

DAY-5 PROGRAMES

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Questions
CHQ8.

Find the M^{th} maximum number and N^{th} minimum number in an array and then find the sum of it and

Sample Input:
Array of elements = {14, 16, 87, 36, 25, 89, 34}
M = 1
N = 3

Sample Output:
1st Maximum Number = 89
3rd Minimum Number = 25
Sum = 114
Difference = 64

Test Cases
1. {16, 16, 16, 16, 16}, M = 0, N = 1
2. {0, 0, 0, 0}, M = 1, N = 2
3. {-12, -78, -35, -42, -85}, M = 3, N = 3
4. {15, 19, 34, 56, 12}, M = 6, N = 3
5. {85, 45, 65, 75, 95}, M = 5, N = 7

CHQ19
CHQ2
CHQ20
CHQ3
CHQ4
CHQ5
CHQ6
CHQ7
CHQ8
CHQ9

C Run Save Logout

```
1. #include<stdio.h>
2. void sortarray(int arr[30],int n){
3.     for(int i =0; i<n-1;i++){
4.         for(int j = 0; j<n-i-1;j++){
5.             if(arr[j] > arr[j+1]){
6.                 int temp = arr[j];
7.                 arr[j] = arr[j+1];
8.                 arr[j+1] = temp;
9.             }
10.        }
11.    }
12. }
13. void findmthmaxnthmin(int arr[],int *n,int *m,int *mthmax,int *nthmin,int *sum,int *diff)
14. {
15.     sortarray(arr, n);
```

Your Input Goes Here....!!!

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Questions
CHQ1.

A Pythagorean Triplet is a set of three integers m, n and o such that $m^2+n^2=o^2$.
Given a limit A, generate all Pythagorean triples with value smaller that given limit A?

Sample Input:
A=12

Sample Output:
(3,4,5), (6,8,10)

Test Cases
1. A= 10
2. A= -10
3. A= #
4. A=1.5
5. A=25

CHQ1
CHQ10
CHQ11
CHQ12
CHQ13
CHQ14
CHQ15
CHQ16
CHQ17
CHQ18

```
1. #include <stdio.h>
2. #include <conio.h>
3. #include <math.h>
4. int main()
5. {
6.     int a,b,c;
7.     printf("Enter a number :");
8.     scanf("%d",&a);
9.     printf("Enter a number");
10.    scanf("%d",&b);
11.    if (c=sqrt(a*a+b*b))
12.    {
13.        printf("The given number is pythagoren triple");
14.    }
15.    else
16.        printf("The given number is not a pythagorean triple");
17.    return 0;
18. }
```

3
4

Enter a number :Enter a numberThe given
number is pythagoren triple

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Questions
CHQ11.

Write a C program for Inserting an element to the array at the specified index.

Sample Input:
Enter the number of Elements: 5

Enter the Elements:
47 34 21 89 12

Element to be inserted 100
At position: 4

Output:
12 21 24 100 47 89

Test Cases

CHQ11

CHQ12

CHQ13

CHQ14

CHQ15

CHQ16

CHQ17

CHQ18

C

Run

Save

Logout

```
1. #include<stdio.h>
2. int main()
3. {
4.     int a[10],i,n,ele,pos;
5.     printf("Enter no.of elements:");
6.     scanf("%d",&n);
7.     printf("Elements in array:\n");
8.     for(i=1;i<=n;i++)
9.     {
10.        scanf("%d",&a[i]);
11.        printf("Elements are:\n");
12.        for(i=1;i<=n;i++)
13.        {
14.            printf("%d\t",a[i]);
15.        }
16.    }
17.    printf("Enter the position:\n");
18.    scanf("%d",&pos);
19.    printf("Enter element u want to enter:\n");
20.    scanf("%d",&ele);
21.    for(i=1;i<=n;i++)
22.    {
23.        if(i>pos)
24.            a[i]=a[i-1];
25.        else
26.        {
27.            if(i==pos)
28.                a[i]=a[i];
29.        }
30.    }
31.    printf("Array after inserting:\n");
32.    for(i=1;i<=n;i++)
33.    {
34.        scanf("%d\t",a[i]);
35.    }
36. }
```

5

47

34

21

89

12

Runtime Error

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Questions
CHQ12.

