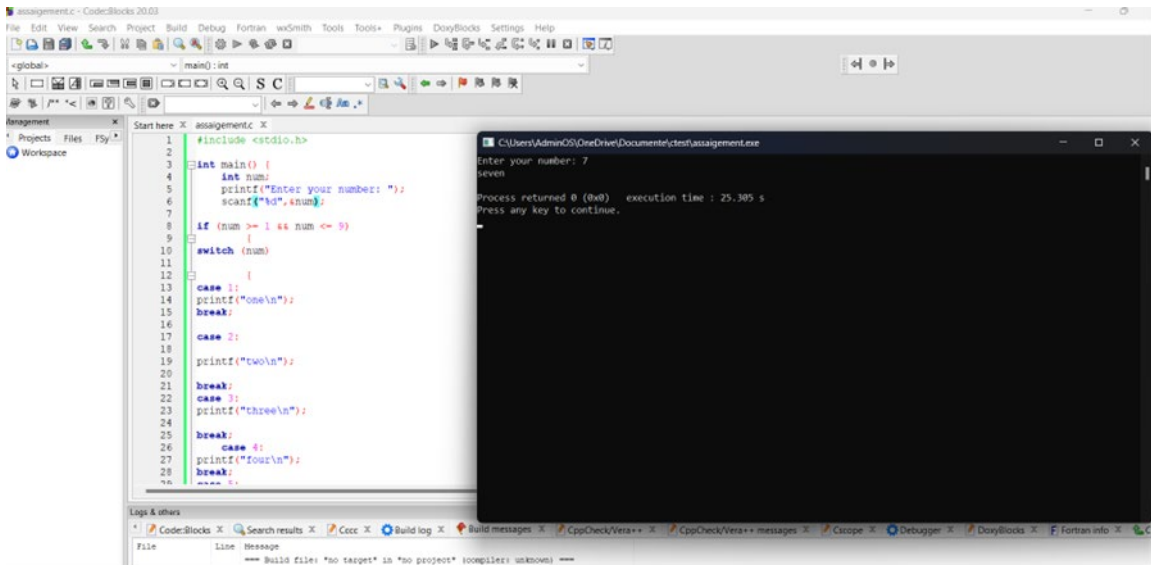


# Week 4 task

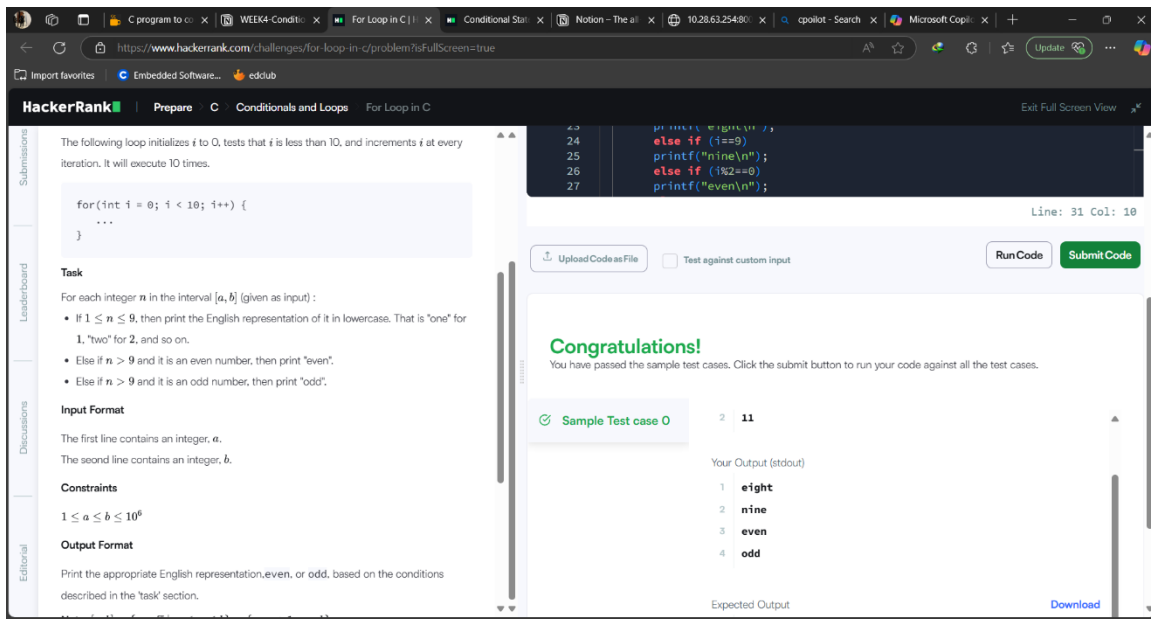
## 1 – hacker rank



```
1 #include <stdio.h>
2
3 int main() {
4     int num;
5     printf("Enter your number: ");
6     scanf("%d", &num);
7
8     if (num >= 1 && num <= 9)
9     {
10        switch (num)
11        {
12            case 1:
13                printf("one\n");
14                break;
15            case 2:
16                printf("two\n");
17                break;
18            case 3:
19                printf("three\n");
20                break;
21            case 4:
22                printf("four\n");
23                break;
24        }
25    }
26    return 0;
27 }
```

