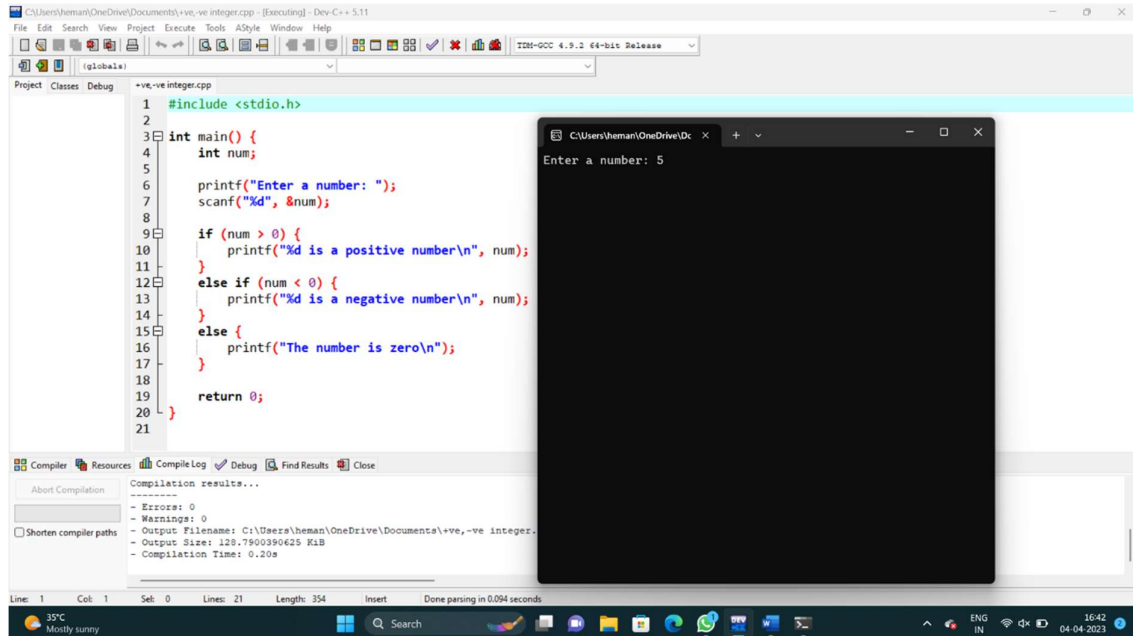


Assignment – 1 (Control Statements and Loops)

1. Write a C program to check positive, negative or zero using simple if or if else. C program to input any number from user and check whether the given number is positive, negative or zero. Logic to check negative, positive or zero in C programming.



```
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 > 0) {
10        printf("%d is a positive number\n", num);
11    }
12    else if (num < 0) {
13        printf("%d is a negative number\n", num);
14    }
15    else {
16        printf("The number is zero\n");
17    }
18
19    return 0;
20 }
```

