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ROLL NUMBER-48(G-2)

ASSIGNMENT 1 – COMPUTER LAB

***NO QUESTION 1.Input an array of n elements and print the sum of digits of each elements in an array***

#include<stdio.h>

int sumofdigits(int);

int main()

{

int a[20],n,i,res;

printf("enter no of elements");

scanf("%d",&n);

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

{

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

}

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

{

res=sumofdigits(a[i]);

}

printf("sum=%d",res);

return 0;

}

int sumofdigits(int n)

{

int s=0;

while(n!=0)

{

s=s+n%10;

n=n/10;

}

return s;

}

***NO QUESTION 2.WAP TO FIND SUM AND AVG OF 30 STUDENTS IN ONE SUBJEST .***

#include<stdio.h>

int main()

{

int a[30],avg,sum=0,i;

printf("enter marks");

for(i=0;i<30;i++)

{

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

}

for(i=0;i<30;i++)

{

sum=sum+a[i];

}

avg=sum/30;

printf("sum & ang =%d & %d",sum,avg);

return 0;

}

***NO QUESTION 3.ENTER 5x5 MATRIX AND FIND THE BIGGEST NUMBER.***

#include<stdio.h>

int main()

{

int a[5][5],i,j,big;

printf("enter a matrix 5x5");

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

{

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

{

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

}

}

big=a[0][0];

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

{

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

{

if(a[i][j]>big)

big=a[i][j];

}

}

printf("largest no =%d",big);

return 0;

}

***NO QUESTION 4,FIND TRANSPOSE OF MATRIX ENTERED BY USER***

#include<stdio.h>

int main()

{

int a[20][20],b[20][20],i,j,m,n;

printf("enter no of rows");

scanf("%d",&m);

printf("enter no of columns");

scanf("%d",&n);

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

{

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

{

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

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

}

}

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

{

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

{

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

}

printf("\n");

}

return 0;

}

***NO QUESTION 5.FIND THE NO OF EVEN AND ODD NO, IN A MATRIX ENTERED BY USER.***

#include<stdio.h>

int main()

{

int a[20][20],i,j,m,n,even=0,odd=0;

printf("enter no of rows");

scanf("%d",&m);

printf("enter no of columns");

scanf("%d",&n);

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

{

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

{

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

}

}

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

{

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

{

if(a[i][j]%2==0)

{

even++;

}

else

{

odd++;

}

}

}

printf("even no=%d,odd no.=%d",even,odd);

return 0;

}

***NO QUESTION 6.FIND THE SUM OF EACH ROW OF MATRIX ENTERED BY USER,***

#include<stdio.h>

int main()

{

int a[20][20],i,j,m,n,sum;

printf("enter no of rows");

scanf("%d",&m);

printf("enter no of columns");

scanf("%d",&n);

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

{

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

{

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

}

}

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

{

sum=0;

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

{

sum=sum+a[i][j];

}

printf("sum of row %d = %d",i+1,sum);

}

return 0;

}

***NO QUESTION 7.FIND THE SUM OF EACH COLUMN OF A MATRIX ENTERED BY USER.***

#include<stdio.h>

int main()

{

int a[20][20],i,j,m,n,sum;

printf("enter no of rows");

scanf("%d",&m);

printf("enter no of columns");

scanf("%d",&n);

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

{

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

{

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

}

}

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

{

sum=0;

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

{

sum=sum+a[i][j];

}

printf("sum of column %d = %d",j+1,sum);

}

return 0;

}

***NO QUESTION 8. COUNT HOW MANY NO. ARE (SINGLE & MULTIPLE) DIGIT IN A MATRIX***

#include<stdio.h>

int main()

{

int a[20][20],i,j,m,n,single=0,multiple=0;

printf("enter no of rows");

scanf("%d",&m);

printf("enter no of columns");

scanf("%d",&n);

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

{

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

{

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

}

}

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

{

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

{

if(a[i][j]/10==0)

{

single++;

}

else

{

multiple++;

}

}

Printf(“%d%d”,single,multiple);

}

return 0;

}

***NO QUESTION 9.FIND ADDITION OF TWO MATRIX***

#include<stdio.h>

int main()

