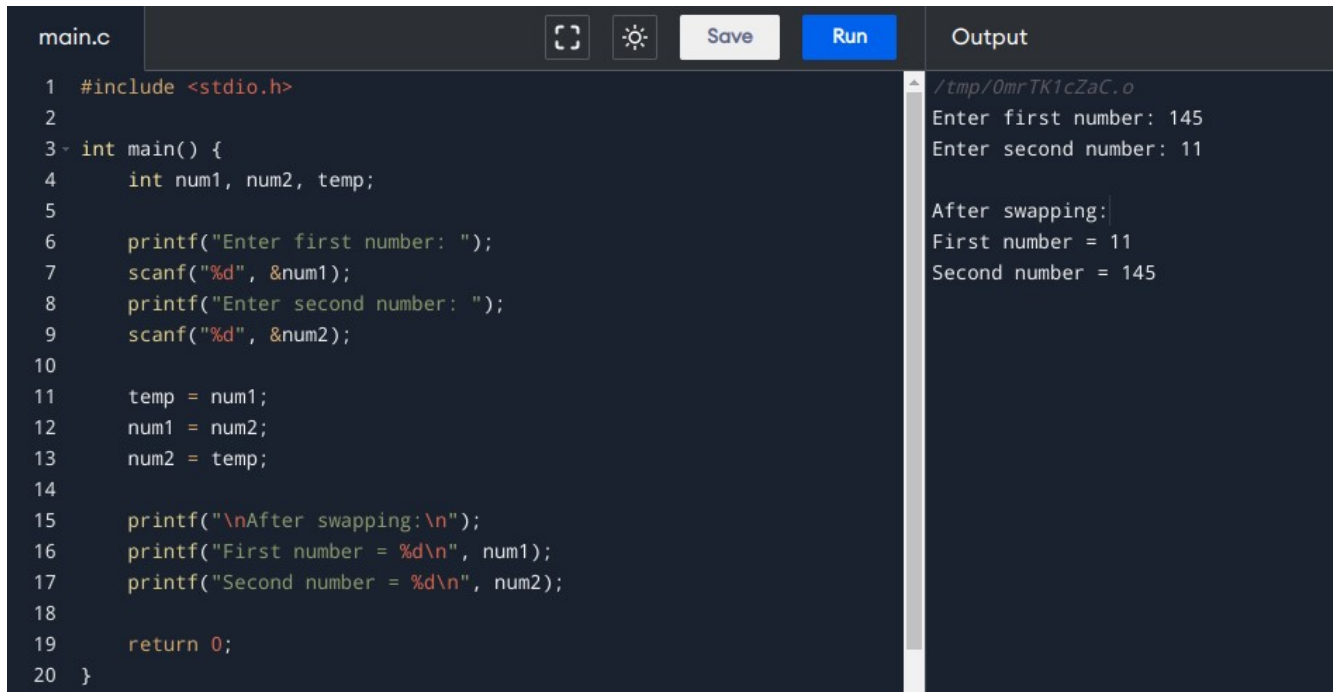


TUTORIALS – 3

(MODULE – 2)

