



Department of Computer Science and Engineering Data Science

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Class / Branch: SE Data Science

Subject: Data Structure

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Assignment No. 1

Question 1:- Write a Program to print any 10 numbers using an array

Program

```
1  #include<stdio.h>
2  #include<conio.h>
3  void main()
4  {
5      int a[20];
6      int i;
7      printf("Enter any 10 numbers in an array:\n");
8      for(i=0;i<10;i++)
9      {
10         scanf("%d",&a[i]);
11     }
12
13     printf("The elements entered are: ");
14     for(i=0;i<10;i++)
15     {
16         printf("%d\t",a[i]);
17     }
18 }
19
20
```



Output:-

```
Enter any 10 numbers in an array:
2
7
1
9
23
56
12
57
3
9
The elements entered are: 2    7    1    9    23    56    12    57    3    9
PS C:\Users\patil\Documents\C prog> 
```

Question 2:- Write a Program to find min and max from array

Program:

```
1  #include<stdio.h>
2  #include<conio.h>
3  void main()
4  {
5      int a[20],max,min;
6      int i;
7      printf("Enter any elements:\n");
8      for(i=0;i<7;i++)
9      {
10         scanf("%d",&a[i]);
11     }
12
13     max=a[0];
14     for(i=1;i<7;i++)
15     {
16         if(max<a[i])
17         {
18             max=a[i];
19         }
20     }
21
22     min=a[0];
23     for(i=1;i<7;i++)
24     {
25         if(min>a[i])
26         {
27             min=a[i];
28         }
29     }
30     printf("Maximum: %d\nMinimum: %d",max,min);
31 }
```

**Output:**

```
Enter any elements:
7
1
45
23
75
32
65
Maximum: 75
Minimum: 1
PS C:\Users\patil\Documents\C prog> █
```

Question 3: Write a Program to swap 2 numbers using function call by value and call by reference.

Program:

```
1  #include<stdio.h>
2  void swap(int *,int *);
3  int main()
4  {
5
6      int n1,n2;
7      printf("Enter 1st number : ");
8      scanf("%d",&n1);
9      printf("Enter 2nd number : ");
10     scanf("%d",&n2);
11
12     printf("Before swapping: n1 = %d, n2 = %d ",n1,n2);
13     swap(&n1,&n2);
14
15     printf("\nAfter swapping: n1 = %d, n2 = %d \n\n",n1,n2);
16     return 0;
17 }
18
19 void swap(int *p,int *q)
20 {
21     int tmp;
22     tmp = *p;
23     *p=*q;
24     *q=tmp;
25 }
```



Output:

```
Enter 1st number : 8
Enter 2nd number : 1
Before swapping: n1 = 8, n2 = 1
After swapping: n1 = 1, n2 = 8
```

Question 4: Write a program for accepting the information of employee work in a company and calculate its gross salary using formula $\text{Gross} = \text{basic salary} + \text{DA} + \text{HRA}$.

Program:

```
1  #include<stdio.h>
2  struct employee
3  {
4      int id;
5      char name[10];
6      int basic;
7      int da;
8      int hra;
9  }s;
10 void main()
11 {
12     int gross_sal;
13     printf("\nEnter employee id: ");
14     scanf("%d",&s.id);
15     printf("\nEnter employee name: ");
16     scanf("%s",&s.name);
17     printf("\nEnter basic salary: ");
18     scanf("%d",&s.basic);
19     printf("\nEnter DA: ");
20     scanf("%d",&s.da);
21     printf("\nEnter HRA: ");
22     scanf("%d",&s.hra);
23
24     gross_sal=s.basic+s.da+s.hra;
25     printf("The Employee %s id %d has gross salary %d",s.name,s.id,gross_sal);
26 }
```



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Output:

```
Enter employee id: 10
Enter employee name: John
Enter basic salary: 15000
Enter DA: 1235
Enter HRA: 1536
The Employee John id 10 has gross salary 17771
PS C:\Users\patil\Documents\C prog> 
```