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## Assignment – 1

1. Write a C program to find the sum and average of three numbers.

```
#include<stdio.h>

int main(){

    int num1, num2, num3;

    float sum, avg;

    printf("\n\n***Program to find the sum and average of three numbers***\n");

    printf("Name: Sneha Roy, Class MCA1B, Roll-48 \n ");

    printf("Enter three numbers : ");

    scanf("%d %d %d", &num1, &num2, &num3);

    sum = num1 + num2 + num3;

    avg = sum / 3.0;

    printf("Sum : %d\n\n", sum);

    printf("Average : %f", avg);

    return 0;

}
```

2. Write a C program to find the sum of individual digits of a given positive integer.

```
#include<stdio.h>

int main(){

    printf("\n\n***Program to find the sum of individual digits of a given positive integer***\n");

    printf("Name: Sneha Roy, Class MCA1B, Roll-48 \n \n");

    int n, digit, sum = 0;

    printf("Enter a number : ");

    scanf("%d", &n);

    while(n != 0){

        digit = n % 10;

        sum += digit;

        n = n / 10;

    }

    printf("Sum of the digit : %d", sum);

    return 0;

}
```

3. Write a C program to generate the first n terms of the Fibonacci sequence.

```
#include<stdio.h>

int main(){

    printf("\n\n***program to generate the first n terms of the Fibonacci
sequence***\n");

    printf("Name: Sneha Roy, Class MCA1B, Roll-48 \n \n");


    int term;

    printf("Enter the term: ");

    scanf("%d", &term);

    int a = 0, b = 1, ans = 0;

    printf("%d , %d , ", a, b);

    for (int i = 2; i < term; i++){

        ans = a + b;

        a = b;

        b = ans;

        printf("%d , ", ans);

    }

    return 0;

}
```

4. Write a C program to generate prime numbers between 1 to n.

```
#include<stdio.h>

int main(){

    printf("\n\n***Program to generate prime numbers between 1 to n***\n");

    printf("Name: Sneha Roy, Class MCA1B, Roll-48 \n \n");

    int n;

    printf("Enter a number : ");

    scanf("%d", &n);

    for (int i = 2; i <= n; i++) {

        int count = 0;

        for(int j = 2; j < i; j++){

            if(i % j == 0) {

                count++;

                break;

            }

        }

        if(!count) printf("%d , ", i);

    }

    if(n == 1) printf("There is no prime number.");

    return 0;

}
```

5. Write a C program to check whether a given number is an Armstrong number or not.

```
#include <stdio.h>
```

```
int main() {
```

```
    printf("\n\n***Program to check whether a given number is an Armstrong  
number or not.***\n");
```

```
    printf("Name: Sneha Roy, Class MCA1B, Roll-48 \n \n");
```

```
    int num, sum = 0, remainder, digitCount = 0, n;
```

```
    printf("Enter a number: ");
```

```
    scanf("%d", &num);
```

```
    n = num;
```

```
    while (n != 0) {
```

```
        n = n / 10;
```

```
        digitCount++;
```

```
    }
```

```
    n = num;
```

```
    while (n != 0) {
```

```
        remainder = n % 10;
```

```
        int power = 1;
```

```
        for (int i = 0; i < digitCount; i++) {
```

```
            power *= remainder;
```

```
        }
```

```
    sum += power;

    n /= 10;
}

if (num == sum)
    printf("%d is an Armstrong Number.\n", num);
else
    printf("%d is not an Armstrong Number.\n", num);

return 0;
}
```

6. Write a C program to evaluate the algebraic expression  $(ax+b)/(ax-b)$ .

```
#include <stdio.h>

int main() {

    printf("\n\n***Program to evaluate the algebraic expression (ax+b)/(ax-  
b).***\n");

    printf("Name: Sneha Roy, Class MCA1B, Roll-48 \n \n");

    float a, b, x;

    printf("Enter the values of a, b and x : ");

    scanf("%f %f %f", &a, &b, &x);

    if((a*x - b) == 0) printf("Erro. ");

    else printf("Result : %lf", ((a * x + b) / (a * x - b)));

    return 0;

}
```

