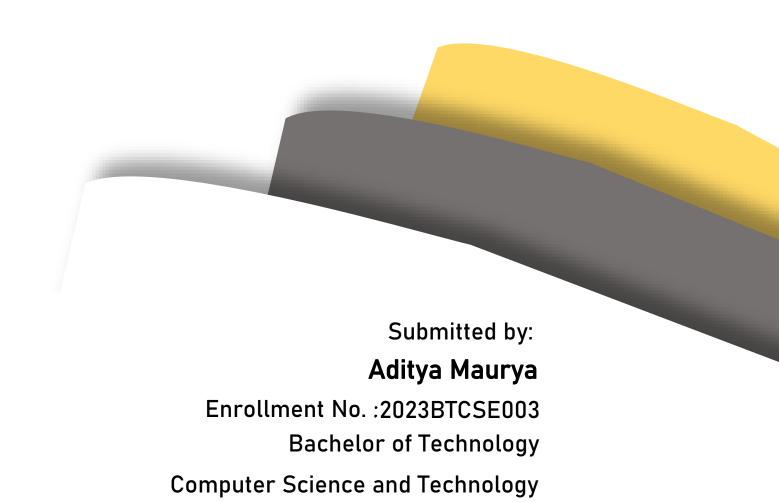
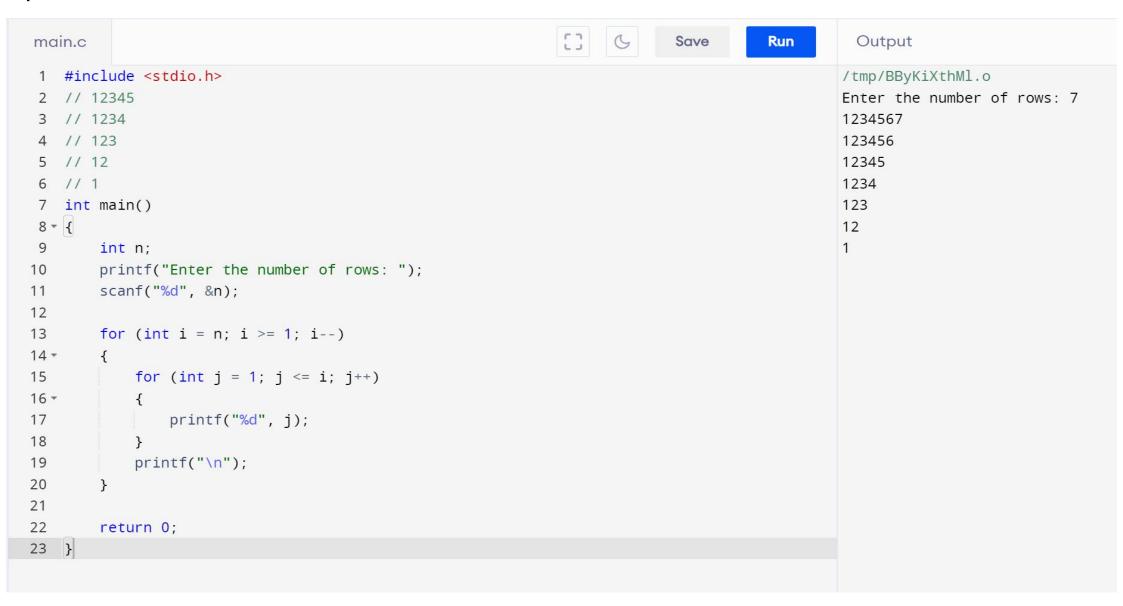


## PROGRAMMING ASSIGNMENT

# COUSE NAME: INTRODUCTION TO PROGRAMMING



Q.1. Write a C program to print the following pattern for N number of rows given by user 12345



Q.1. Write a C program to print the following pattern for N number of rows given by user

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

\*\*\*\*

```
Save
                                                                                                   Output
main.c
                                                                                        Run
   #include <stdio.h>
                                                                                                 /tmp/ZKw0qnYQjN.o
                                                                                                 Enter the number of rows: 7
                                                                                                       **
                                                                                                      ***
                                                                                                     ****
 7 int main()
8 * {
 9
        int n;
        printf("Enter the number of rows: ");
                                                                                                 *****
10
11
        scanf("%d", &n);
12
13
        for (int i = 0; i \le n; i++)
14 +
            for (int j = 1; j \le (n - i); j++)
15
16 *
                printf(" ");
17
18
            for (int k = 0; k \le i; k++)
19
20 -
                printf("*");
21
22
23
            printf("\n");
24
25
26
        return 0;
27 }
```

Q.1. Write a C program to print the following pattern:
1
234
56789

```
main.c
                                                                           Save
                                                                                      Run
                                                                                                 Output
 1 #include <stdio.h>
                                                                                               /tmp/5TrO4CsT31.o
   // 234
                                                                                                234
    // 5 6 7 8 9
                                                                                               56789
   int main()
        int count = 1;
 7
 9
        for (int i = 1; i \le 3; i++)
10 -
            for (int j = 0; j \le (2 - i); j++)
11
12 *
                printf(" ");
13
14
15
            for (int k = 1; k \le (2 * i - 1); k++)
            {
16 *
                printf("%d", count++);
17
18
19
20
            printf("\n");
21
        }
22
23
        return 0;
24 }
```

