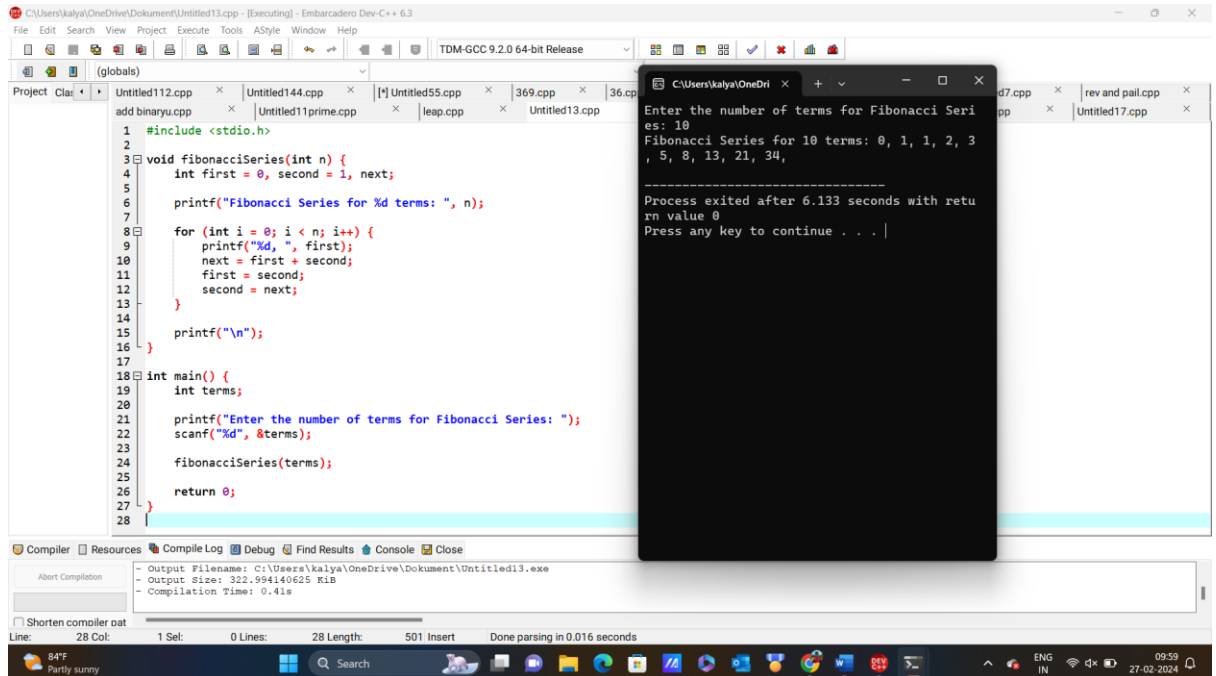


C programming

Day – 5 class test

1. Fibonacci Series



The screenshot displays a C++ IDE with the following code in `Untitled13.cpp`:

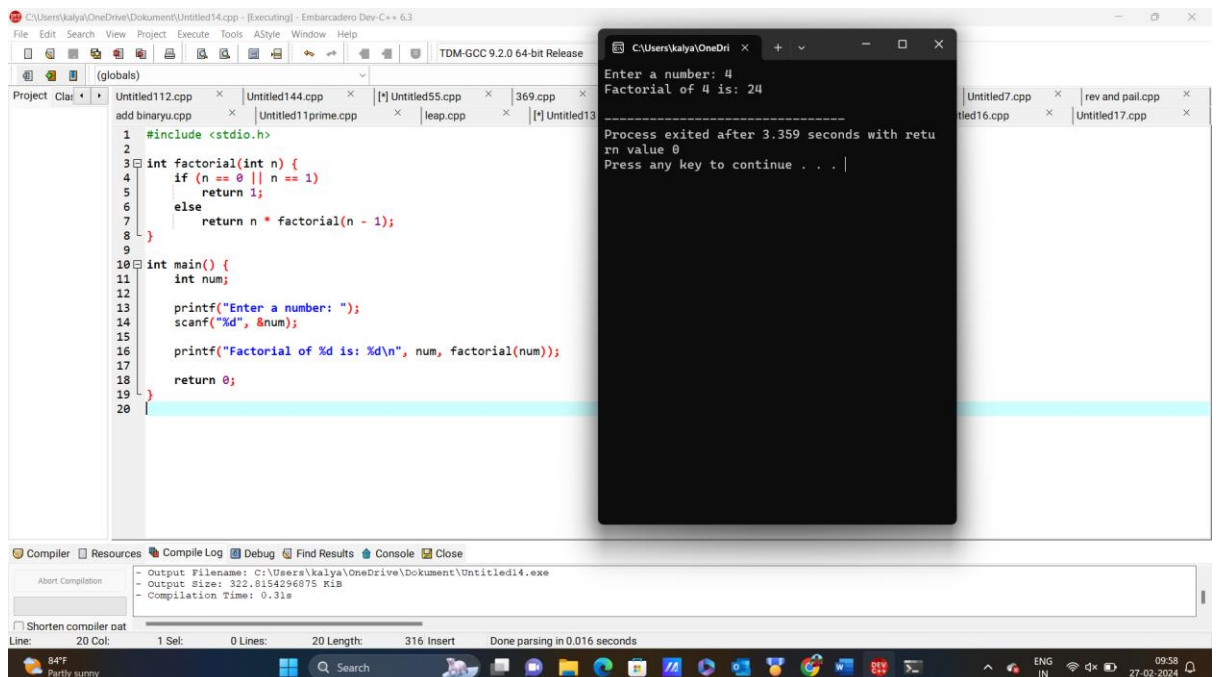
```
1 #include <stdio.h>
2
3 void fibonacciSeries(int n) {
4     int first = 0, second = 1, next;
5
6     printf("Fibonacci Series for %d terms: ", n);
7
8     for (int i = 0; i < n; i++) {
9         printf("%d, ", first);
10        next = first + second;
11        first = second;
12        second = next;
13    }
14
15    printf("\n");
16 }
17
18 int main() {
19     int terms;
20
21     printf("Enter the number of terms for Fibonacci Series: ");
22     scanf("%d", &terms);
23
24     fibonacciSeries(terms);
25
26     return 0;
27 }
28
```

The console output shows the program execution:

```
Enter the number of terms for Fibonacci Series: 10
Fibonacci Series for 10 terms: 0, 1, 1, 2, 3, 5, 8, 13, 21, 34,
-----
Process exited after 6.133 seconds with return value 0
Press any key to continue . . .
```

The IDE status bar indicates the compiler is TDM-GCC 9.2.0 64-bit Release, and the output file is `C:\Users\kalya\OneDrive\Document\Untitled13.exe`.

2. Factorial



The screenshot displays a C++ IDE with the following code in `Untitled14.cpp`:

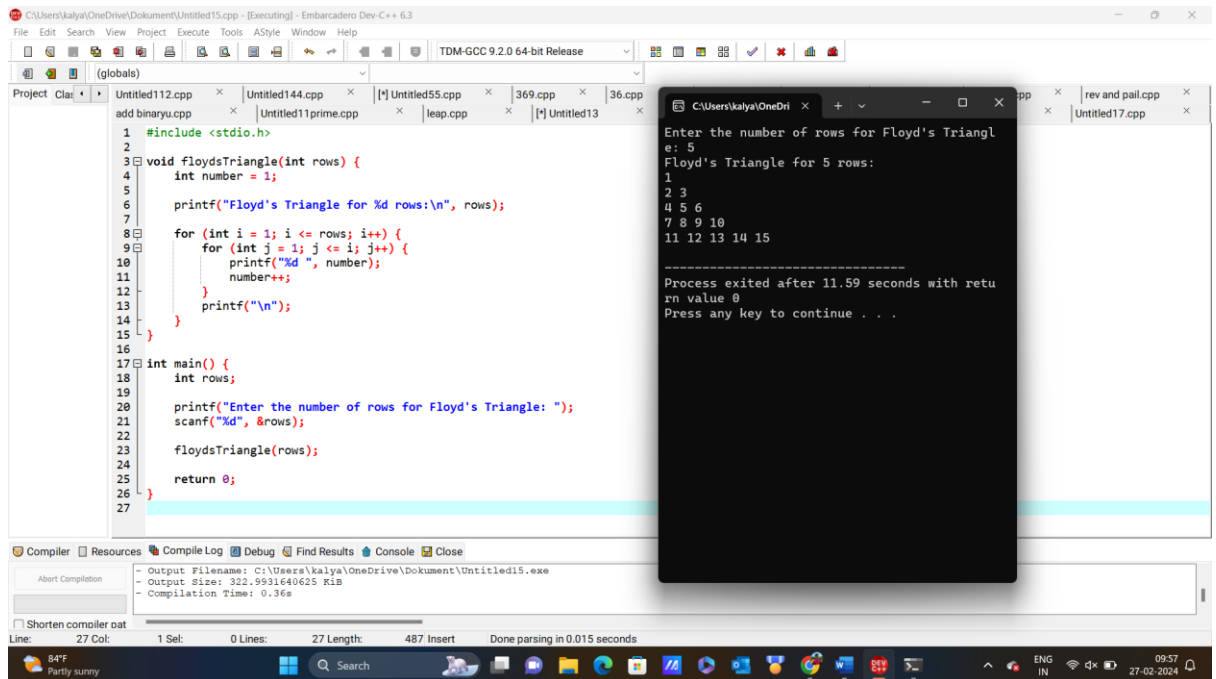
```
1 #include <stdio.h>
2
3 int factorial(int n) {
4     if (n == 0 || n == 1)
5         return 1;
6     else
7         return n * factorial(n - 1);
8 }
9
10 int main() {
11     int num;
12
13     printf("Enter a number: ");
14     scanf("%d", &num);
15
16     printf("Factorial of %d is: %d\n", num, factorial(num));
17
18     return 0;
19 }
20
```

The console output shows the program execution:

```
Enter a number: 4
Factorial of 4 is: 24
-----
Process exited after 3.359 seconds with return value 0
Press any key to continue . . .
```

The IDE status bar indicates the compiler is TDM-GCC 9.2.0 64-bit Release, and the output file is `C:\Users\kalya\OneDrive\Document\Untitled14.exe`.

3. Floyd's Triangle



The screenshot shows an IDE with a C++ file named 'Untitled15.cpp'. The code defines a function `floydsTriangle` that prints Floyd's Triangle for a given number of rows. The main function prompts the user to enter the number of rows, which is 5. The output window shows the resulting triangle and the execution time.

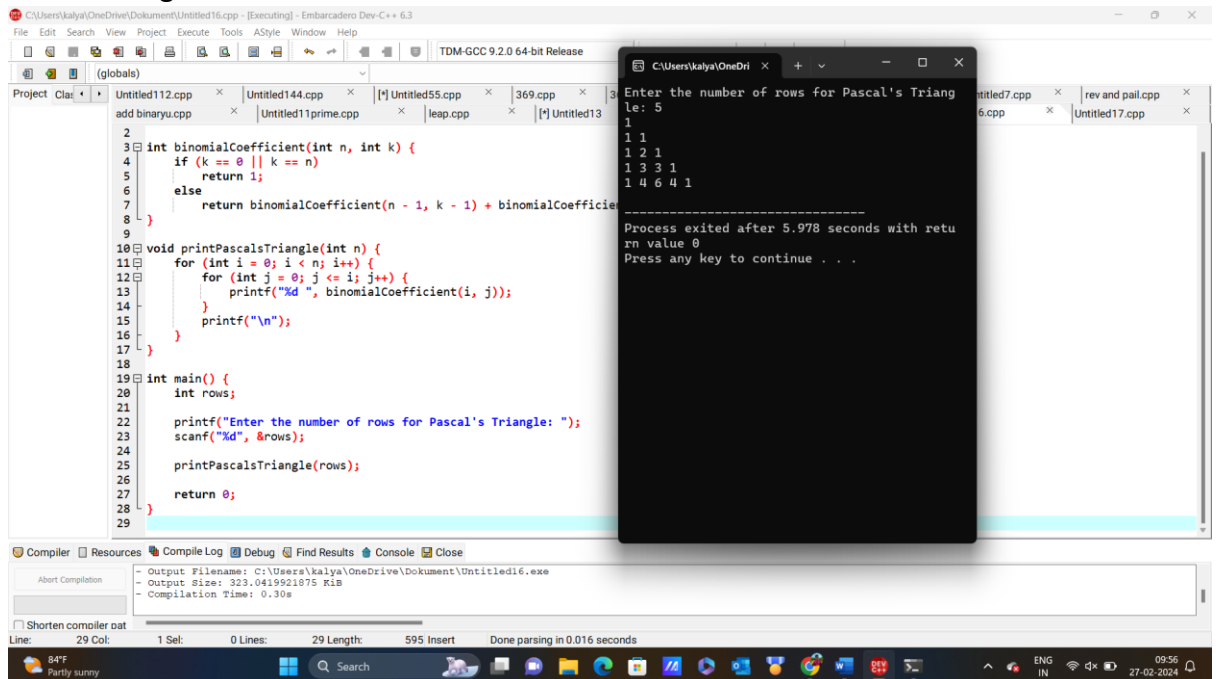
```
1 #include <stdio.h>
2
3 void floydsTriangle(int rows) {
4     int number = 1;
5
6     printf("Floyd's Triangle for %d rows:\n", rows);
7
8     for (int i = 1; i <= rows; i++) {
9         for (int j = 1; j <= i; j++) {
10             printf("%d ", number);
11             number++;
12         }
13         printf("\n");
14     }
15 }
16
17 int main() {
18     int rows;
19
20     printf("Enter the number of rows for Floyd's Triangle: ");
21     scanf("%d", &rows);
22
23     floydsTriangle(rows);
24
25     return 0;
26 }
27
```