1. Write a C program to swap two numbers using temporary variable



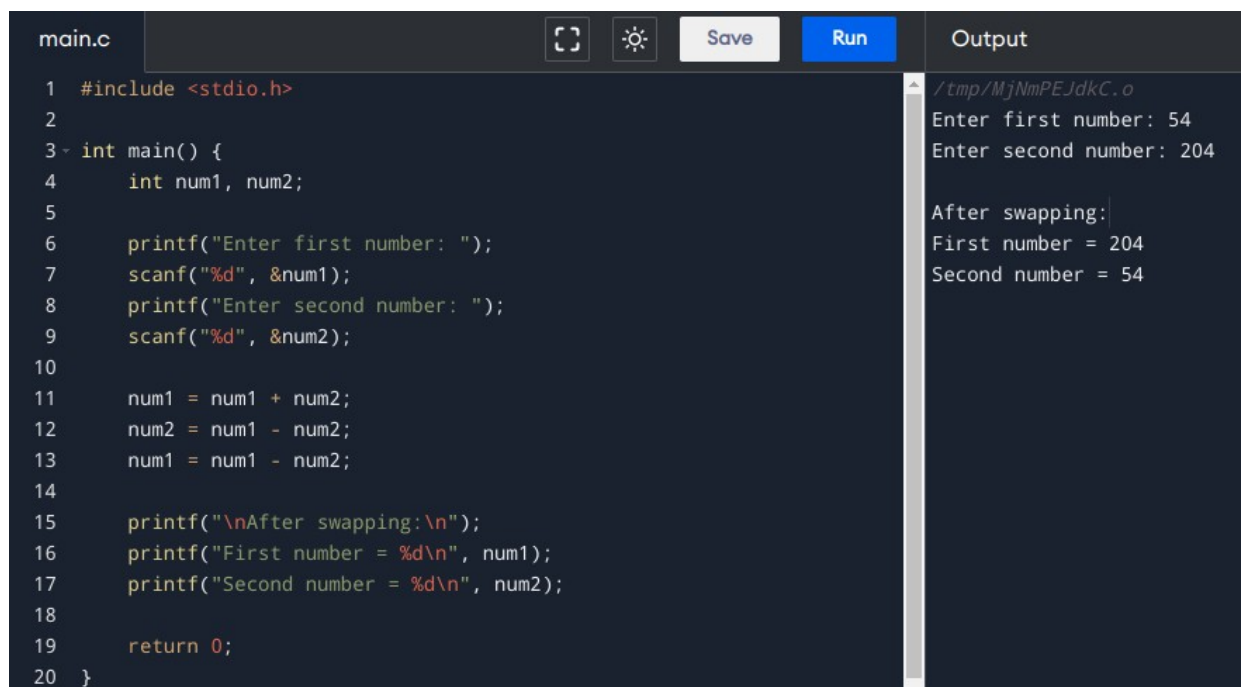
The screenshot shows a C program in a code editor. The code defines a `main` function that takes two integers, `num1` and `num2`, and swaps them using a temporary variable `temp`. The program prompts the user to enter two numbers, reads them, and then prints the values after swapping. The output window shows the execution results.

```
main.c [Icons] [Save] [Run] Output
1 #include <stdio.h>
2
3 int main() {
4     int num1, num2, temp;
5
6     printf("Enter first number: ");
7     scanf("%d", &num1);
8     printf("Enter second number: ");
9     scanf("%d", &num2);
10
11     temp = num1;
12     num1 = num2;
13     num2 = temp;
14
15     printf("\nAfter swapping:\n");
16     printf("First number = %d\n", num1);
17     printf("Second number = %d\n", num2);
18
19     return 0;
20 }
```

Output: /tmp/0mrTK1cZaC.o
Enter first number: 145
Enter second number: 11

After swapping:
First number = 11
Second number = 145

2. swap two numbers without using temporary variable



The screenshot shows a C program in a code editor that swaps two numbers without using a temporary variable. It uses arithmetic operations: the sum of the two numbers is stored in `num1`, then `num2` is calculated as the difference between the sum and the original `num2`, and finally `num1` is calculated as the difference between the sum and the original `num1`. The program prompts the user for two numbers and prints the result after swapping. The output window shows the execution results.

```
main.c [Icons] [Save] [Run] Output
1 #include <stdio.h>
2
3 int main() {
4     int num1, num2;
5
6     printf("Enter first number: ");
7     scanf("%d", &num1);
8     printf("Enter second number: ");
9     scanf("%d", &num2);
10
11     num1 = num1 + num2;
12     num2 = num1 - num2;
13     num1 = num1 - num2;
14
15     printf("\nAfter swapping:\n");
16     printf("First number = %d\n", num1);
17     printf("Second number = %d\n", num2);
18
19     return 0;
20 }
```

Output: /tmp/MjNmPEJdkC.o
Enter first number: 54
Enter second number: 204

After swapping:
First number = 204
Second number = 54

3. program to check whether the given number is even or odd



The screenshot shows a code editor with a C program. The code includes `<stdio.h>`, defines `main()`, declares `int num;`, prompts the user to enter a number, and uses `scanf` to read it. It then checks if the number is even (`num % 2 == 0`) and prints the result. The output shows two test cases: -45 is odd and 44 is even.

```
main.c
1 #include <stdio.h>
2
3 int main() {
4     int num;
5
6     printf("Enter a number: ");
7     scanf("%d", &num);
8
9     if (num % 2 == 0)
10        printf("%d is even.\n", num);
11    else
12        printf("%d is odd.\n", num);
13
14    return 0;
15 }
16
```