7. Write a C program to check if the given number is a perfect number.

```
#include<stdio.h>

int main(){

    printf("\n\n***Program to check if the given number is a perfect number***\n");
    printf("Name: Sneha Roy, Class MCA1B, Roll-48 \n \n");

    int n, sum = 0;

    printf("Enter a number : ");

    scanf("%d", &n);

    for(int i = 1; i < n; i++){

        if(n % i == 0){

            sum += i;

        }

    }

    if(sum == n) printf("%d is a Prefect Number.", n);

    else printf("%d is not a Prefect Number.", n);

    return 0;

}
```



8. Write a C program to check if a given number is a strong number.

```
#include<stdio.h>
```

```
int factorial (int n){
```

```
    int fact = 1;
```

```
    for(int i = 1; i <= n; i++){
```

```
        fact *= i;
```

```
    }
```

```
    return fact;
```

```
}
```

```
int main(){
```

```
    printf("\n\n*****\n");
```

```
    printf("Name: Sneha Roy, Class MCA1B, Roll-48 \n \n");
```

```
    int n, temp, sum = 0, digit;
```

```
    printf("Enter a number : ");
```

```
    scanf("%d", &n);
```

```
    temp = n;
```

```
    while(temp != 0){
```

```
        digit = temp % 10;
```

```
sum += factorial(digit);  
temp /= 10;  
}  
if(sum == n) printf("%d is a Strong Number.", n);  
else printf("%d is not a Strong Number.", n);  
return 0;  
}
```

9. Write a program to print your name without using any semicolons in the program.

```
#include<stdio.h>
```

```
void main(){
```

```
    if(printf("Sneha Roy")){}
```

```
}
```

10. Write a program to convert temperatures in Celsius to Fahrenheit and vice-versa.

```
#include <stdio.h>

int main(){
    int choice;
    float temp;

    printf("Press 1 to convert Celsius to Fahrenheit : \n");
    printf("Press 2 to convert Fahrenheit to Celsius : \n");
    printf("Enter your choice : ");
    scanf("%d", &choice);

    switch (choice){
        case 1:
            printf("Enter temperature in Celsius : ");
            scanf("%f", &temp);
            printf("Temperature in Fahrenheit : %f", ((temp * 9/5) + 32));
            break;

        case 2:
            printf("Enter temperature in Fahrenheit : ");
            scanf("%f", &temp);
```

```
printf("Temperature in Celsius : %f", ((temp - 32) * 5/9));
```

```
break;
```

```
default: printf("Invalid choice");
```

```
}
```

```
return 0;
```

```
}
```

11. Write a C program to check whether a number is a palindrome or not.

```
#include<stdio.h>

int main(){

    int num, n, remainder, reverseNum;

    printf("Enter a number : ");

    scanf("%d", &num);

    n = num;

    while (n != 0){

        remainder = n % 10;

        reverseNum = reverseNum *10 + remainder;

        n /= 10;

    }

    if(num == reverseNum) printf("%d is Palindrome.", num);

    else printf("%d is not Palindrome.", num);

    return 0;

}
```

12. Write a C program to find the maximum between two numbers.

```
#include<stdio.h>
```

```
int main(){
```

```
    int a, b;
```

```
    printf("Enter two number : ");
```

```
    scanf("%d %d", &a , &b);
```

```
    if(a > b) printf("The maximum number is : %d ", a);
```

```
    else if(b > a) printf("The maximum number is : %d ", b);
```

```
    else printf("Both numbers are equal.");
```

```
    return 0;
```

```
}
```

13. Write a C program to find the maximum between three numbers.

```
#include<stdio.h>
```

```
int main(){
```

```
    int a, b, c;
```

```
    printf("Enter three number : ");
```

```
    scanf("%d %d %d", &a , &b, &c);
```

```
    if(a >= b && a >= c) printf("The maximum number is : %d ", a);
```

```
    else if(b >= a && b >= c) printf("The maximum number is : %d ", b);
```

```
    else printf("The maximum number is : %d", c);
```

```
    return 0;
```

```
}
```