Terminal Output:

```
Enter your number: 7
seven
Process returned 0 (0x0)   execution time : 25.305 s
Press any key to continue.
```



**HackerRank** | Prepare | C | Conditionals and Loops | For Loop in C

The following loop initializes  $i$  to 0, tests that  $i$  is less than 10, and increments  $i$  at every iteration. It will execute 10 times.

```
for(int i = 0; i < 10; i++) {
    ...
}
```

**Task**

For each integer  $n$  in the interval  $[a, b]$  (given as input):

- If  $1 \leq n \leq 9$ , then print the English representation of it in lowercase. That is "one" for 1, "two" for 2, and so on.
- Else if  $n > 9$  and it is an even number, then print "even".
- Else if  $n > 9$  and it is an odd number, then print "odd".

**Input Format**

The first line contains an integer,  $a$ .  
The second line contains an integer,  $b$ .

**Constraints**

$1 \leq a \leq b \leq 10^6$

**Output Format**

Print the appropriate English representation, even, or odd, based on the conditions described in the 'task' section.

**Code Editor:**

```
24 int main() {
25     int a, b;
26     scanf("%d %d", &a, &b);
27     for(int i = a; i <= b; i++) {
28         if (i < 10) {
29             if (i == 1) printf("one\n");
30             else if (i == 2) printf("two\n");
31             else if (i == 3) printf("three\n");
32             else if (i == 4) printf("four\n");
33             else if (i == 5) printf("five\n");
34             else if (i == 6) printf("six\n");
35             else if (i == 7) printf("seven\n");
36             else if (i == 8) printf("eight\n");
37             else if (i == 9) printf("nine\n");
38         } else {
39             if (i % 2 == 0) printf("even\n");
40             else printf("odd\n");
41         }
42     }
43     return 0;
44 }
```