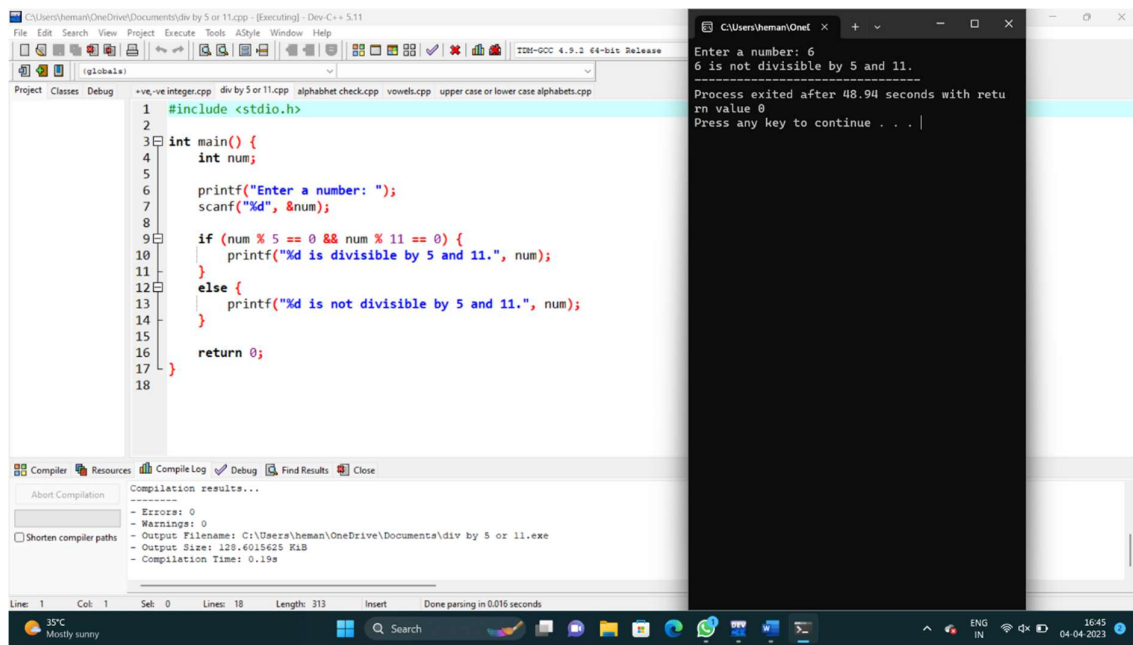
Compilation results...

- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\heman\OneDrive\Documents\+ve,-ve integer.
- Output Size: 128.7900390425 KiB
- Compilation Time: 0.20s

Enter a number: 5

5 is a positive number

2. Write a C program to check whether a number is divisible by 5 and 11 or not using if else. How to check divisibility of any number in C programming. C program to enter any number and check whether it is divisible by 5 and 11 or not. Logic to check divisibility of a number in C program.



```
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 % 5 == 0 && num % 11 == 0) {
10        printf("%d is divisible by 5 and 11.", num);
11    }
12    else {
13        printf("%d is not divisible by 5 and 11.", num);
14    }
15
16    return 0;
17 }
```

Compilation results...

- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\heman\OneDrive\Documents\div by 5 or 11.exe
- Output Size: 128.6015625 KiB
- Compilation Time: 0.19s

Enter a number: 6

6 is not divisible by 5 and 11.

Process exited after 48.94 seconds with return value 0

Press any key to continue . . .

3. Write a C program to input a character from user and check whether the given character is alphabet or not using if else. How to check whether a character is alphabet or not in C

programming. Logic to check if a character is alphabet or not in C program.

```
1 #include <stdio.h>
2
3 int main() {
4     char c;
5
6     printf("Enter a character: ");
7     scanf("%c", &c);
8
9     if ((c >= 'a' && c <= 'z') || (c >= 'A' && c <= 'Z')) {
10         printf("%c is an alphabet.", c);
11     } else {
12         printf("%c is not an alphabet.", c);
13     }
14
15     return 0;
16 }
```

Compilation results...

- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\hemant\OneDrive\Documents\alphabet check.exe
- Output Size: 128.62109375 KiB
- Compilation Time: 0.20s

Process exited after 8.567 seconds with return value 0
Press any key to continue . . .

4. Write a C program to count the Vowels in the given string.

```
1 #include <stdio.h>
2 #include <string.h>
3
4 int main() {
5     char string[100];
6     int i, vowels = 0;
7
8     printf("Enter a string: ");
9     fgets(string, 100, stdin); // read the string from user input
10
11     for (i = 0; i < strlen(string); i++) {
12         if (string[i] == 'a' || string[i] == 'e' || string[i] == 'i' || string[i] == 'o' || string[i] == 'u' ||
13             string[i] == 'A' || string[i] == 'E' || string[i] == 'I' || string[i] == 'O' || string[i] == 'U') {
14             vowels++;
15         }
16     }
17
18     printf("The number of vowels in the string is: %d\n", vowels);
19
20     return 0;
21 }
```

Compilation results...

- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\hemant\OneDrive\Documents\vowels.exe
- Output Size: 128.6015625 KiB
- Compilation Time: 0.20s

Process exited after 54.01 seconds with return value 0
Press any key to continue . . .

5. Write a C program to input character from user and check whether character is uppercase or lowercase alphabet using if else. How to check uppercase and lowercase using if else

in C programming. Logic to check uppercase and lowercase alphabets in C program.

```

1 #include <stdio.h>
2
3 int main() {
4     char ch;
5
6     printf("Enter a character: ");
7     scanf("%c", &ch);
8
9     if (ch >= 'A' && ch <= 'Z') {
10        printf("%c is an uppercase alphabet\n", ch);
11    }
12    else if (ch >= 'a' && ch <= 'z') {
13        printf("%c is a lowercase alphabet\n", ch);
14    }
15    else {
16        printf("%c is not an alphabet\n", ch);
17    }
18
19    return 0;
20 }
21

```

Compilation results...

- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\heman\OneDrive\Documents\upper case or lower case alphabets.cpp
- Output Size: 128.639648475 KiB
- Compilation Time: 0.19s

Process exited after 16.22 seconds with return value 0
Press any key to continue . . .

- Write a C program to input amount from user and print minimum number of notes (Rs. 500, 100, 50, 20, 10, 5, 2, 1) required for the amount. How to the minimum number of notes required for the given amount in C programming. Program to find minimum number of notes required for the given denomination. Logic to find minimum number of denomination for a given amount in C program.

```

1 #include <stdio.h>
2
3 int main() {
4     int amount, notes;
5     int denominations[] = {500, 100, 50, 20, 10, 5, 2, 1};
6     int num_notes[sizeof(denominations)/sizeof(denominations[0])];
7
8     printf("Enter the amount: ");
9     scanf("%d", &amount);
10
11    // initialize all the number of notes to 0
12    for (int i = 0; i < sizeof(num_notes)/sizeof(num_notes[0]); i++) {
13        num_notes[i] = 0;
14    }
15
16    // calculate the minimum number of notes required for each denomination
17    for (int i = 0; i < sizeof(denominations)/sizeof(denominations[0]); i++) {
18        notes = amount / denominations[i];
19        amount = amount % denominations[i];
20        num_notes[i] = notes;
21    }
22
23    // print the minimum number of notes required for each denomination
24    printf("Minimum number of notes required for the given amount:\n");
25    for (int i = 0; i < sizeof(denominations)/sizeof(denominations[0]); i++) {
26        if (num_notes[i] > 0) {
27            printf("%d x Rs %d notes\n", num_notes[i], denominations[i]);
28        }
29    }
30
31    return 0;
32 }
33

