DAY-1

1.Write a c program to check given number is odd or not?

Program :

```
#include<stdio.h>

int main ()

{

        int n;

        {

        Printf ("Enter the number : ");

        }

        Scanf ("%d",&n);

        if (n%2==0)

        printf ("It is even number.");

        else

        printf ("It is odd number.");

        return 0;

}
```

Output:

```
Enter the number : 19
It is odd number.
--------------------------------
Process exited after 16.05 seconds with return value 0
Press any key to continue . . .
```

2.write a c program to find sum of first n numbers using any loop?

Program :

```
#include <stdio.h>

int main ()

{

        int i, range, sum =0;
```

```
        printf("Enter the n value :");
        scanf("%d",&range);
        for(i=1; i<=range ; i++){
                sum += i;
        }
        printf("The sum of first %d numbers is : %d", range, sum);
        return 0;
}
```

Output:

```
Enter the n value :10
The sum of first 10 numbers is : 55
------------------------------
Process exited after 7.528 seconds with return value 0
Press any key to continue . . .
```

3.write a c program to find sum of even numbers in the first n numbers?

Program :

```
#include <stdio.h>
int main(){
   int i, num, sum = 0;
   printf("Enter the n value: ");
   scanf("%d", &num);
   printf("Even Numbers Between 0 To %d are: \n", num);
   for (i = 1; i <= num; i++ ){
      if (i % 2 == 0){
         printf("%d\n", i);
         sum = sum + i;
      }
   }
   printf("The Sum of Even Numbers From 0 To %d is %d.", num, sum);
   return 0;
}
```

Output :

```
Enter the n value: 10
Even Numbers Between 0 To 10 are:
2
4
6
8
10
The Sum of Even Numbers From 0 To 10 is 30.
--------------------------------
Process exited after 7.782 seconds with return value 0
Press any key to continue . . .
```

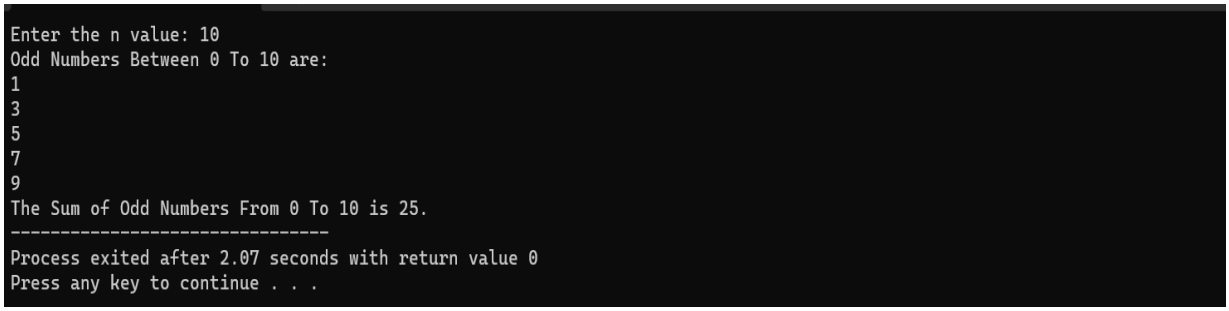
4. write a c program to find sum of odd numbers in the first n numbers?

Program :

```
#include <stdio.h>

int main(){
   int i, num, sum = 0;
   printf("Enter the n value: ");
   scanf("%d", &num);
   printf("Odd Numbers Between 0 To %d are: \n", num);
   for (i = 1; i <= num; i++ ){
      if (i % 2 != 0){
         printf("%d\n", i);
         sum = sum + i;
      }
   }
   printf("The Sum of Odd Numbers From 0 To %d is %d.", num, sum);
   return 0;
}
```

Output :



5. write a c program to find factorial of a given number with recursion?

Program :

```
#include <stdio.h>

int factorial(int n) {
   if (n == 0 || n == 1) {
      return 1;
   } else {
      return n * factorial(n - 1);
   }
}

int main() {
   int num;
   printf("Enter a positive integer: ");
   scanf("%d", &num);
   if (num < 0) {
      printf("Factorial is not defined for negative numbers.\n");
   } else {
      int result = factorial(num);
      printf("Factorial of %d is %d\n", num, result);
   }
   return 0;
}
```

Output :

```
Enter a positive integer: 5
Factorial of 5 is 120

------------------------------
Process exited after 5.703 seconds with return value 0
Press any key to continue . . .
```

6. write a c program to find factorial of a given number without recursion?

