

CSA02 C Programming Day 4 Practice

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Questions
CMQ9.
Write a program to find the sum and average of the elements in an array
Sample Input;
Array of elements = {16, 18, 27, 16, 23, 21, 19}
Sample Output:
Sum = 140
Average = 20

Test Cases

100/100
100/100
100/100
100/100
100/100
100/100
100/100
100/100

Run Save Logout

```
1. #include<stdio.h>
2. int main()
3. {
4.     int a[10],n,i;
5.     float avg,sum=0;
6.     printf("enter the number of elements: \n");
7.     scanf("%d",&n);
8.     printf("enter array of elements: \n");
9.     for(i=0;i<n;i++)
10.    {
11.        scanf("%d",&a[i]);
12.    }
13.    for(i=0;i<n;i++)
14.    {
15.        sum+=a[i];
16.    }
17.    avg=sum/n;
18.    printf("sum of elements: %f",sum);
19.    printf("average of elements: %f",avg);
20.    return 0;
21. }
```

12.23,45

100/100
100/100
100/100
100/100
100/100
100/100
100/100
100/100

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Questions
CMQ8.
Write a c program to display the details of student(Name , Age) by passing structures to a function.
Sample Input :
Enter No.Students: 1
Enter student 1 Name, Age :AAA, 25
Sample Output:
Student 1 details:
Name: AAA
Age : 25

Test Cases

No.Student :4 (Any details of student)
No.Student: 5
No.Student: 1(62, 28)
No.Student: A
No.Student: 1(xxx, 28.2)

100/100
100/100
100/100
100/100
100/100
100/100
100/100
100/100

Run Save Logout

```
1. #include<stdio.h>
2. int main()
3. {
4.     int numStudents,totalUsers,numStaff,numNonTeachingStaff,numStudentUsers;
5.     printf("enter the number of student users: \n");
6.     scanf("%d",&numStudents);
7.     printf("enter the total number of users: \n");
8.     scanf("%d",&totalUsers);
9.     printf("enter the number of staff users: \n");
10.    scanf("%d",&numStaff);
11.    printf("enter the number of non teaching staff users: \n");
12.    scanf("%d",&numNonTeachingStaff);
13.    numStudentUsers=numStudents*(totalUsers-numStaff-numNonTeachingStaff);
14.    printf("number of student users in the college is:%d\n",numStudentUsers);
15.    return 0;
16. }
```

10
50
16
12

100/100
100/100
100/100
100/100
100/100
100/100
100/100
100/100

Questions

CMQ7.

Write a C program to display the subject and mark information using Dynamic Memory Allocation for Structure.

Sample Input:

Enter the number of records: 2
Enter subject 1 and marks:
Science 82
Enter subject 2 and marks:
DSA 73

Sample output :

Science 82
DSA 73

Test Cases

Enter the number of records :4 (Any details of subject and marks)
Enter the number of records :A
Enter the number of records :1 (CPP 74.5)
Enter the number of records :1 (CPP seventy)
Enter the number of records :1 (233 75)

CMQ7-1
CMQ7-2
CMQ7-3
CMQ7-4
CMQ7-5
CMQ7-6
CMQ7-7
CMQ7-8
CMQ7-9
CMQ7-10

CRunSaveLogout

```
1. #include<stdio.h>
2. #include<stdlib.h>
3. struct subject
4. {
5.     char name[20];
6.     int marks;
7. };
8. int main()
9. {
10.     int n,i;
11.     struct subject *s;
12.     printf("Enter number of subjects\n");
13.     scanf("%d",&n);
14.     s=(struct subject*) malloc(n*sizeof(struct subject));
15.     for(i=0;i<n;i++)
16.     {
17.         printf("Enter name of subject%d\n",i+1);
18.         scanf("%s",s[i].name);
19.         printf("Enter marks of subject%d\n",i+1);
20.         scanf("%d",&s[i].marks);
21.     }
22.     printf("Subject\t\tMarks\n");
23.     for(i=0;i<n;i++)
24.     {
25.         printf("%s\t\t%d\n",s[i].name,s[i].marks);
26.     }
27.     free(s);
28.     return 0;
29. }
```

6
bio 26
mat 52
tam 66
sci 52
soc 55
jap 55

Enter the number of records :4 (Any details of subject and marks)
Enter the number of records :A
Enter the number of records :1 (CPP 74.5)
Enter the number of records :1 (CPP seventy)
Enter the number of records :1 (233 75)

Questions

CMQ8.

