COMPUTER ASSIGNMENT

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S2 CSE

Roll no. 23

Program 1

```
#include<stdio.h>
#include<math.h>
int fibonacci(int);
void main()
{
	int m,n,i,j,a[50][50],flag=0;
	printf("Order of the matrix (m x n) : ");
	scanf("%d%d",&m,&n);
	printf("Enter the elements:");
	for(i=0;i<m;i++)
		for(j=0;j<n;j++)
		scanf("%d",&a[i][j]);
	printf("Fibonacci numbers in the matrix");
	for(i=0;i<m;i++)
		for(j=0;j<n;j++)
		if(fibonacci(a[i][j]))
		{
			printf("\n %d at [%d][%d]\n",a[i][j],i,j);
			flag=1;
		}
	if(flag==0)
		printf("--none--");
}
int fibonacci(int n)
{
```

```
        int a,b,e,f;
        a=(5*n*n)+4;
        b=(5*n*n)-4;
        e=sqrt(a);
        f=sqrt(b);
        if(e*e==a||f*f==b)
                return 1;
        return 0;
}
```

Output 1

```
Order of the matrix (m x n) : 3 3
Enter the elements:1 2 3 4 5 6 7 8 9
Fibonacci numbers in the matrix
 1 at [0][0]

 2 at [0][1]

 3 at [0][2]

 5 at [1][1]

 8 at [2][1]
```

Program 2

```
#include<stdio.h>
void main()
{
        int rank=1,i,j,max,total[50],a,t,n;
        struct student
        {       int rno;
```

```
        char name[20];
        int m1,m2,m3,m4;
}s[150],temp;
printf("How many students:");
scanf("%d",&n);
for(i=0;i<n;i++)
{
        printf("STUDENT %d",i+1);

        printf("\nName \t:");
        scanf(" %[^\n]",s[i].name);
        printf("\nRoll No. \t:");
        scanf(" %d",&s[i].rno);
        printf("\nSubject 1 \t:");
        scanf(" %d",&s[i].m1);
        printf("\nSubject 2 \t:");
        scanf(" %d",&s[i].m2);
        printf("\nSubject 3 \t:");
        scanf(" %d",&s[i].m3);
        printf("\nSubject 4 \t:");
        scanf(" %d",&s[i].m4);

        total[i]=s[i].m1+s[i].m2+s[i].m3+s[i].m4;}

printf("\nMax. marks : ");
        scanf("%d",&max);
a=0.4*max;
```

```
for(i=0;i<n-1;i++)
        for(j=0;j<n-i-1;j++)
        {
        if(total[j]<total[j+1])
        {
                t=total[j];
                total[j]=total[j+1];
                total[j+1]=t;

                temp=s[j];
                s[j]=s[j+1];
                s[j+1]=temp;}}}
```

Output 2

```
How many students:3
STUDENT 1
Name     :Jacob

Roll No.     :24

Subject 1     :98

Subject 2     :87

Subject 3     :76

Subject 4     :65
STUDENT 2
Name     :Zeref

Roll No.     :304

Subject 1     :100

Subject 2     :100
```

Subject 3 :100

Subject 4 :100
STUDENT 3
Name :George

Roll No. :123

Subject 1 :45

Subject 2 :78

Subject 3 :76

Subject 4 :90

Max. marks : 100
1 304 Zeref 4001
24 Jacob 3262
123 George 289

Program 3

```
#include<stdio.h>
#define MAX 100

void bubblesort(int a[][MAX], int m, int n,int k) {
        int i, j, temp;
        for (i = 0; i < n-1; i++) {
        for (j = 0; j < n-i-1; j++) {
                if (a[k][j] > a[k][j+1]) {
                temp = a[k][j];
                a[k][j] = a[k][j+1];
                a[k][j+1] = temp;
                }
        }
        }
        }

void printMatrix(int a[][MAX], int m, int n) {
        int i, j;
        for (i = 0; i < m; i++) {
        for (j = 0; j < n; j++) {
        printf("%d ", a[i][j]);
        }
```

```
            printf("\n");
            }
}
void readMatrix(int a[][MAX], int m, int n) {
            int i, j;
printf("Input your elements :");
            for (i = 0; i < m; i++)
            for (j = 0; j < n; j++)
            scanf("%d", &a[i][j]);
}
void main() {
            int a[MAX][MAX], m, n, k, i;
            printf("Enter the number of rows and columns: ");
            scanf(" %d %d", &m, &n);
            readMatrix(a, m, n);
  for(k = 0; k < m; k++) {

            bubblesort(a, m, n,k);
}
            printf("Sorted Matrix: \n");
            printMatrix(a, m, n);
}
```

Output 3

```
Enter the number of rows and columns: 3 3
Input your elements :12 3 434 4 45 323 32 4 454
Sorted Matrix:
3 12 434
4 45 323
4 32 454
```