```

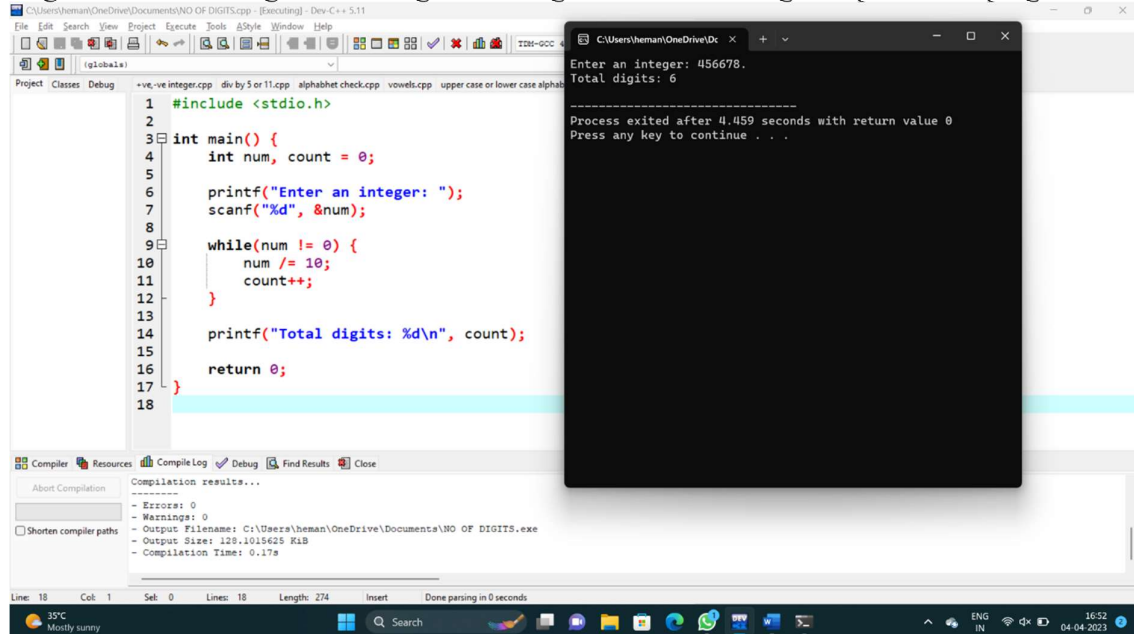
Compilation results...

- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\heman\OneDrive\Documents\DENOMINATION.exe
- Output Size: 128.7705078125 KiB
- Compilation Time: 0.22s

Process exited after 13.85 seconds with return value 0
Press any key to continue . . .

- Write a C program to input a number from user and count number of digits in the given integer using loop. How to find total digits in a given integer using loop in C programming.

Logic to count digits in a given integer without using loop in C program.

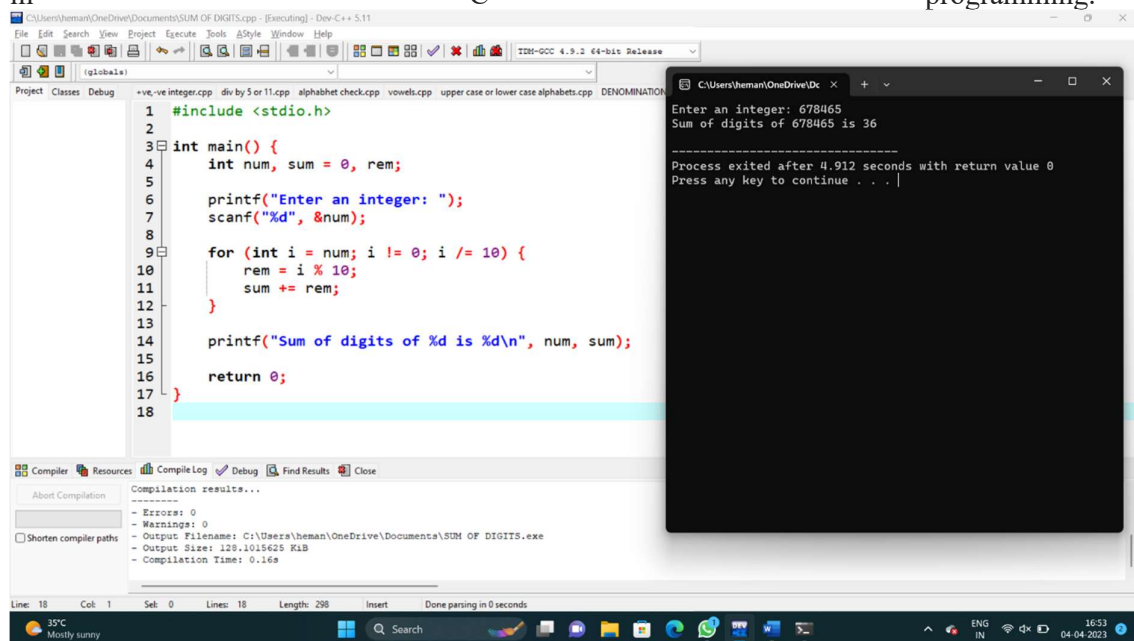


```
1 #include <stdio.h>
2
3 int main() {
4     int num, count = 0;
5
6     printf("Enter an integer: ");
7     scanf("%d", &num);
8
9     while(num != 0) {
10        num /= 10;
11        count++;
12    }
13
14    printf("Total digits: %d\n", count);
15
16    return 0;
17 }
18
```