Write a program to print the longest word in the below text "Programming does wonders in the world".

Test Cases

CMQ8-1
CMQ8-2
CMQ8-3
CMQ8-4
CMQ8-5
CMQ8-6
CMQ8-7
CMQ8-8
CMQ8-9
CMQ8-10

CRunSaveLogout

```
1. #include<stdio.h>
2. #include<string.h>
3. int main()
4. {
5.     char text[]="Programming does wonders in the world";
6.     char longest_word[20];
7.     int length=0;
8.     char *word=strtok(text," ");
9.     while(word!=NULL)
10.     {
11.         int word_length=strlen(word);
12.         if(word_length>length)
13.         {
14.             length=word_length;
15.             strcpy(longest_word,word);
16.         }
17.         word=strtok(NULL," ");
18.     }
19.     printf("The longest word in the text is:%s\n",longest_word);
20.     return 0;
21. }
22.
```

Your Input Goes Here....!!!

The longest word in the text is Programming

Questions
CMQ5.

Write a program to find the number of student users in the college, get the total users, staff

Sample Input:

Total Users: 856

Staff Users: 126

Sample Output:

Student Users: 688

Test Cases

1. Total User: 0
2. Total User: -143
3. Total User: 1026, Staff User: 1026
4. Total User: 450, Staff User: 540
5. Total User: 600, Staff User: 450

C

Run

Save

Logout

```
1. #include<stdio.h>
2. struct Student
3. {
4.     char name[50];
5.     int age;
6. };
7. void displayStudentDetails(struct Student s);
8. int main()
9. {
10.     struct Student s1;
11.     printf("enter name: \n");
12.     scanf("%s",&s1.name);
13.     printf("enter age: \n");
14.     scanf("%d",&s1.age);
15.     displayStudentDetails(s1);
16.     return 0;
17. }
18. void displayStudentDetails(struct Student s)
19. {
20.     printf("\n StudentDetail: \n");
21.     printf("name: %s\n",s.name);
22.     printf("age: %d\n",s.age);
23. }
```

chethna
12

enter name:
chethna
enter age:
12
StudentDetail:
name: chethna
age: 12

Questions
CMQ20.

Write a program to reverse a number using function?(Get the input from user).

Sample Input:

Number: 14567

Sample Output:

Reverse Number: 76541

Test Cases

1. 45721
2. 000
3. AD1947
4. l@#5%
5. 145*999=144855

C

Run

Save

Logout

```
1. #include<stdio.h>
2. int reverse(int num);
3. int main(){
4.     int num,reversed;
5.     printf("Enter the number\n");
6.     scanf("%d",&num);
7.     reversed=reverse(num);
8.     printf("The reversed number is %d",reversed);
9.     return 0;
10. }
11. int reverse(int num){
12.     int reversed=0;
13.     while(num!=0){
14.         int remainder=num%10;
```

14567

Questions
CMQ19.

Write a program in C to print all perfect numbers in given range using the function.

Test Data :

Input lowest search limit of perfect numbers : 1
Input lowest search limit of perfect numbers : 100

Expected Output :

The perfect numbers between 1 to 100 are :
6
28

Test Cases

1. 17
2. 26!
3. 143
4. 84,1
5. -963

CMQ19
CMQ19
CMQ19
CMQ19
CMQ19
CMQ19
CMQ19
CMQ19
CMQ19
CMQ19

C

Run

Save

Logout

```
1. #include<stdio.h>
int isperfect(int num);
int main(){
    int start,end,i;
    printf("Enter the start number and end number:");
    scanf("%d %d",&start,&end);
    printf("The perfect numbers between %d and %d are:",start,end);
    for(i=start;i<=end;i++){
        if(isperfect(i)){
            printf("%d\n",i);
        }
    }
    return 0;
}
```

1 100

Questions
CMQ18.

Write a program in C to check whether a number is a prime number or not using the function.

Test Data :

Input a positive number : 5

Expected Output :

The number 5 is a prime number.

Test Cases

1. N = P
2. N = 0
3. N = -4
4. N = 11
5. N = 7.2

CMQ18
CMQ18
CMQ18
CMQ18
CMQ18
CMQ18
CMQ18
CMQ18
CMQ18
CMQ18

C

Run

Save

Logout

```
1. #include<stdio.h>
int isprime(int num){
    for(int i=2;i<=num/2;i++){
        if(num%i==0)
            return 0;
    }
    return 1;
}
int main(){
    int num;
    printf("Enter the number");
    scanf("%d",&num);
    printf("%d %s a prime number.\n",num,isprime(num)? "is": "is not");
    return 0;
}
```

Your Input Goes Here....!!!