Write a C program to take two arrays as input and try to merge or concatenate two arrays and s

Sample Input:
Enter number of Element in array A: 7
Enter elements: 1 2 3 4 5 6 7
Enter number of Element in array B: 5
11 22 33 44 55

Output:
Merged in array C
1 2 3 4 5 6 7 11 22 33 44 55

Test Cases

CHQ12

CHQ13

CHQ14

CHQ15

CHQ16

CHQ17

CHQ18

C

Run

Save

Logout

```
1. #include<stdio.h>
2. #include<conio.h>
3. int main()
4. {
5.     int arr1[50],arr2[50],size1,size2,i,k,merge[100];
6.     printf("enter array 1 size:");
7.     scanf("%d",&size1);
8.     printf("enter array 1 elements:");
9.     for(i=0; i<size1 ;i++)
10.    {
11.        scanf("%d",&arr1[i]);
12.        merge[i]=arr1[i];
13.    }
14.    k=i;
15.    printf("\n enter the array 2 size:\n");
16.    scanf("%d",&size2);
17.    printf("\n enter array 2 elements:\n");
18.    for(i=0; i<size2 ;i++)
19.    {
20.        scanf("%d",&arr2[i]);
21.        merge[k]=arr2[i];
22.        k++;
23.    }
24.    printf("\n the new array after merging is:\n");
25.    for(i=0; i<k ;i++)
26.    {
27.        printf("%d",merge[i]);
28.        getch();
29.    }
30.    return 0;
31. }
```

Your Input Goes Here...!!!

Runtime Error

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Test Data :

Input 5 values

25
11
35
65
20

Expected Output :

Minimum value is: 11
Maximum value is: 65

CHQ12
CHQ13
CHQ14
CHQ15
CHQ16
CHQ17
CHQ18

C Run Save Logout

```
1. #include<stdio.h>
2. void findminmax(int arr[], int size, int*min,int*max)
3. {
4.     *min=arr[0];
5.     *max=arr[0];
6.     for (int i = 1; i<size; i++){
7.         if(arr[i]<*min)
8.             {*min = arr[i];}
9.         else if (arr[i] > *max)
10.            {
11.                *max = arr[i];
12.            }
13.     }
14. }
15.
16. int main(){
17.     int arr[] = { 25,11,35,65,20};
18.     int size = sizeof(arr) / sizeof(arr[0]);
19.     int min,max;
20.     findminmax(arr,size,&min,&max);
21.     printf("min valueis :%d\n",min);
22.     printf("max value is : %d\n",max);
23.     return 0;
24. }
```

Your Input Goes Here....!!!

min valueis :11
max value is : 65

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Questions

CHQ16:

Write a program in C to find the sum of the series $1/1+2/2+3/3+4/4+5/5$ using the function.

Expected Output :

The sum of the series is : 34

Test Cases

CHQ15
CHQ16
CHQ17
CHQ18
CHQ19
CHQ20
CHQ21
CHQ2
CHQ3
CHQ4
CHQ5

C Run Save Logout

```
1. #include<stdio.h>
2. int fact(int);
3. void main()
4. {
5.     int sum;
6.     sum=fact(1)/1+fact(2)/2+fact(3)/3+fact(4)/4+fact(5)/5;
7.     printf("\n\n Function: find the sum of 1/1+2/2+3/3+4/4+5/5:\n");
8.     printf("\n");
9.     printf(" the sum of the series is:%d\n\n",sum);
10. }
11. int fact(int n)
12. {
13.     int num=0,f=1;
14.     while(num<n-1)
15.     {
16.         f=f*n;
17.         num++;
18.     }
19.     return f;
20. }
```

Your Input Goes Here....!!!

Function: find the sum of 1/1+2/2+3/3+4/4+5/5:
the sum of the series is:34

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Bubble sort is a straightforward sorting algorithm that checks and swaps elements if they are not in the intended order. It compares two adjacent elements to find which one is greater or lesser and switches them based on the given condition until the final place of the element is found. Write a Program to sort the given numbers in an array using bubble sort.

Sample Input:
Enter the number of Elements: 5
Enter the Elements:
-2 45 0 11 -9
Output:
-9 -2 0 11 45

Test Cases

CHQ19
CHQ2
CHQ20
CHQ3
CHQ4
CHQ5
CHQ6
CHQ7
CHQ8
CHQ9

C

Run

Save

Logout

```
1. #include<stdio.h>
2. void swap(int* xp, int* yp)
3. {
4.     int temp = *xp;
5.     *xp = *yp;
6.     *yp = temp;
7. }
8. void bubblesort(int arr[], int n)
9. {
10.    int i, j;
11.    for(i = 0; i < n - 1; i++)
12.        for(j = 0; j < n - i - 1; j++)
13.            if (arr[j] > arr[j + 1])
14.                swap(&arr[j], &arr[j + 1]);
15. }
16. void printarray(int arr[], int size)
17. {
18.    int i;
19.    for (i = 0; i < size; i++)
20.        printf("%d ", arr[i]);
21.    printf("\n");
22. }
23. int main()
24. {
25.    int arr[] = {-2,45,0,11,-9};
26.    int n = sizeof(arr) / sizeof(arr[0]);
27.    bubblesort(arr, n);
28.    printf("sorted array: \n");
29.    printarray(arr, n);
30.    return 0;
31. }
```

-2
45
0
11
-9

sorted array:
-9 -2 0 11 45

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Questions
CHQ2

Ask the user to enter any positive integer. Compile and Execute the C program to check whether the number is Strong number or not.

