Loops and Iterations (5-8-2025)

1. Write a program to print numbers from 1 to 100.

```
#include <stdio.h>
void main()

{
    int i;
    for(i=1; i<=100; i++)

    {
        printf("%d\n", i);
    }

}
```

```
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49
 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 9
5 96 97 98 99 100
```

2. Write a program to print even numbers from 1 to 50.

```
#include<stdio.h>

void main()

{

  int i;

  for(i=1; i<=50; i++)

  { if(i % 2 == 0)

  {

      printf("%d ", i)  }

  }

}
```

```
2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50
```

3. Write a program to find the factorial of a number.

```
#include <stdio.h>
void main()

{
    int n, i;
    unsigned long long fact = 1;
    printf("Enter a number: ");
    scanf("%d", &n);
    for(i=1; i<=n; i++)

    {
        fact *= i;
    }
    printf("Factorial of %d = %llu", n, fact);

}
```

```
Enter a number: 5
Factorial of 5 = 120
```

4. Write a program to calculate the sum of digits of a number.

```
#include <stdio.h>
void main()

{
    int num, sum = 0, digit;
    printf("Enter a number: ");
    scanf("%d", &num);
    while(num != 0) {
        digit = num % 10;
        sum += digit;
        num /= 10;
    }
    printf("Sum of digits = %d", sum);
    }

}
```

```
Enter a number: 1234
Sum of digits = 10
```

5. Write a program to reverse a number.

```
#include <stdio.h>
void main()

{
    int num, rev = 0, digit;
    printf("Enter a number: ");
    scanf("%d", &num);
    while(num != 0) {
        digit = num % 10;
        rev = rev * 10 + digit;
        num /= 10;
    }
    printf("Reversed number = %d", rev)

}
```

```
Enter a number: 1234
Reversed number = 4321
```

6. Write a program to check whether a number is a palindrome.

```
#include <stdio.h>
void main() {
    int num, original, rev = 0, digit;
    printf("Enter a number: ");
    scanf("%d", &num);
    original = num;
    while(num != 0) {
        digit = num % 10;
        rev = rev * 10 + digit;
        num /= 10;
    }
    if(original == rev)
        printf("Palindrome");
    else
        printf("Not Palindrome");

}
```

```
Enter a number: 121
Palindrome
```

7. Write a program to print multiplication table of a number.

```
#include <stdio.h>
void main()

 {
    int n, i;
    printf("Enter a number: ");
    scanf("%d", &n);
    for(i=1; i<=10; i++)

    {
        printf("%d x %d = %d\n", n, i, n*i);
    }

}
```

```
Enter a number: 7
7 x 1 = 7
7 x 2 = 14
...
7 x 10 = 70
```

8. Write a program to count the number of digits in a number.

```
#include <stdio.h>
void main() {
    int num, count = 0;
    printf("Enter a number: ");
    scanf("%d", &num);
    if(num == 0) count = 1;
    while(num != 0) {
        num /= 10;
        count++;
    }
    printf("Number of digits = %d", count);
    }
```

```
Enter a number: 12345
Number of digits = 5
```

9. Write a program to print the Fibonacci series up to n terms.

```
#include <stdio.h>
int main() {
    int n, i;
    int t1 = 0, t2 = 1, nextTerm;
    printf("Enter the number of terms: ");
    scanf("%d", &n);
    printf("Fibonacci Series: ");
    for(i=1; i<=n; i++) {
        printf("%d ", t1);
        nextTerm = t1 + t2;
        t1 = t2;
        t2 = nextTerm;
    }
    return 0;
}
```

```
Enter the number of terms: 7
Fibonacci Series: 0 1 1 2 3 5 8
```

10. Write a program to calculate the sum of the first n natural numbers.

```c
#include <stdio.h>
int main() {
    int n, sum = 0, i;
    printf("Enter a number: ");
    scanf("%d", &n);
    for(i=1; i<=n; i++) {
        sum += i;
    }
    printf("Sum = %d", sum);
    return 0;
}
```

```
Enter a number: 10
Sum = 55
```