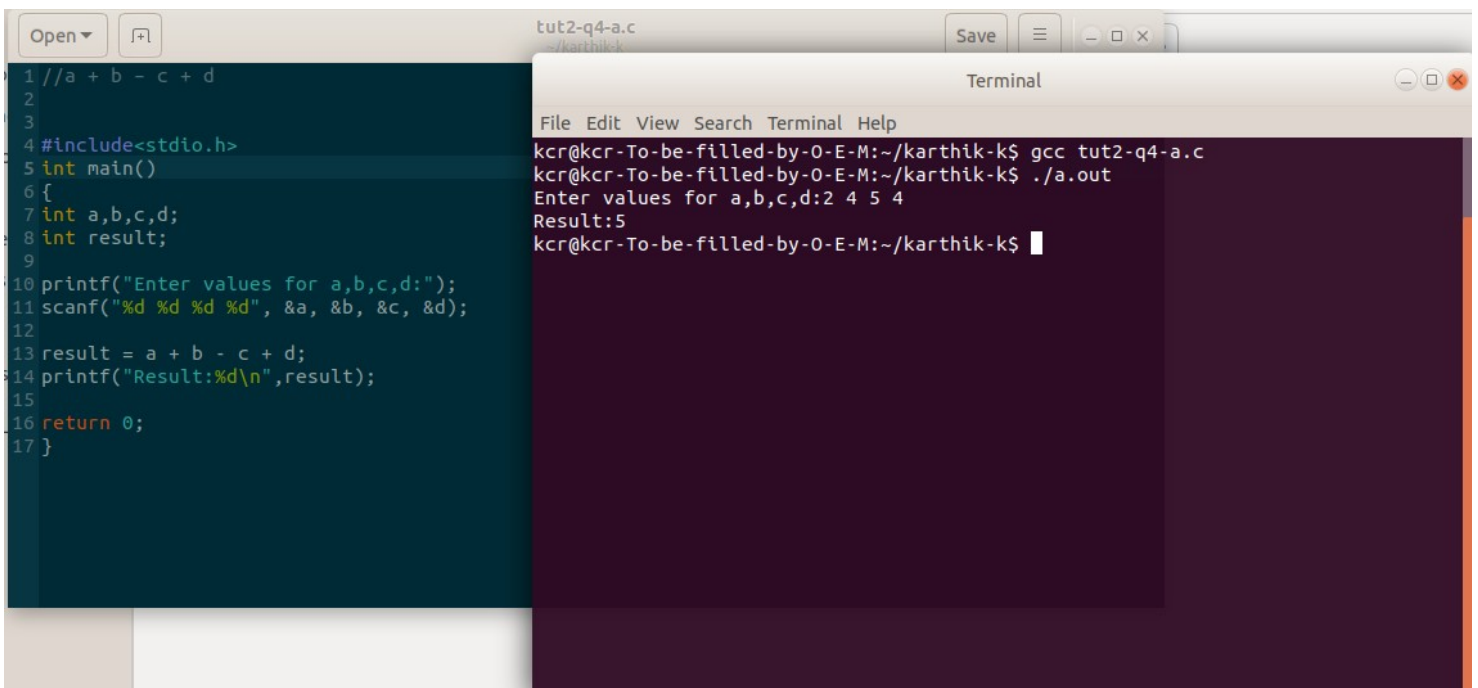
Output

```
/tmp/UMwIHCXaWP.o
Enter a number: -45
-45 is odd.

Output
/tmp/UMwIHCXaWP.o
Enter a number: 44
44 is even.
```

