit\_count(int n)

{

int c=0;

while(n>0)

{

c++;

n=n&n-1;

}

return c;

}

11. Program to calculate G.C.D of any two numbers

main()

{

int n1,n2,x;

printf("Enter two numbers:");

scanf("%d%d",&n1,&n2);

x=gcd(n1,n2);

printf("%d ",x);

}

int gcd(int n1,int n2)

{

while(n1!=n2)

{

if(n1>n2)

n1=n1-n2;

else

n2=n2-n1;

}

return n1;

}

12. Program to calculate L.C.M of two numbers.

main()

{

int n1,n2,x;

printf("Enter two numbers:");

scanf("%d%d",&n1,&n2);

x=lcm(n1,n2);

printf("%d ",x);

}

int lcm(int n1,int n2)

{

int x,y;

x=n1,y=n2;

while(n1!=n2)

{

if(n1>n2)

n1=n1-n2;

else

n2=n2-n1;

}

return x\*y/n1;

}

13. Program to calculate fibonacci series

main()

{

int n;

printf("Enter the number range:");

scanf("%d",&n);

fibo(n);

}

int fibo(int n)

{

int i=0,j=1,k=2,r,f;

printf("%d %d ", i,j);

while(k<n)

{

f=i+j;

i=j;

j=f;

printf(" %d",j);

k++;

}

}

14. Program to calculate string palindrome

main()

{

char x[100],y[100];

printf("Enter a string :");

scanf("%s",x);

strcpy(y,x);

check\_palindrome(x);

if(strcmp(x,y)==0)

printf("Palindrome");

else

printf("Not Palindrome");

}

int check\_palindrome(char \*x)

{

int len=strlen(x);

int i;

char temp;

for(i=0;i<len/2;i++)

{

temp=x[i];

x[i]=x[len-i-1];

x[len-i-1]=temp;

}

}

15. Program to check the number is Prime number or not

main()

{

int n,k;

printf("Enter a number:");

scanf("%d",&n);

k=check\_prime(n);

if(k==2)

printf("Prime");

else

printf("Not prime");

}

int check\_prime(int n)

{

int i=1,c=0;

while(i<=n)

{

if(n%i==0)

c++;

i++;

}

return c;

}

16. Program to find largest number in an array

main()

{

int a[]={15,67,25,90,40};

int k;

k=large\_number(a);

printf("%d ",k);

}

int large\_number(int a[5])

{

int i,big;

big=a[0];

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

{

if(big<a[i])

big=a[i];

}

return big;

}

17. Program to find Second largest number in an array

main()

{

int a[]={15,67,25,90,40};

int k;

k=large\_number(a);

printf("%d ",k);

}

int large\_number(int un[5])

{

int big1,big2;

int i;

big1 = un[0];

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

if ( big1 < un[i] )

big1 = un[i];

if ( big1!=un[0] )

big2=un[0];

else

big2=un[1];

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

if (big1!=un[i] && big2 < un[i] )

big2=un[i];

return big2;

}

18. Program to remove duplicate elements in an array

main()

{

int i,k;

int x[10]={5,7,2,8,9,3,3,6,7,20};

k=remove\_duplicate(x);

for(i=0;i<k;i++)

{

printf(" %d",x[i]);

}

}

int remove\_duplicate(int p[10])

{

int size=10,i,j,k;

for(i=0;i<size;i++)

{

for(j=0;j<size;j++)

{

if(i==j)

{

continue;

}

else

if(\*(p+i)==\*(p+j))

{

k=j;

size--;

while(k < size)

{

\*(p+k)=\*(p+k+1);

k++;

}

j=0;

}

}

}

return size;

}

19. Program to convert from decimal to binary

main()

{

int n;

printf("Enter a number :");

scanf("%d",&n);

decimal\_binary(n);

}

int decimal\_binary(int n)

{

int m,no=0,a=1,rem;

m=n;

while(n!=0)

{

rem=n%2;

no=no+rem\*a;

n=n/2;

a=a\*10;

}

printf("%d",no);

}

20. Program to convert binary to decimal

main()

{

int n;

printf("Enter data in binary format :");

scanf("%d",&n);

binary\_decimal(n);

}

int binary\_decimal(int n)

{

int j=1,rem,n1=0;

while(n!=0)

{

rem=n%10;

n1=n1+rem\*j;

j=j\*2;

n=n/10;

}

printf("%d",n1);

