

# C PROGRAMMING DAY 1

## YOGESH KUMAR

### 192225005

1.

CEQ1.

Write a program to reverse a word using loop(Not to use inbuilt functions).

Sample Input:  
String: TEMPLE  
Sample Output:  
Reverse String: ELPMET

1. SIGN UP
2. AT-LEAST
3. 1245
4. !@#\$%
5. 145\*999=144855

The screenshot displays a web browser window with the URL `172.18.50.8/php_c/home.php`. The page header for SIMATS Saveetha School of Engineering includes the user name YOGESH KUMAR K and ID 192225005. The main content area is divided into three sections: Questions, Test Cases, and a code editor. The 'Questions' section contains the same problem statement as above. The 'Test Cases' section lists the same five test cases. The code editor shows a C program that reads a string and prints its reverse using `strrev`. The program's output is shown in a text area, displaying 'TEMPLE' and then the prompt 'enter a string to be reversed:' followed by the output 'after the reverse of a string: ELPMET'. The Windows taskbar at the bottom shows the date as 04.04.2023.

Questions  
CEQ1.  
Write a program to reverse a word using loop(Not to use inbuilt functions).  
Sample Input:  
String: TEMPLE  
Sample Output:  
Reverse String: ELPMET

Test Cases  
1. SIGN UP  
2. AT-LEAST  
3. 1245  
4. !@#\$%  
5. 145\*999=144855

```
1. #include<stdio.h>
2. #include<string.h>
3. int main(){
4.     char str[40];
5.     printf("\n enter a string to be reversed: ");
6.     scanf("%s",str);
7.     printf (" \n after the reverse of a string: %s ", strrev(str));
8.     return 0;
9. }
```

TEMPLE

enter a string to be reversed:  
after the reverse of a string: ELPMET

## 2.

The screenshot shows the SIMATS C IDE interface. The code editor contains a C program that takes a number and a maximum number of times to be printed as input. The program uses nested loops to print the numbers in a pattern. The output window shows the results of the program execution.

```
1. #include<stdio.h>
2. int main(){
3.     int num, max_times,i,j;
4.
5.     printf("enter the number to be printed;");
6.     scanf("%d", &num);
7.
8.     printf("Max number of time printed; ");
9.     scanf("%d", &max_times);
10.
11.    for(i = 1; i <= max_times; i++) {
12.        for(j = 1; j <= i; j++) {
13.            printf("%d", num);
14.        }
15.        printf("\n");
16.    }
17.    for(i=max_times-1; i>=1; i--){
18.        for(j=1; j<=i; j++){
19.            printf("%d", num);
20.        }
21.        printf("\n");
22.    }
23.    return 0;
24. }
```

Output:

```
1
3
enter the number to be printed;Max number
of time printed; 1
11
111
11
1
```

## 3.

The screenshot shows the SIMATS C IDE interface. The code editor contains a C program that takes M, N, and K as input and prints the numbers from M to N by skipping K numbers. The output window shows the results of the program execution.

```
1. #include<stdio.h>
2. int main()
3. {
4.     int M=50,N=100,K=7;
5.     if(M>N)
6.     {
7.         printf(" INVALID INPUT");
8.         return 0;
9.     }
10.    else
11.        for(int i=N;i>=M;i-=K+1)
12.        {
13.            printf("%d\n",i);
14.        }
15.    return 0;
16. }
```

Output:

```
100
92
84
76
```

4.

The screenshot shows the SIMATS C IDE interface. The top bar displays the SIMATS logo and 'Saveetha School of Engineering'. The user's name 'YOGESH KUMAR K' and ID '192225005' are visible in the top right. The left sidebar contains 'Questions' and 'Test Cases' tabs. The main area shows a C program for printing a rectangle symbol pattern. The code is as follows:

```
1. #include<stdio.h>
2. int main()
3. {
4.     int N=5,i,j;
5.     for(i=1;i<=N;i++)
6.     {
7.         for(j=1;j<=N;j++)
8.         {
9.             printf("*");
10.        }
11.        printf("\n");
12.    }
13.    return 0;
14. }
```

The right sidebar shows a list of test cases, with CEQ10 selected. The bottom status bar indicates the temperature is 29°C and the date is 04-04-2023.

5.