**Output:**

Sample Test case 0

2 11

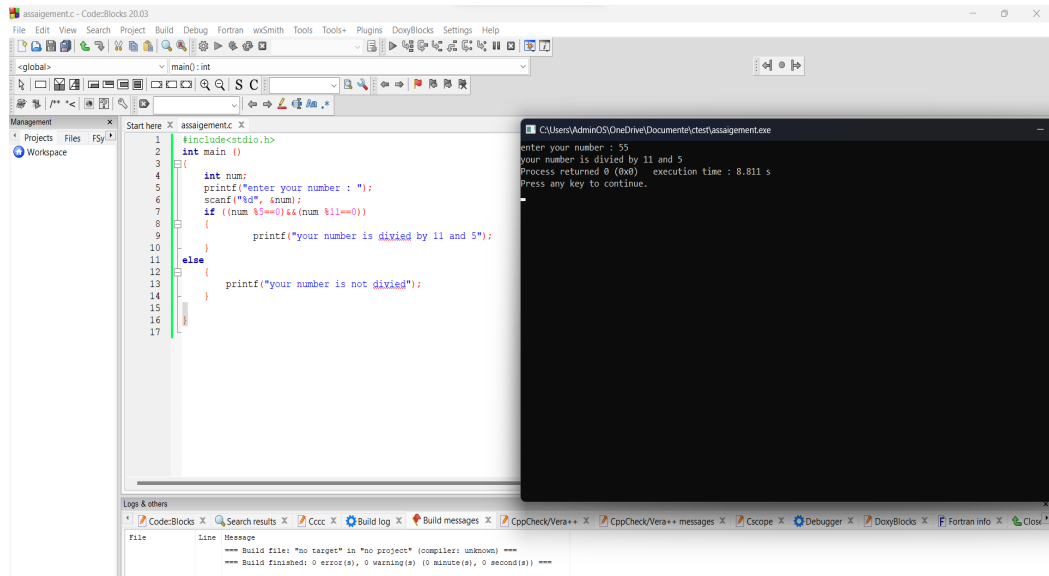
Your Output (stdout)

```
1 eight
2 nine
3 even
4 odd
```

Expected Output

[Download](#)

## 2- if task

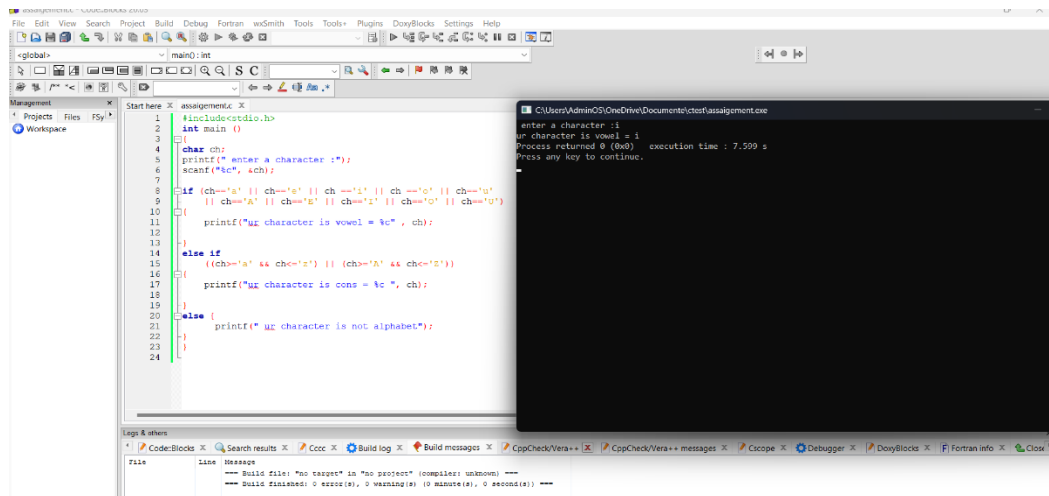


```
#include <stdio.h>

int main ()
{
    int num;
    printf("enter your number : ");
    scanf("%d", &num);
    if ((num % 5 == 0) && (num % 11 == 0))
    {
        printf("your number is divided by 11 and 5");
    }
    else
    {
        printf("your number is not divided");
    }
}
```

Output:

```
enter your number : 55
your number is divided by 11 and 5
Process returned 0 (0x0)   execution time : 0.811 s
Press any key to continue.
```