4. Enter integer variables a, b, c, d, and e. evaluate the following expressions:

I. $a + b - c + d$



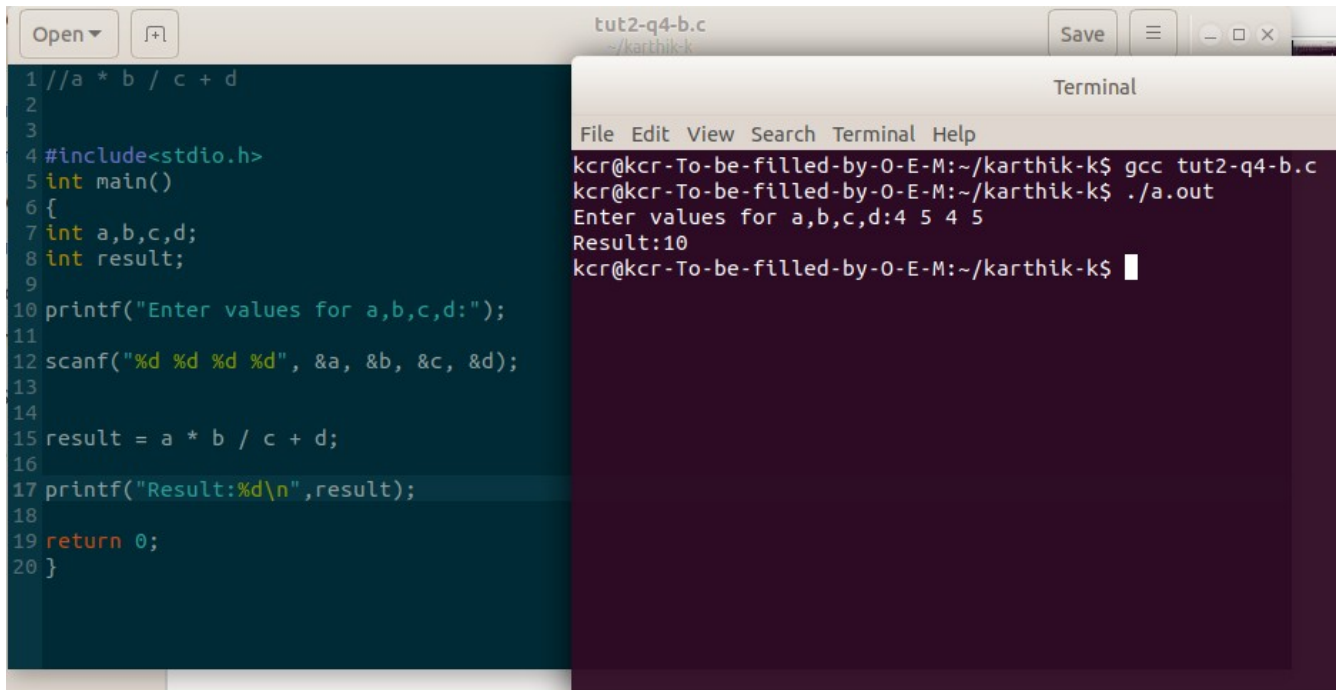
The screenshot shows a code editor with a C program. The code includes `<stdio.h>`, defines `main()`, declares `int a, b, c, d;` and `int result;`, prompts the user to enter values for a, b, c, and d, and calculates the result using `result = a + b - c + d;`. The output shows the result of the calculation for the input values 2, 4, 5, and 4.

```
tut2-q4-a.c
1 //a + b - c + d
2
3
4 #include<stdio.h>
5 int main()
6 {
7     int a,b,c,d;
8     int result;
9
10    printf("Enter values for a,b,c,d:");
11    scanf("%d %d %d %d", &a, &b, &c, &d);
12
13    result = a + b - c + d;
14    printf("Result:%d\n",result);
15
16    return 0;
17 }
```

Terminal

```
kcr@kcr-To-be-filled-by-0-E-M:~/karthik-k$ gcc tut2-q4-a.c
kcr@kcr-To-be-filled-by-0-E-M:~/karthik-k$ ./a.out
Enter values for a,b,c,d:2 4 5 4
Result:5
kcr@kcr-To-be-filled-by-0-E-M:~/karthik-k$
```