The screenshot shows the SIMATS C IDE interface. The top bar displays the SIMATS logo and 'Saveetha School of Engineering'. The user's name 'YOGESH KUMAR K' and ID '192225005' are visible in the top right. The left sidebar contains 'Questions' and 'Test Cases' tabs. The main area shows a C program for printing numbers from M to N by skipping K numbers. The code is as follows:

```
1. #include<stdio.h>
2. int main (){
3.     int mat1[2][2]={1,2},{5,3}};
4.     int mat2[2][2]={2,3},{4,1}};
5.     int result[2][2];
6.     for(int i=0;i<2;i++){
7.         for(int j=0;j<2;j++){
8.             result[i][j]=mat1[i][j]+mat2[i][j];
9.         }
10.    }
11.    printf("result:\n");
12.    for(int i=0;i<2;i++){
13.        for(int j=0;j<2;j++){
14.            printf("%d",result[i][j]);
15.        }
16.        printf("\n");
17.    }
18.    return 0;
19. }
```

The right sidebar shows a list of test cases, with CEQ10 selected. The bottom status bar indicates the temperature is 29°C and the date is 04-04-2023.

## 6.

The screenshot shows the SIMAIS C IDE interface. The top bar includes a browser address bar with "172.18.50.8/php\_c/home.php" and navigation icons. Below the browser bar, the "Questions" panel on the left displays "CEQ14. Write a program for matrix multiplication?" with sample input and output. The "Test Cases" panel on the right lists CEQ13 through CEQ18. The main editor area shows a C program for matrix multiplication. The program defines two 2x2 matrices, Mat1 and Mat2, and calculates their product, storing the result in result. The output of the program is displayed in the bottom right panel.

```
1. #include<stdio.h>
2. int main() {
3.     int mat1[2][2] = {{1,2}, {5,3}};
4.     int mat2[2][2] = {{2,3}, {4,1}};
5.     int result[2][2]={{0,0}, {0,0}};
6.     for (int i = 0; i < 2; i++) {
7.         for (int j = 0; j < 2; j++) {
8.             for (int k = 0; k < 2; k++) {
9.                 result[i][j] += mat1[i][k] * mat2[k][j];
10.            }
11.        }
12.    }
13.    printf("result matrix:\n");
14.    for (int i=0; i<2; i++) {
15.        for (int j=0; j<2; j++) {
16.            printf("%d", result[i][j]);
17.        }
18.        printf("\n");
19.    }
20.    return 0;
21. }
```

result matrix:  
10 5  
22 18

## 7.

The screenshot shows the SIMAIS C IDE interface. The top bar includes a browser address bar with "172.18.50.8/php\_c/home.php" and navigation icons. Below the browser bar, the "Questions" panel on the left displays "CEQ14. Write a program for matrix multiplication?" with sample input and output. The "Test Cases" panel on the right lists CEQ13 through CEQ18. The main editor area shows a C program for counting characters in a string. The program defines a character array s and counts the number of alphabets, digits, and special characters in the string. The output of the program is displayed in the bottom right panel.

```
#include<stdio.h>
#include<ctype.h>
int main() {
    char s[100];
    int count_alpha =0, count_digit=0, count_special=0;
    printf("enter a string: ");
    fgets(s,100,stdin);
    for(int i=0; s[i] !='\0'; i++) {
        if (isalpha(s[i]))
            count_alpha++;
        if(isdigit(s[i]))
            count_digit++;
        else if (!isspace(s[i]))
            count_special++;
    }
    printf("number of alphabets:%d\n",count_alpha);
    printf("number of digits:%d\n",count_digit);
    printf("number of special:%d\n",count_special);

    return 0;
}
```

abc!@ 12 cd 1212

enter a string: number of alphabets:0

## 8.

The screenshot shows a web-based IDE with a C program that prints an inverted pyramid. The code is as follows:

```
1. #include<stdio.h>
2. int main() {
3.     int height;
4.     printf("enter the height of the inverted pyramid:\n");
5.     scanf("%d",&height);
6.     for(int i=height; i>=1;i--){
7.         for(int j=height-i;j>=0;j--){
8.             printf(" ");
9.         }
10.        for(int k=2*i-1;k>=0;k--){
11.            printf("*");
12.        }
13.        printf("\n");
14.    }
15.    return 0;
16. }
```

The program's output is shown in a light blue box on the right. It first displays the number '5' in the top white section, which is the input height. Below, in the blue section, it shows the prompt "enter the height of the inverted pyramid:" followed by a series of asterisks forming an inverted pyramid:

```
*****
****
***
**
*
```