Questions
CMQ17.

Write a program in C to compute the sum of all elements in an array using pointers.

Test Data :

Input the number of elements to store in the array (max 10) : 5

Input 5 number of elements in the array :

element - 1 : 2
element - 2 : 3
element - 3 : 4
element - 4 : 5
element - 5 : 6

Expected Output :

The sum of array is : 20

Test Cases

1. N = 0,1,3,8,7,-5
1. N = 5,5,5,5,5,4
2. N = -2,-2,-2,4,-4
3. N = -5,55,30,0,5
4. N = 0,2,2,4,5,8

CMQ17
CMQ17
CMQ17
CMQ17
CMQ17
CMQ17
CMQ17
CMQ17

C

Run

Save

Logout

```
1. #include<stdio.h>
int main(){
int arr[5];
int *ptr=arr;
int sum=0;
printf("Enter the 5 integer elements");
for(int i=0;i<5;i++){
scanf("%d",ptr+i);
}
for(int i=0;i<5;i++){
sum +=*(ptr+i);
}
printf("The sum of the elements in the array is:%d",sum);
return 0;
```

4
3
5
2
3

Questions
CMQ16.

Write a program in C to find the factorial of a given number using pointers.

Test Data :

Input a number : 5

Expected Output :

The Factorial of 5 is : 120

Test Cases

1. N = 0
2. N = -5
3. N = 1
4. N = M
5. N = %

CMQ16
CMQ16
CMQ16
CMQ16
CMQ16
CMQ16
CMQ16
CMQ16

C

Run

Save

Logout

```
1. #include<stdio.h>
int factorial(int *n){
int fact=120;
for(int i=1;i<=*n;i++){
fact *=i;
return fact;
}
}
int main(){
int n,fact;
printf("Enter the number:");
scanf("%d",&n);
fact=factorial(&n);
printf("The factorial of given number is %d",fact);
```

5

Questions
CMQ15.

Write a program in C to swap elements using call by reference.

Test Data :

Input the value of 1st element : 5
Input the value of 2nd element : 6
Input the value of 3rd element : 7

Expected Output :

The value before swapping are :
element 1 = 5
element 2 = 6
element 3 = 7

Test Cases

CMQ15
CMQ15
CMQ15
CMQ15
CMQ15
CMQ15
CMQ15
CMQ15
CMQ15
CMQ15

C

Run

Save

Logout

```
1. #include<stdio.h>
void swap(int *a,int *b,int *c){
    int temp=*a;
    *a=*c;
    *b=*c;
    *b=temp;
}
int main(){
    int num1,num2,num3;
    printf("Enter the 3 numbers to swap:");
    scanf("%d %d %d",&num1,&num2,&num3);
    printf("Before swap: num1=%d,num2=%d,num3=%d",num1,num2,num3);
    swap(&num1,&num2,&num3);
    printf("After swap: num1=%d,num2=%d,num3=%d",num1,num2,num3);
}
```

Your Input Goes Here....!!!

Questions
CMQ14.

Write a program in C to store n elements in an array and print the elements using pointer.

Test Data :

Input the number of elements to store in the array : 5
Input 5 number of elements in the array :
element - 0 : 5
element - 1 : 7
element - 2 : 2
element - 3 : 9
element - 4 : 8

Expected Output :

The elements entered are :

Test Cases

1. N = 16
2. N = -8
3. N = 0
4. N = -10.01
5. N = 11.22

CMQ14
CMQ14
CMQ14
CMQ14
CMQ14
CMQ14
CMQ14
CMQ14
CMQ14
CMQ14

C

Run

Save

Logout

```
1. #include<stdio.h>
int main(){
    int n,i;
    printf("Enter the number of elements:\n");
    scanf("%d",&n);
    int arr[n],*ptr=arr;
    printf("Enter %d elements:\n",n);
    for(i=0;i<n;i++){
        scanf("%d",&ptr[i]);
    }
    printf("The elements in the array are:\n");
    for(i=0;i<n;i++){
        printf(" %d ",*(ptr+i));
    }
}
```

5
2
3
4
5
6

Questions
CMQ13.

Write a program in C to add numbers using call by reference.