II. $a * b / c + d$



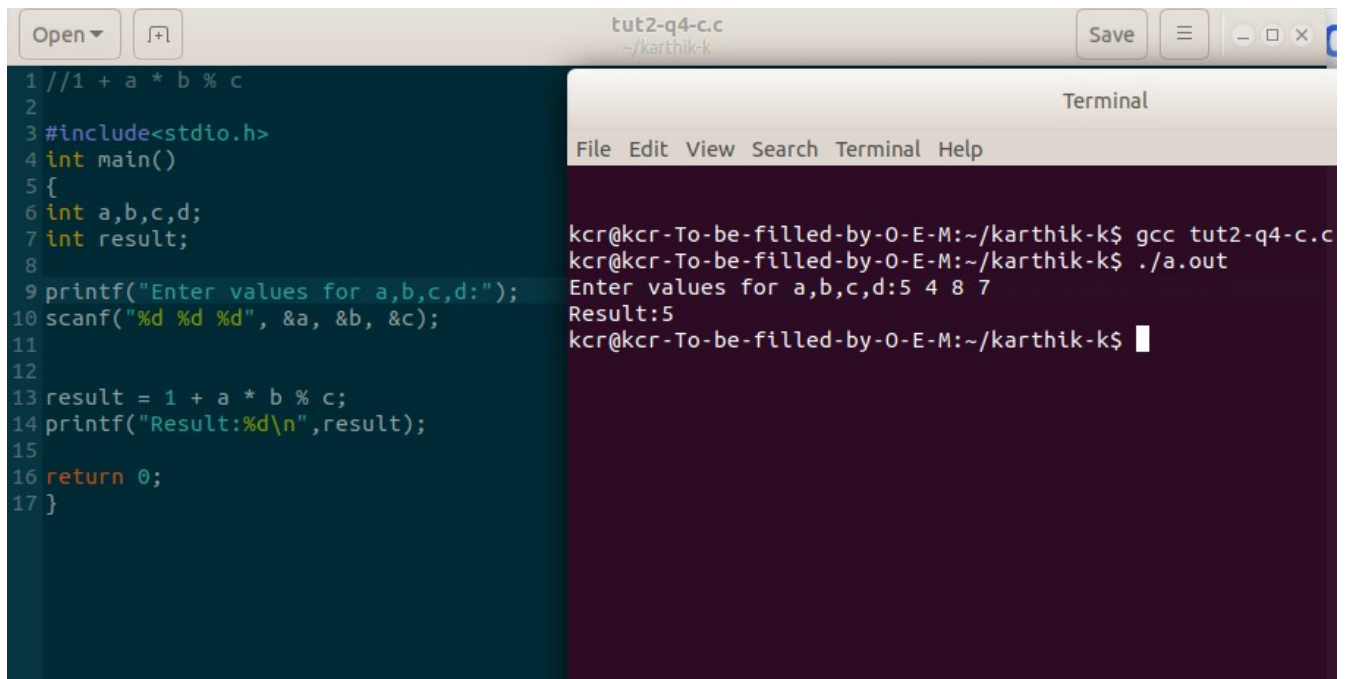
The screenshot shows a code editor window titled 'tut2-q4-b.c' with the following C code:

```
1 //a * b / c + d
2
3
4 #include<stdio.h>
5 int main()
6 {
7     int a,b,c,d;
8     int result;
9
10    printf("Enter values for a,b,c,d:");
11
12    scanf("%d %d %d %d", &a, &b, &c, &d);
13
14
15    result = a * b / c + d;
16
17    printf("Result:%d\n",result);
18
19    return 0;
20 }
```

Overlaid on the code editor is a terminal window titled 'Terminal' with the following output:

```
kcr@kcr-To-be-filled-by-0-E-M:~/karthik-k$ gcc tut2-q4-b.c
kcr@kcr-To-be-filled-by-0-E-M:~/karthik-k$ ./a.out
Enter values for a,b,c,d:4 5 4 5
Result:10
kcr@kcr-To-be-filled-by-0-E-M:~/karthik-k$
```