}

21. Program to check the number is perfect number or not.

main()

{

int n,x;

printf("Enter a number:");

scanf("%d",&n);

x=check\_perfect(n);

if(x==n)

printf("Perfect number :");

else

printf("Not a perfect number :");

}

int check\_perfect(int n)

{

int s=0,i=1;

while(i<n)

{

if(n%i==0)

s=s+i;

i++;

}

return s;

}

22.Program to find generic root of a number.

main()

{

int n,k;

printf("Enter a number");

scanf("%d",&n);

k=generic(n);

printf("%d",k);

}

int generic(int n)

{

int sum,r;

if(n<10)

return n;

while(n>10)

{

sum=0;

while(n!=0)

{

r=n%10;

n=n/10;

sum+=r;

}

if(sum>10)

n=sum;

else

break;

}

return sum;

}

23. Program to check a year is leap year or not.

main()

{

int year;

printf("Enter the year :\n");

scanf("%d",&year);

if((year % 400==0 )|| ((year % 4==0)&& (year %100!=0)))

printf("Leap Year ");

else

printf("Not leap year");

}

24. Program to revese a string

main()

{

char x[100];

printf("Enter a string :");

gets(x);

strrev(x);

printf("%s",x);

}

int strrev(char \*x)

{

int len=strlen(x);

int i;

char temp;

for(i=0;i<len/2;i++)

{

temp=x[i];

x[i]=x[len-i-1];

x[len-i-1]=temp;

}

}

25. Program to add a sub-string in a string

main()

{

char x[100],y[20];

int pos;

printf("Enter string :");

gets(x);

printf("Enter substring:");

scanf("%s",y);

printf("Enter position:");

scanf("%d",&pos);

add\_substring(x,y,pos);

}

int add\_substring(char \*x,char \*y,int pos)

{

char z[100];

int i=0,j=0,k;

memset(z,0,sizeof(z));

while(i<pos)

{

z[i]=\*x;

x++;

i++;

}

while(\*y!=0)

{

z[i]=\*y;

i++;

y++;

}

z[i]=' ';

i++;

while(\*x!=0)

{

z[i]=\*x;

i++;

x++;

}

z[i]=0;

printf("%s",z);

}

26. Program to traverse a string in reverse order

main()

{

char x[100];

printf("Enter a string :");

gets(x);

int len=strlen(x)-1;

while(len>=0)

{

printf("%c",x[len]);

len--;

}

}

27. Program to count number of words,vowels,digits and space present in string.

main()

{

int word=0,space=0,digit=0,vowels=0,i;

char x[100];

printf("Enter a string :");

gets(x);

for(i=0;i<strlen(x);i++)

{

if(x[i]=='a' || x[i]=='A' || x[i]=='e' || x[i]=='E' || x[i]=='i' || x[i]=='I'

|| x[i]=='o' || x[i]=='O' || x[i]=='u' || x[i]=='U')

vowels++;

if(x[i]>=48 && x[i]<=57)

digit++;

if(x[i]==32) //space

space++;

}

word=space+1;

printf("%d %d %d %d\n",word,space,digit,vowels);

}

28. Program to add between two matrix

main()

{

int a[3][3]={

1,2,1,

1,2,2,

3,2,1

};

int b[3][3]={

2,2,1,

1,1,1,

2,3,1

};

int c[3][3];

int i,j,k,sum=0;

for(i=0;i<3;i++)

{

for(j=0;j<3;j++)

{

c[i][j]=a[i][j]\*b[i][j];

}

}

for(i=0;i<3;i++)

{

for(j=0;j<3;j++)

{

printf("%d ",c[i][j]);

}

printf("\n");

}

}

29. Program for multiplication between two matrix

main()

{

int a[3][3]={

1,2,1,

1,2,2,

3,2,1

};

int b[3][3]={

2,2,1,

1,1,1,

2,3,1

};

int c[3][3];

int i,j,k,sum=0;

for(i=0;i<3;i++)

{

for(j=0;j<3;j++)

{

c[i][j]=0;

for(k=0;k<3;k++)

{

c[i][j]=c[i][j]+a[i][k]\*b[k][j];

}

}

}

for(i=0;i<3;i++)

{

for(j=0;j<3;j++)

{

printf("%d ",c[i][j]);

}

printf("\n");

}

}

30. Program to transpose a matrix

main()