{

int a[20][20],b[20][20],c[20][20],i,j,m1,n1,m2,n2;

printf("enter no of rows both matrix :");

scanf("%d%d",&m1,&m2);

printf("enter no of columns both matrix :");

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

if(m1==m2&&n1==n2)

{

printf("enter matrix 1 :");

for(i=0;i<m1;i++)

{

for(j=0;j<n1;j++)

{

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

}

}

printf("enter matrix 2 :");

for(i=0;i<m2;i++)

{

for(j=0;j<n2;j++)

{

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

}

}

for(i=0;i<m1;i++)

{

for(j=0;j<n1;j++)

{

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

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

}

printf("\n");

}

}

else

{

printf("add not possible");

}

return 0;

}

***NO QUESTION 10.FIND SUBTRACTION OF TWO MATRIX***

#include<stdio.h>

int main()

{

int a[20][20],b[20][20],c[20][20],i,j,m1,n1,m2,n2;

printf("enter no of rows both matrix :");

scanf("%d%d",&m1,&m2);

printf("enter no of columns both matrix :");

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

if(m1==m2&&n1==n2)

{

printf("enter matrix 1 :");

for(i=0;i<m1;i++)

{

for(j=0;j<n1;j++)

{

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

}

}

printf("enter matrix 2 :");

for(i=0;i<m2;i++)

{

for(j=0;j<n2;j++)

{

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

}

}

for(i=0;i<m1;i++)

{

for(j=0;j<n1;j++)

{

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

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

}

printf("\n");

}

}

else

{

printf("sub not possible");

}

return 0;

}

***NO QUESTION 11.FIND THE SQUARE OF A GIVEN NO. USING FUNCTION***

#include<stdio.h>

float square(float);

int main()

{

float a,b;

printf("entar any number");

scanf("%f",&a);

b=square(a);

printf("square of number=%f\n",b);

return 0;

}

float square (float x)

{

float y;

y=x\*x;

return(y);

}

***NO QUESTION 12.FIND FACTORIAL USING FUNCTION***

#include<stdio.h>

int fact (int);

int main()

{

int num,factorial;

printf("enter a number");

scanf("%d",&num);

factorial=fact(num);

printf("factorial of %d=%d",num,factorial);

return 0;

}

int fact (int num)

{

int i,factorial=1;

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

{

factorial=factorial\*i;

}

return (factorial);

}

***NO QUESTION 13. WRITE A FUNCTION POWER(A,B) TO FIND THE VALUE OF A RAIS TO THE POWER B.***

#include<stdio.h>

float power(float,int);

int main()

{

float x,pow;

int y;

printf("enter 2 no.");

scanf("%f%d",&x,&y);

pow=power(x,y);

printf("%f to the power %d=%f\n",x,y,pow);

return 0;

}

float power(float x,int y)

{

int i;

float p=1;

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

{

p=p\*x;

}

return (p);

}

***NO QUESTION 14.WAP TO FIND GREATEST COMMON DIVISOR/FACTOR OF 2 NO. USING RECURSION***

#include<stdio.h>

int gcd(int,int);

int main()

{

int x,y,res;

printf("enter the value of divisor and divident");

scanf("%d%d",&x,&y);

res=gcd(x,y);

printf("%d",res);

return 0;

}

int gcd(int div,int dd)

{

int rem;

rem=dd%div;

if(rem==0)

{

return (div);

}

else

{

return gcd(rem,div);

}

}

***NO QUESTION 15.TOWER OF HANOI USING FUNCTION***

#include <stdio.h>

void towerOfHanoi(int numDisks, char source, char destination, char auxiliary)

int main()

{

int numDisks;

printf("Enter the number of disks: ");

scanf("%d", &numDisks);

towerOfHanoi(numDisks, 'A', 'C', 'B');

return 0;

}

void towerOfHanoi(int numDisks, char source, char destination, char auxiliary)

{

if (numDisks == 1)

{

printf("Move disk 1 from %c to %c\n", source, destination);

return;

}

towerOfHanoi(numDisks - 1, source, auxiliary, destination);

printf("Move disk %d from %c to %c\n", numDisks, source, destination);

towerOfHanoi(numDisks - 1, auxiliary, destination, source);

}