Enter an integer: 456678.
Total digits: 6

Process exited after 4.459 seconds with return value 0
Press any key to continue . . .

8. Write a C program to input a number and calculate sum of digits using for loop. How to find sum of digits of a number in C program. Logic to find sum of digits of a given number in C programming.



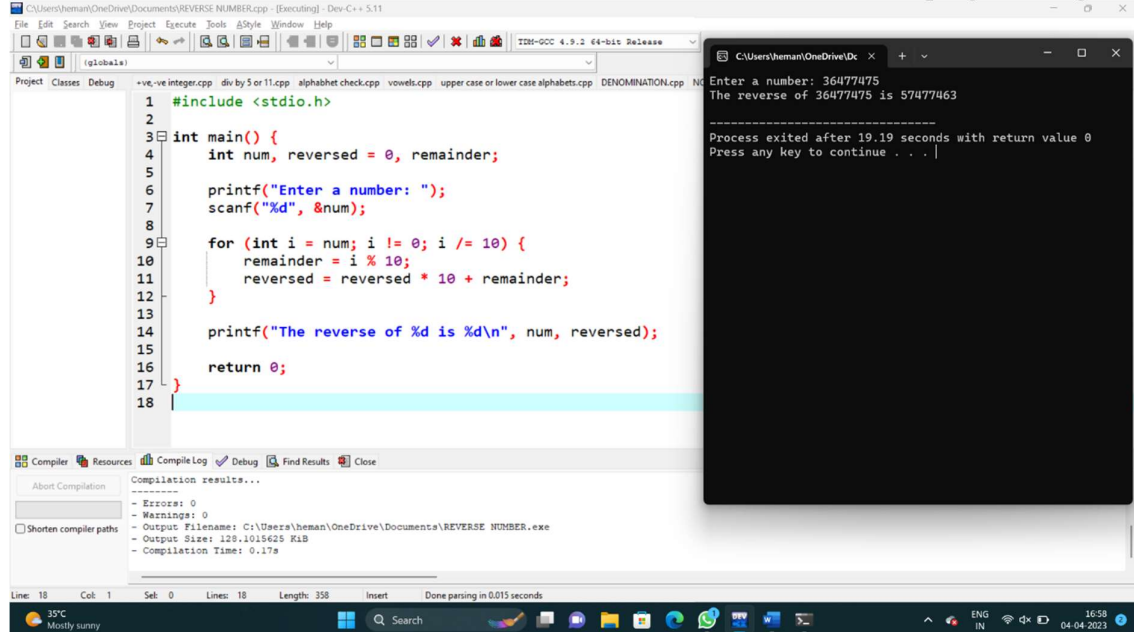
```
1 #include <stdio.h>
2
3 int main() {
4     int num, sum = 0, rem;
5
6     printf("Enter an integer: ");
7     scanf("%d", &num);
8
9     for (int i = num; i != 0; i /= 10) {
10        rem = i % 10;
11        sum += rem;
12    }
13
14    printf("Sum of digits of %d is %d\n", num, sum);
15
16    return 0;
17 }
18
```

Enter an integer: 678465
Sum of digits of 678465 is 36

Process exited after 4.912 seconds with return value 0
Press any key to continue . . .