III. $1 + a * b \% c$



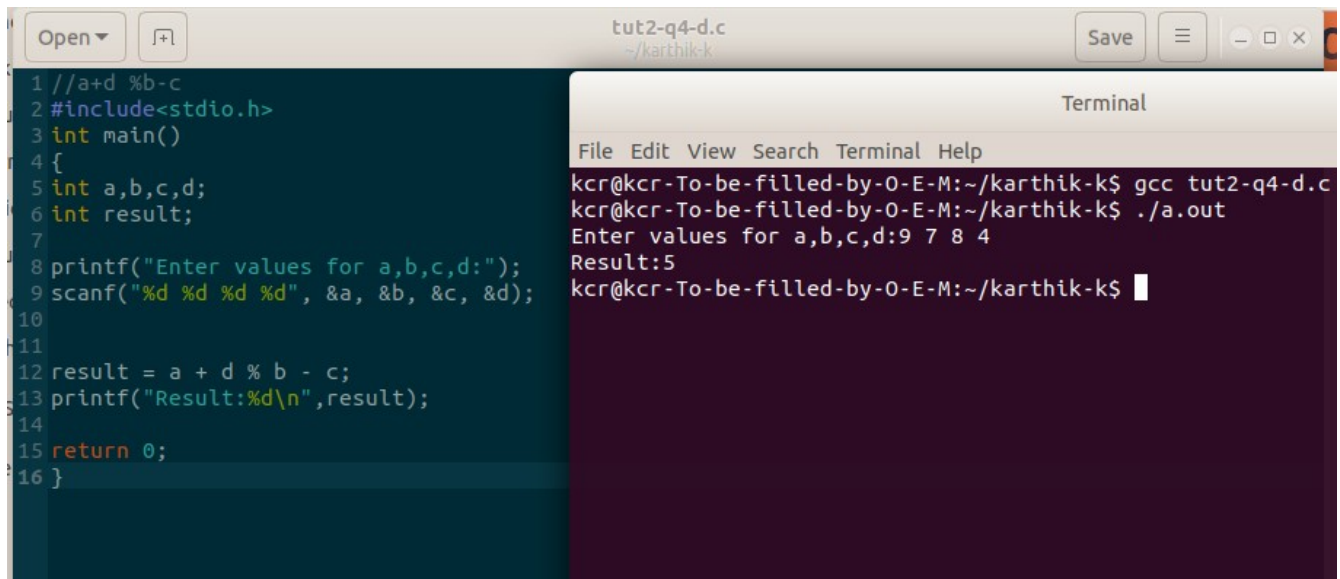
The screenshot shows a code editor window titled 'tut2-q4-c.c' with the following C code:

```
1 //1 + a * b % c
2
3 #include<stdio.h>
4 int main()
5 {
6     int a,b,c,d;
7     int result;
8
9     printf("Enter values for a,b,c,d:");
10    scanf("%d %d %d", &a, &b, &c);
11
12
13    result = 1 + a * b % c;
14    printf("Result:%d\n",result);
15
16    return 0;
17 }
```

Overlaid on the code editor is a terminal window titled 'Terminal' with the following output:

```
kcr@kcr-To-be-filled-by-0-E-M:~/karthik-k$ gcc tut2-q4-c.c
kcr@kcr-To-be-filled-by-0-E-M:~/karthik-k$ ./a.out
Enter values for a,b,c,d:5 4 8 7
Result:5
kcr@kcr-To-be-filled-by-0-E-M:~/karthik-k$
```

IV. a+d %b-c



The image shows a code editor window with a file named `tut2-q4-d.c` and a terminal window. The code editor contains the following C code:

```
1 //a+d %b-c
2 #include<stdio.h>
3 int main()
4 {
5     int a,b,c,d;
6     int result;
7
8     printf("Enter values for a,b,c,d:");
9     scanf("%d %d %d %d", &a, &b, &c, &d);
10
11
12     result = a + d % b - c;
13     printf("Result:%d\n",result);
14
15     return 0;
16 }
```

The terminal window shows the execution of the program:

```
kcr@kcr-To-be-filled-by-0-E-M:~/karthik-k$ gcc tut2-q4-d.c
kcr@kcr-To-be-filled-by-0-E-M:~/karthik-k$ ./a.out
Enter values for a,b,c,d:9 7 8 4
Result:5
kcr@kcr-To-be-filled-by-0-E-M:~/karthik-k$
```