14. Write a C program to check whether a number is negative, positive, or zero.

```
#include<stdio.h>
```

```
int main(){
```

```
    int n;
```

```
    printf("Enter a number : ");
```

```
    scanf("%d", &n);
```

```
    if(n > 0 ) printf("%d is positive number. ", n);
```

```
    else if(n < 0) printf("%d is negative number. ", n);
```

```
    else printf("%d is zero.", n);
```

```
    return 0;
```

```
}
```

15. Write a C program to check whether a number is divisible by 5 and 11 or not within the range of 100 to 500.

```
#include<stdio.h>
```

```
int main(){
```

```
    int n;
```

```
    printf("Enter a number between 100 and 500 : ");
```

```
    scanf("%d", &n);
```

```
    if(n < 100 || n > 500 ) printf("The Enter number is not in range (100 to 500).");
```

```
    else {
```

```
        if(n % 5 == 0 && n % 11 == 0) printf("%d is divisible by 5 and 11.", n);
```

```
        else printf("%d is not divisible by 5 and 11.", n);
```

```
    }
```

```
    return 0;
```

```
}
```

16. Write a C program to check whether a number is even or odd.

```
#include<stdio.h>
```

```
int main(){
```

```
    int n;
```

```
    printf("Enter a number : ");
```

```
    scanf("%d", &n);
```

```
    if(n == 0) printf("Enter number is zero.");
```

```
    else if(n % 2 == 0 ) printf("%d is an even number.", n);
```

```
    else printf("%d is an odd number.", n);
```

```
    return 0;
```

```
}
```

17. Write a C program to check whether a year is a leap year or not.

```
#include<stdio.h>
```

```
int main(){
```

```
    int n;
```

```
    printf("Enter a year : ");
```

```
    scanf("%d", &n);
```

```
    if(n % 100 == 0){
```

```
        if(n % 400 == 0) printf("%d is Leap Year.", n);
```

```
        else printf("%d is not Leap Year.", n);
```

```
    }
```

```
    else if(n % 4 == 0) printf("%d is Leap Year.", n);
```

```
    else printf("%d is not Leap Year.", n);
```

```
    return 0;
```

```
}
```

18. Write a C program to check whether a character is alphabet or not.

```
#include<stdio.h>
```

```
int main(){
```

```
    char ch;
```

```
    printf("Enter a character : ");
```

```
    scanf("%c", &ch);
```

```
    int n = (int)ch;
```

```
    if((n >= 65 && n <= 90) || (n >= 97 && n <= 122)) printf("%c is an Alphabet.", ch);
```

```
    else printf("%c is not an Alphabet.", ch);
```

```
    return 0;
```

```
}
```

19. Write a C program to input any alphabet and check whether it is a vowel or consonant.

```
#include<stdio.h>
```

```
int main(){
```

```
    char ch;
```

```
    printf("Enter a character : ");
```

```
    scanf("%c", &ch);
```

```
    if((ch >= 'A' && ch <= 'Z') || (ch >= 'a' && ch <= 'z')) {
```

```
        if(ch == 'a' || ch == 'e' || ch == 'i' || ch == 'o' || ch == 'u')
```

```
            printf("%c is a vowel.", ch);
```

```
        else printf("%c is a consonant.", ch);
```

```
    }
```

```
    else printf("%c is not an Alphabet.", ch);
```

```
    return 0;
```

```
}
```

20. Write a C program to input any character and check whether it is an alphabet, digit, or special character.

```
#include<stdio.h>
```

```
int main(){
```

```
    char ch;
```

```
    printf("Enter a character : ");
```

```
    scanf("%c", &ch);
```

```
    if((ch >= 'A' && ch <= 'Z') || (ch >= 'a' && ch <= 'z'))
```

```
        printf("%c is an Alphabet.", ch);
```

```
    else if ((ch >= '0') && (ch <= '9'))
```

```
        printf("%c is a Number.", ch);
```

```
    else printf("%c is a Special Character.", ch);
```

```
    return 0;
```

```
}
```