{

int a[3][5]={

1,4,5,6,7,

2,3,4,1,5,

9,5,3,1,4

};

int b[5][3];

int i,j;

for(i=0;i<3;i++)

{

for(j=0;j<5;j++)

{

b[j][i]=a[i][j];

}

}

for(i=0;i<5;i++)

{

for(j=0;j<3;j++)

{

printf("%d",b[i][j]);

}

printf("\n");

}

}

32. Program to calculate Amicable pairs from 1 to 1000

#include "stdio.h"

main()

{

int n,k;

int i=1,s1=0,s2=0;

for(k=1;k<=1000;k++)

{

n=k;

while(i<n)

{

if(n%i==0)

s1=s1+i;

i++;

}

i=1;

if(s1==n)

continue;

while(i<s1)

{

if(s1%i==0)

s2=s2+i;

i++;

}

if(n==s2)

printf("%d \n",n);

s1=0;

s2=0;

}

}

33. Program to calculate Sum of the series 1+2+3+---------+n

main()

{

int r;

printf("Enter the number range: ");

scanf("%d",&r);

printf("%d",(r\*(r+1))/2);

}

34. Program to find area triangle

#include "math.h"

int main()

{

double a,b,c,s;

double area;

printf("Enter the size of triangle :");

scanf("%lf%lf%lf",&a,&b,&c);

s = (a + b + c)/2;

area =sqrt (s\*(s-a)\*(s-b)\*(s-c));

printf("%lf",area);

}

35. Program for Bubble sort

main()

{

int a[5]={4,9,40,2,25};

int i;

bubble\_sort(a);

for(i=0;i<5;i++)

printf("%d ",a[i]);

}

int bubble\_sort(int a[5])

{

int i,j,temp;

for(i=0;i<5;i++)

{

for(j=0;j<5-i;j++)

{

if(a[j]>a[j+1])

{

temp=a[j];

a[j]=a[j+1];

a[j+1]=temp;

}

}

}

}

36. Program for Selection sort

main()

{

int a[5]={4,9,40,2,25};

int i;

selection\_sort(a);

for(i=0;i<5;i++)

printf("%d ",a[i]);

}

int selection\_sort(int a[5])

{

int i,j,s;

for(i=0;i<5;i++)

{

s=i;

for(j=i+1;j<5;j++)

{

if(a[s]>a[j])

s=j;

}

temp=x[s];

x[s]=x[i];

x[i]=temp;

}

}

37. Program for Insertion sort

main()

{

int a[5]={4,9,40,2,25};

int i;

insert\_sort(a);

for(i=0;i<5;i++)

printf("%d ",a[i]);

}

int insert\_sort(int a[5])

{

int i,j,k,temp;

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

{

for(j=0;j<i;j++)

{

if(a[i]<a[j])

{

temp=a[i];

for(k=i;k>j;k--)

{

a[k]=a[k-1];

}

a[j]=temp;

}

}

}

}

38. Program for quick sort

main()

{

int x[5]={5,9,2,20,6};

int i;

quick\_sort(x,0,4);

for(i=0;i<5;i++)

printf("%d ",x[i]);

}

quick\_sort(int x[10],int first,int last)

{

int pivot,j,temp,i;

if(first<last)

{

pivot=first;

i=first;

j=last;

while(i<j)

{

while(x[i]<=x[pivot]&&i<last)

i++;

while(x[j]>x[pivot])

j--;

if(i<j)

{

temp=x[i];

x[i]=x[j];

x[j]=temp;

}

}

temp=x[pivot];

x[pivot]=x[j];

x[j]=temp;

quick\_sort(x,first,j-1);

quick\_sort(x,j+1,last);

}

}

42. Binary Search using an Array

void main()

{

int a[10],i,n,m,c=0,l,u,mid;

printf("Enter the size of an array->");

scanf("%d",&n);

printf("\nEnter the elements of the array->");

for(i=0;i<n;i++)

{

scanf("%d",&a[i]);

}

printf("\nThe elements of an array are->");

for(i=0;i<n;i++)

{

printf(" %d",a[i]);

}

printf("\nEnter the number to be search->");

scanf("%d",&m);

l=0,u=n-1;

while(l<=u)

{

mid=(l+u)/2;

if(m==a[mid])

{

c=1;

break;

}

else

if(m<a[mid])

{

u=mid-1;

}

else

l=mid+1;

}

if(c==0)

printf("\nThe number is not in the list");

else

printf("\nThe number is found");

}