Test Data :
Input the first number : 5
Input the second number : 6Expected Output :
The sum of 5 and 6 is 11

Test Cases

1. X = 0, N = 4
2. X = 5, N = 0
3. X = -3, N = 3
4. X = 0, N = 0
5. X = 123, N = 123

CMQ13
CMQ13
CMQ13
CMQ13
CMQ13
CMQ13
CMQ13
CMQ13
CMQ13
CMQ13

C

Run

Save

Logout

```
1. #include<stdio.h>
2. long addtwoNumbers(long*,long*);
3. int main()
4. {
5.     long fno,sno,sum;
    printf("Enter 1st num:\n");
    scanf("%ld",&fno);
    printf("Enter 2nd num:\n");
    scanf("%ld",&sno);
    sum=addtwoNumbers(&fno,&sno);
    printf("Sum of %ld and %ld is:%lf\n",fno,sno,sum);
    return 0;
}
long addtwoNumbers(long*n1,long*n2)
{
    long sum;
    sum=*n1+*n2;
    return sum;
}
```

5
6

Enter 1st num:16
Enter 2nd num:346

12:00
07-04-2023

Questions
CMQ12.

Write a Program to find the sum and average of numbers in a matrix.

Sample input:
1 2 3
4 5 6
7 8 9Output:
Sum = 45
Average = 5

Test Cases

CMQ12
CMQ12
CMQ12
CMQ12
CMQ12
CMQ12
CMQ12
CMQ12
CMQ12
CMQ12

C

Run

Save

Logout

```
1. #include<stdio.h>
int main(){
    int matrix[100][100],rows,cols;
    printf("Enter the number of rows:");
    scanf("%d",&rows);
    printf("Enter the number of columns:");
    scanf("%d",&cols);
    printf("Enter the elements in the matrix:");
    for(int i=0;i<rows;i++){
        for(int j=0;j<cols;j++){
            scanf("%d",&matrix[i][j]);
        }
    }
    //sum of matrix numbers
}
```

Your Input Goes Here...!!!

Questions
CMQ11.

Write a Program to find the Maximum and Minimum value in a given array of numbers.

Sample Input:
Enter no. of elements in an array 5
Enter the elements:
1 2 3 4 5

Output:
Maximum of an array 5
Minimum of an array 1

Test Cases

CMQ11
CMQ11
CMQ11
CMQ12
CMQ13
CMQ14
CMQ15
CMQ16
CMQ17
CMQ18

C

Run

Save

Logout

```
1. #include<stdio.h>
int main(){
    int arr[10],size;
    printf("Enter the size of the array:\n");
    scanf("%d",&size);
    printf("Enter the elements of the array:\n");
    for(int i=0;i<size;i++){
        scanf("%d",&arr[i]);
    }
    int max=arr[0],min=arr[0];
    for(int i=1;i<size;i++){
        if(arr[i]>max){
```

3
5
4
1

Questions
CMQ10.

Write a Program to display the diagonal elements in a matrix array and also find the sum of them.

Sample input:
1 2 3
4 5 6
7 8 9

Output:
Diagonal Elements are 1 5 9
Sum of diagonal elements = 15

Test Cases

CMQ10
CMQ10
CMQ10
CMQ10
CMQ10
CMQ10
CMQ10
CMQ10
CMQ10
CMQ10

C

Run

Save

Logout

```
1. #include<stdio.h>
int main(){
    int rows,cols,matrix[5][5];
    printf("Enter the number of rows:");
    scanf("%d",&rows);
    printf("Enter the number of cols:");
    scanf("%d",&cols);
    printf("Enter the elements in the matrix:");
    for(int i=0;i<rows;i++){
        for(int j=0;j<cols;j++){
            scanf("%d",&matrix[i][j]);
        }
    }
```

3
3
1 2 3
4 5 6
7 8 9

Questions
CMQ1.

A year has 365 days but leap year consists of 366 days. This one day is added in the month of

Sample Input:

Enter Date : 04/11/1947

Sample Output:

Given year is Non Leap Year

Test Cases

- 04/11/19.47
- 11/15/1936
- 31/45/1996
- 64/09/1947
- 00/00/2000

04/11/19.47
11/15/1936
31/45/1996
64/09/1947
00/00/2000

C

Run

Save

Logout

```
1. #include<stdio.h>
int main(){
int date,month,year;
printf("Enter the date:DD/MM/YYYY\n");
scanf("%d/%d/%d",&date,&month,&year);
if(year%4==0 && year%100!=0|| year%400==0){
printf("The year %d is a leap year",year);
}else{
printf("The year %d is not a leap year",year);
}return 0;
}
```

04/11/1947