

# Practical Number 05

Practical Number	05
Areas covered	Iteration control structure

## Section A

**Q1) Write a C program to print numbers from 0 to 100. (You are required to write 3 separate answers each using While, Do..While, For, looping structures)**

while loop

```
#include <stdio.h>
int main() {
    int i = 0;
    while (i <= 100) {
        printf("%d ", i);
        i++;
    }
    return 0;
}
```

Do while

```
#include <stdio.h>
int main() {
    int i = 0;
    do {
        printf("%d ", i);
        i++;
    } while (i <= 100);
    return 0;
}
```

For loop

```
#include <stdio.h>
int main() {
    int i;
    for (i = 0; i <= 100; i++) {
        printf("%d ", i);
    }
}
```

```
}  
return 0;  
}
```

**Q2) Write a C program to calculate and print the total of 10 marks and the average. If the average is less than 50 program should print "Fail!" otherwise "Pass!"**

```
#include <stdio.h>  
int main() {  
    int marks[10];  
    int total = 0;  
    float average;  
    printf("Enter 10 marks:\n");  
    for (int i = 0; i < 10; i++) {  
        scanf("%d", &marks[i]);  
        total += marks[i];  
    }  
    average = (float)total / 10.0;  
    printf("Total marks: %d\n", total);  
    printf("Average marks: %.2f\n", average);  
    if (average < 50.0) {  
        printf("Fail!\n");  
    } else {  
        printf("Pass!\n");  
    }  
    return 0;  
}
```

**Q3) Write a C program to calculate factorial of a user given number. Hint: Select an appropriate looping structure. Factorial of '0' is '1' (0! = 1) Ex: factorial of number 5 is calculated as 5! = 5\*4\*3\*2\*1**

**Q4) Write a C program to calculate the sum of all digits of a user given number. If user input 123 your program should output 6. (calculated as 1+2+3)**

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

```
}  
printf("Sum of digits: %d\n", sum);  
return 0;  
}
```

**Q5) Write a C program to reverse the digits of a number using do-while statement.**

```
#include <stdio.h>  
int main() {  
    int num, reversed = 0;  
    printf("Enter a number: ");  
    scanf("%d", &num);  
    do {  
        int digit = num % 10;  
        reversed = reversed * 10 + digit;  
        num /= 10;  
    } while (num != 0);  
    printf("Reversed number: %d\n", reversed);  
    return 0;  
}
```