Sample Input:
Enter the number to check for strong number: 145

Sample Output:
Factorial of 5 is =120
Factorial of 4 is =24
Factorial of 1 is =1
Sum of the factorial of the a given number 145 is =145
145 is the strong number.

Test Cases

1. 153
2. 28
3. 40585
4. 160
5. 59.5

C

Run

Save

Logout

```
1. #include<stdio.h>
2. int main()
3. {
4.     int i, originalnum, num, lastdigit, sum;
5.     long fact;
6.     printf("enter any number to check strong number:");
7.     scanf("%d", &num);
8.     originalnum=num;
9.     sum=0;
10.    while(num>0)
11.    {
12.        lastdigit=num%10;
13.        fact=1;
14.        for(i=1; i<=lastdigit;i++)
15.        {
16.            fact=fact*i;
17.        }
18.        sum=sum+fact;
19.        num=num/10;
20.    }
21.    if(sum==originalnum)
22.    {
23.        printf("%d is strong number",originalnum);
24.    }
25.    else
26.    {
27.        printf("%d is not strong number",originalnum);
28.    }
29.    return 0;
30. }
```

145

enter any number to check strong number:145 is strong number

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Questions
CHQ5.

Write a program in C to check Armstrong and perfect numbers using the function.

Test Data :
Input any number: 371
Expected Output :
The 371 is an Armstrong number.
The 371 is not a Perfect number.

Test Cases

CHQ18
CHQ19
CHQ20
CHQ2
CHQ3
CHQ4
CHQ5
CHQ6
CHQ7

C Run Save Logout

```
1. #include<stdio.h>
2. int isarmstrong(int n){
3.     int sum=0,temp=n,digit;
4.     while(temp!=0){
5.         digit=temp%10;
6.         sum+=(digit*digit*digit);
7.         temp/=10;
8.     }
9.     return sum==n;
10. }
11. int isperfect(int n){
12.     int sum=0,i;
13.     for(i=1;i<=n/2;i++)
14.         if(n%i==0){
15.             sum+=i;
16.         }
17.     return sum==n;
18. }
19. int main(){
20.     int n;
21.     printf("Enter a number:");
22.     scanf("%d",&n);
23.     if(isarmstrong(n)){
24.         printf("\n%d is armstrong number",n);
25.     }else{
26.         printf("\n%d is not armstrong number",n);
27.     }
28.     if(isperfect(n)){
29.         printf("\n%d is perfect number",n);
30.     }
31.     else{
32.         printf("\n%d is not perfect number",n);
33.     }
34.     return 0;
}
```

371

Enter a number:
371 is armstrong number
371 is not perfect number

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Questions
CHQ3.

Write a program in C to check whether two given strings are an anagram.

Test Data :
Input the first String : spare
Input the second String : pears

Expected Output :
spare and pears are Anagram.

Test Cases

CHQ17
CHQ18
CHQ19
CHQ2
CHQ20
CHQ3
CHQ4
CHQ5
CHQ6
CHQ7

C Run Save Logout

```
1. #include<stdio.h>
2. int main()
3. {
4.     char str1[100],str2[100];
5.     printf("Input the first string:");
6.     gets(str1);
7.     printf("Input the second string:");
8.     gets(str2);
9.     if(checkanagram(str1,str2)==1)
10.     {
11.         printf("%s and %s are anagram.\n\n",str1,str2);
12.     }
13.     else
14.     {
15.         printf("%s and %s are not anagram.\n\n",str1,str2);
16.     }
17.     return 0;
18. }
19. int checkanagram(char *str1,char *str2)
20. {
21.     int i,j;
22.     for(i=0;str1[i]!='\0';i++)
23.         for(j=0;str2[j]!='\0';j++)
24.             if(str1[i]==str2[j])
25.                 continue;
26.     if(i==j)
27.         return 1;
28.     return 0;
29. }
```

Your Input Goes Here....!!!

<pre>ExecutionFolder/192224094.c: In
function 'checkanagram':

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