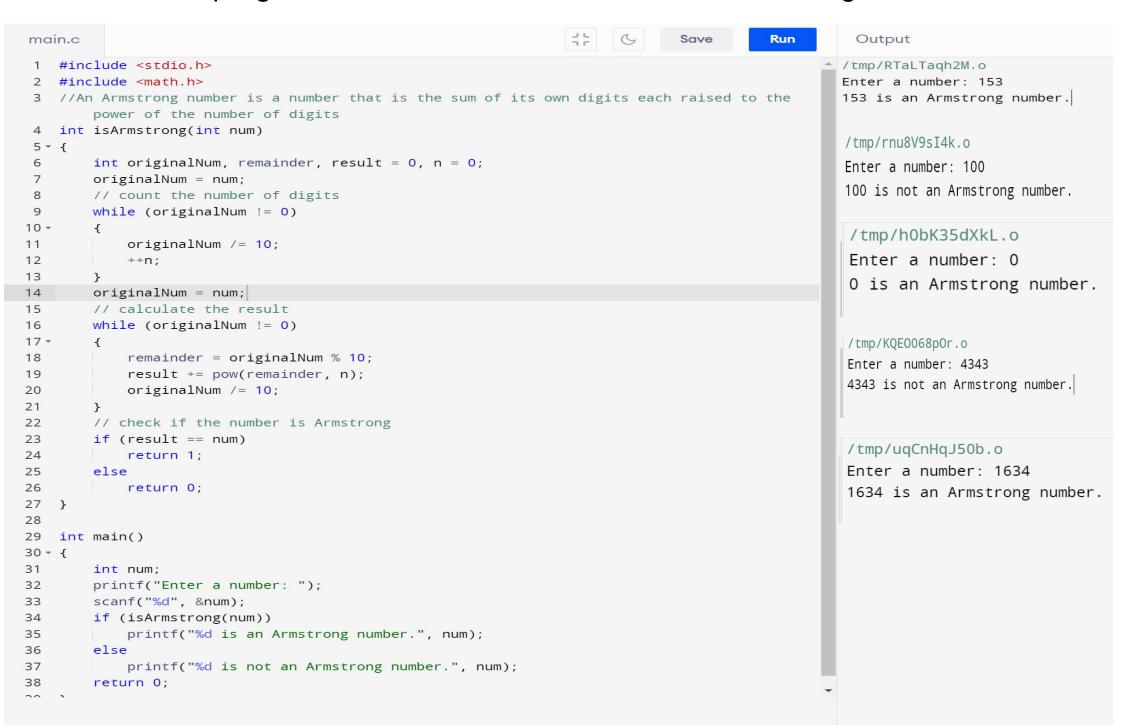
#### Q.2. Write a C program to check whether a number is palindrome or not.

```
Output
main.c
                                                                           Save
                                                                                       Run
 1 #include <stdio.h>
                                                                                               /tmp/xt0U9zWMe0.o
 2 //A palindrome is a number that is the same when reversed
                                                                                               Enter a number: 1536654
 3 * int isPalindrome(int num) {
                                                                                               1536654 is not a palindrome.
        int reversedNum = 0, originalNum = num;
                                                                                                /tmp/F4z6E9xZjX.o
 5
        while (num != 0) {
 6 *
                                                                                                Enter a number: 12321
 7
            int remainder = num % 10;
                                                                                                12321 is a palindrome.
            reversedNum = reversedNum * 10 + remainder;
            num /= 10;
10
        }
11
        if (originalNum == reversedNum) {
12 +
            return 1; // Palindrome
13
        } else {
14 +
            return 0; // Not a palindrome
15
16
        }
17 }
18
19 - int main() {
20
        int num;
21
22
        printf("Enter a number: ");
        scanf("%d", &num);
23
24
        if (isPalindrome(num)) {
25 -
            printf("%d is a palindrome.\n", num);
26
27 -
        } else {
            printf("%d is not a palindrome.\n", num);
28
29
        }
30
31
        return 0;
32 }
```

#### Q.3. Write a C program to find sum of first and last digit of a number.

```
Output
main.c
                                                                            Save
                                                                                       Run
   #include <stdio.h>
                                                                                                /tmp/dFJ5mFBS6H.o
                                                                                                Enter a number: 234234
   int main()
                                                                                                Sum of first and last digit: 6
 4 * {
        int number, firstDigit, lastDigit, sum;
                                                                                                /tmp/lvRpnkvrDZ.o
                                                                                                Enter a number: 0
        printf("Enter a number: ");
                                                                                                Sum of first and last digit: 0
        scanf("%d", &number);
                                                                                                /tmp/5dD0aokElB.o
        // Extracting the first digit
10
                                                                                                Enter a number: 7
                                                                                                Sum of first and last digit: 14
        firstDigit = number;
11
12
        while (firstDigit >= 10)
13 -
        {
                                                                                                 /tmp/im2aQyMIeJ.o
                                                                                                 Enter a number: 100
14
            firstDigit /= 10;
                                                                                                 Sum of first and last digit: 1
15
        }
16
17
        // Extracting the last digit
        lastDigit = number % 10;
18
19
        // Calculate the sum
20
        sum = firstDigit + lastDigit;
21
22
        printf("Sum of first and last digit: %d\n", sum);
23
24
25
        return 0;
26 }
```