Output:

```
Enter the number of rows for Floyd's Triangle: 5
Floyd's Triangle for 5 rows:
1
2 3
4 5 6
7 8 9 10
11 12 13 14 15

Process exited after 11.59 seconds with return value 0
Press any key to continue . . .
```

4. Pascal Triangle



The screenshot shows an IDE with a C++ file named 'Untitled16.cpp'. The code defines a function `printPascalsTriangle` that prints Pascal's Triangle for a given number of rows. The main function prompts the user to enter the number of rows, which is 5. The output window shows the resulting triangle and the execution time.

```
1 int binomialCoefficient(int n, int k) {
2     if (k == 0 || k == n)
3         return 1;
4     else
5         return binomialCoefficient(n - 1, k - 1) + binomialCoefficient(n - 1, k);
6 }
7
8 void printPascalsTriangle(int n) {
9     for (int i = 0; i < n; i++) {
10         for (int j = 0; j <= i; j++) {
11             printf("%d ", binomialCoefficient(i, j));
12         }
13         printf("\n");
14     }
15 }
16
17 int main() {
18     int rows;
19
20     printf("Enter the number of rows for Pascal's Triangle: ");
21     scanf("%d", &rows);
22
23     printPascalsTriangle(rows);
24
25     return 0;
26 }
27
```

Output:

```
Enter the number of rows for Pascal's Triangle: 5
1
1 1
1 2 1
1 3 3 1
1 4 6 4 1

Process exited after 5.978 seconds with return value 0
Press any key to continue . . .
```

5. A star pattern is a pattern that shows up as a staircase of stars.

The screenshot shows a C++ IDE with the following code in the editor:

```
1 #include <stdio.h>
2
3 void printStarPattern(int n) {
4     for (int i = 1; i <= n; i++) {
5         for (int j = 1; j <= i; j++) {
6             printf("* ");
7         }
8         printf("\n");
9     }
10 }
11
12 int main() {
13     int steps;
14
15     printf("Enter the number of steps for the star pattern: ");
16     scanf("%d", &steps);
17
18     printStarPattern(steps);
19
20     return 0;
21 }
22
```

The output window shows the following text:

```
Enter the number of steps for the star pattern: 5
* 
* * 
* * * 
* * * * 
* * * * * 

-----
Process exited after 8.013 seconds with return value 0
Press any key to continue . . .
```

The IDE interface includes a menu bar (File, Edit, Search, View, Project, Execute, Tools, AStyle, Window, Help), a toolbar, a project explorer, and a compiler output window at the bottom showing compilation details.