Program :

```
#include <stdio.h>

int main() {
   int num ,i;
   unsigned long long factorial = 1;
   printf("Enter a positive integer: ");
   scanf("%d", &num);
   if (num < 0) {
      printf("Factorial is not defined for negative numbers.\n");
   } else {
      for ( i = 1; i <= num; i++) {
         factorial *= i;
      }
      printf("Factorial of %d is %llu\n", num, factorial);
   }
   return 0;
}
```

Output :

```
Enter a positive integer: 6
Factorial of 6 is 720

------------------------------
Process exited after 5.609 seconds with return value 0
Press any key to continue . . .
```

7. Write a c program to generate Fibonacci series with recursion?

Program :

```c
#include <stdio.h>

int fibonacci(int n) {
   if (n <= 0)
      return 0;
   else if (n == 1)
      return 1;
   else
      return fibonacci(n - 1) + fibonacci(n - 2);
}

int main() {
   int num ,i;
   printf("Enter the number of terms in Fibonacci series: ");
   scanf("%d", &num);
   if (num <= 0) {
      printf("Number of terms should be positive.\n");
   } else {
      printf("Fibonacci Series: ");
      for ( i = 0; i < num; i++) {
         printf("%d ", fibonacci(i));
      }
      printf("\n");
   }
   return 0;
}
```

Output :

```
Enter the number of terms in Fibonacci series: 20
Fibonacci Series: 0 1 1 2 3 5 8 13 21 34 55 89 144 233 377 610 987 1597 2584 4181

--------------------------------
Process exited after 12.09 seconds with return value 0
Press any key to continue . . .
```

8. Write a c program to generate Fibonacci series without recursion?

Program :

```
#include <stdio.h>
int main() {
   int num ,i;
   printf("Enter the number of terms in Fibonacci series: ");
   scanf("%d", &num);
   if (num <= 0) {
      printf("Number of terms should be positive.\n");
   } else {
      int fib[num];
      fib[0] = 0;
      fib[1] = 1;
      printf("Fibonacci Series: %d %d ", fib[0], fib[1]);
      for ( i = 2; i < num; i++) {
         fib[i] = fib[i - 1] + fib[i - 2];
         printf("%d ", fib[i]);
      }
      printf("\n");
   }
   return 0;
}
```

Output :

```
Enter the number of terms in Fibonacci series: 20
Fibonacci Series: 0 1 1 2 3 5 8 13 21 34 55 89 144 233 377 610 987 1597 2584 4181

--------------------------------
Process exited after 12.09 seconds with return value 0
Press any key to continue . . .
```

9. Write a c program to reverse a number?

Program :

```
#include <stdio.h>
int reverseNumber(int num) {
```

```
    int reversedNum = 0;
    while (num > 0) {
        int remainder = num % 10;
        reversedNum = reversedNum * 10 + remainder;
        num /= 10;
    }
    return reversedNum;
}
int main() {
    int num;
    printf("Enter a number: ");
    scanf("%d", &num);
    int reversed = reverseNumber(num);
    printf("Reversed number: %d\n", reversed);
    return 0;
}
```

Output :

```
Enter a number: 15478
Reversed number: 87451

--------------------------------
Process exited after 3.881 seconds with return value 0
Press any key to continue . . .
```

10. Write a **c program to check the given number is palindrome or not?**

Program :

```
#include <stdio.h>
int isPalindrome(int num) {
    int originalNum = num;
    int reversedNum = 0;
    while (num > 0) {
        int remainder = num % 10;
```

```
        reversedNum = reversedNum * 10 + remainder;
        num /= 10;
    }
    if (originalNum == reversedNum) {
        return 1;
    } else {
        return 0;
    }
}
int main() {
    int num;
    printf("Enter a number: ");
    scanf("%d", &num);
    if (isPalindrome(num)) {
        printf("%d is a palindrome.\n", num);
    } else {
        printf("%d is not a palindrome.\n", num);
    }
    return 0;
}
```

Output :

```
Enter a number: 5987895
5987895 is a palindrome.

--------------------------------
Process exited after 30.65 seconds with return value 0
Press any key to continue . . .
```

11. Write a c program to check the given number is Armstrong or not?

Program:

```
#include <stdio.h>
#include <math.h>
int main() {
```

```
    int n, originalNumber, remainder, result = 0, nDigits = 0;
    printf("Enter an integer: ");
    scanf("%d", &n);
    originalNumber = n;
    while (originalNumber != 0) {
        originalNumber /= 10;
        ++nDigits;
    }
    originalNumber = n;
    while (originalNumber != 0) {
        remainder = originalNumber % 10;
        result += pow(remainder, nDigits);
        originalNumber /= 10;
    }
    if (result == n) {
        printf("%d is an Armstrong number.", n);
    } else {
        printf("%d is not an Armstrong number.", n);
    }
    return 0;
}
```

Output :