#### Q.4. Write a C program to check whether a number is Armstrong number or not.



#### Q.5. Write a C program to calculate product of digits of a number.

```
main.c
                                                                          Save
                                                                                    Run
                                                                                              Output
   #include <stdio.h>
                                                                                             /tmp/jtiIw6Z0ba.o
                                                                                             Enter a number: 432
 3 • int main() {
                                                                                             Product of digits: 24
        int number, product = 1;
                                                                                              /tmp/dhvo3TW50Z.o
        printf("Enter a number: ");
                                                                                              Enter a number: 9
        scanf("%d", &number);
                                                                                              Product of digits: 9
        while (number != 0) {
 9 +
                                                                                              /tmp/3nKXaUMPom.o
           int digit = number % 10;
10
                                                                                              Enter a number: 3230
           product *= digit;
                                                                                              Product of digits: 0
11
12
           number /= 10;
13
        }
14
        printf("Product of digits: %d\n", product);
15
16
17
        return 0;
18 }
```

#### Q.6. Write a C Program to print following pattern:

#### 1:

```
Output
main.c
                                                                         Save
                                                                                    Run
 1 #include <stdio.h>
                                                                                             /tmp/kUqF0knHty.o
 2 int main()
                                                                                             Enter number of rows :7
3 * {
                                                                                                 ***
4
       int n, j, i;
 5
       printf("Enter number of rows :");
                                                                                                ****
                                                                                               ******
        scanf("%d", &n);
 6
7
       for (i = 1; i \le n; i++)
                                                                                               ******
                                                                                              ******
 8 +
 9
           for (j = 1; j \le n - i; j++)
                                                                                             ********
               printf(" ");
                                                                                              *******
10
                                                                                               ******
11
          for (j = 1; j \le 2 * i - 1; j++)
                                                                                               ******
12
               printf("*");
                                                                                                 ****
13
                                                                                                 ***
14
            printf("\n");
15
16
17
       for (i = 1; i \le n - 1; i++)
18 *
           for (j = 1; j \le i; j++)
19
               printf(" ");
20
21
22
           for (j = 1; j \le 2 * (n - i) - 1; j++)
               printf("*");
23
24
25
            printf("\n");
26
27
        return 0;
28 }
```

```
main.c
                                                                          Save
                                                                                     Run
                                                                                               Output
                                                                                              /tmp/hC3G8IJiwa.o
1 #include <stdio.h>
2 int main()
                                                                                              Enter value of n : 10
                                                                                                       ******
3 * {
       int i, j, n;
                                                                                                      ******
 4
        printf("Enter value of n : ");
                                                                                                     ******
 6
        scanf("%d", &n);
                                                                                                    ******
                                                                                                   *****
                                                                                                  ****
 8
        for(i=1; i<n; i++)</pre>
                                                                                                 ****
9 +
10
           for(j=1; j<=(n-i); j++)
11 -
12
                printf(" ");
13
14
           for(j=i; j<=n; j++)</pre>
                                                                                                ***
                                                                                                 ****
15 +
                                                                                                  ****
                printf("*");
16
                                                                                                   *****
17
            printf("\n");
                                                                                                    *****
18
19
                                                                                                     *****
       for(i=1; i<=n; i++)
                                                                                                      ******
20
                                                                                                       *****
21 -
            for(j=1; j<i; j++)
22
23 *
24
                printf(" ");
25
           for(j=1; j<=i; j++)
26
27 -
           {
28
                printf("*");
29
           printf("\n");
30
31
32
        return 0;
33 }
```

### **III**:

```
[] Save
main.c
                                                                                 Run
                                                                                           Output
 1 #include <stdio.h>
                                                                                         /tmp/YBgcSdBCKC.o
                                                                                         Enter the number of lines: 7
 3 * int main() {
       int numLines;
                                                                                         10
       printf("Enter the number of lines: ");
                                                                                         101
       scanf("%d", &numLines);
                                                                                         1010
 6
                                                                                         10101
       for (int i = 1; i <= numLines; i++) {</pre>
8 *
                                                                                         101010
           for (int j = 1; j \le i; j++) {
9 +
                                                                                         1010101
           if (j % 2 == 0) {
10 -
11
              printf("0");
12 *
              } else {
13
                   printf("1");
14
              }
15
16
           printf("\n");
17
18
19
       return 0;
20 }
21
```