9. Write a C program to input a number from user and find reverse of the given number using for loop. How to find reverse of any number using loop in C program. Logic to find reverse

of a number in C programming.

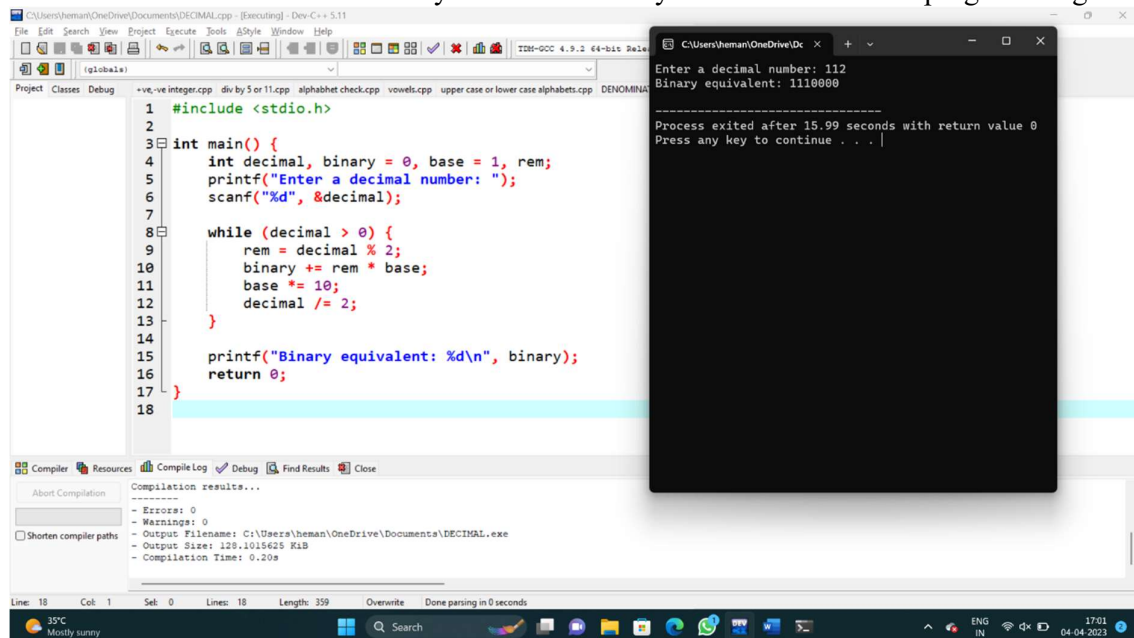


```
1 #include <stdio.h>
2
3 int main() {
4     int num, reversed = 0, remainder;
5
6     printf("Enter a number: ");
7     scanf("%d", &num);
8
9     for (int i = num; i != 0; i /= 10) {
10        remainder = i % 10;
11        reversed = reversed * 10 + remainder;
12    }
13
14    printf("The reverse of %d is %d\n", num, reversed);
15
16    return 0;
17 }
18
```

Enter a number: 36477475
The reverse of 36477475 is 57477463

Process exited after 19.19 seconds with return value 0
Press any key to continue . . .

10. Write a C program to input decimal number from user and convert to binary number system. How to convert from decimal number to binary number system in C program. Logic to convert decimal to binary number system in C programming.



```
1 #include <stdio.h>
2
3 int main() {
4     int decimal, binary = 0, base = 1, rem;
5     printf("Enter a decimal number: ");
6     scanf("%d", &decimal);
7
8     while (decimal > 0) {
9         rem = decimal % 2;
10        binary += rem * base;
11        base *= 10;
12        decimal /= 2;
13    }
14
15    printf("Binary equivalent: %d\n", binary);
16
17    return 0;
18 }
19
```

Enter a decimal number: 112
Binary equivalent: 1110000

Process exited after 15.99 seconds with return value 0
Press any key to continue . . .