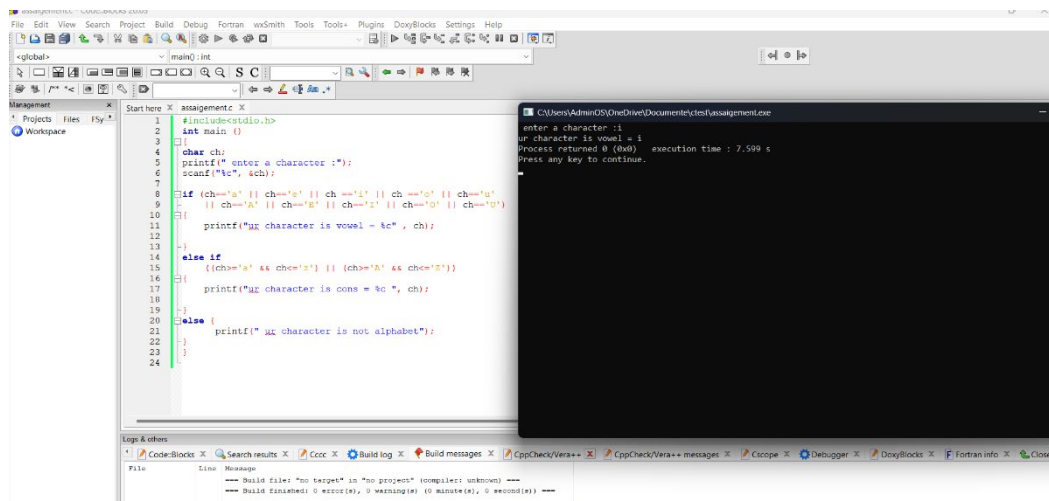


```
#include <stdio.h>

int main ()
{
    char ch;
    printf(" enter a character :");
    scanf("%c", &ch);
    if (ch=='a' || ch=='e' || ch=='i' || ch=='o' || ch=='u' ||
        ch=='A' || ch=='E' || ch=='I' || ch=='O' || ch=='U')
    {
        printf("uz character is vowel = %c", ch);
    }
    else if
    ((ch=='a' && ch=='e') || (ch=='A' && ch=='E'))
    {
        printf("uz character is cons = %c ", ch);
    }
    else
    {
        printf(" uz character is not alphabet");
    }
}
```

Output:

```
enter a character : a
uz character is vowel = a
Process returned 0 (0x0)   execution time : 7.599 s
Press any key to continue.
```



```
#include <stdio.h>

int main ()
{
    char ch;
    printf(" enter a character :");
    scanf("%c", &ch);
    if (ch=='a' || ch=='e' || ch=='i' || ch=='o' || ch=='u' ||
        ch=='A' || ch=='E' || ch=='I' || ch=='O' || ch=='U')
    {
        printf("uz character is vowel = %c", ch);
    }
    else if
    ((ch=='a' && ch=='e') || (ch=='A' && ch=='E'))
    {
        printf("uz character is cons = %c ", ch);
    }
    else
    {
        printf(" uz character is not alphabet");
    }
}
```

Output:

```
enter a character : a
uz character is vowel = a
Process returned 0 (0x0)   execution time : 7.599 s
Press any key to continue.
```

```
#include <stdio.h>

int main() {
    int phy, bio, math, chim, comp;
    double percentage;

    printf("Enter the five marks: ");
    scanf("%d%d%d%d%d", &phy, &bio, &math, &chim, &comp);

    percentage = (phy + bio + math + chim + comp) / 5.0;
    printf("Percentage = %.2f\n", percentage);

    if (percentage >= 90) {
        printf("Your grade is A\n");
    } else if (percentage >= 80) {
        printf("Your grade is B\n");
    } else if (percentage >= 70) {
        printf("Your grade is C\n");
    } else if (percentage >= 60) {
        printf("Your grade is D\n");
    } else if (percentage >= 40) {
        printf("Your grade is E\n");
    } else {
        printf("You have failed\n");
    }

    return 0;
}
```

Output window shows: Enter the five marks: 90 80 70 60 60, Percentage = 72.00, Your grade is C. Process returned 0 (0x0) execution time: 17.059 s. Press any key to continue.

```
#include <stdio.h>

int main() {
    int phy, bio, math, chim, comp;
    double percentage;

    printf("Enter the five marks: ");
    scanf("%d%d%d%d%d", &phy, &bio, &math, &chim, &comp);

    percentage = (phy + bio + math + chim + comp) / 5.0;
    printf("Percentage = %.2f\n", percentage);

    if (percentage >= 90) {
        printf("Your grade is A\n");
    } else if (percentage >= 80) {
        printf("Your grade is B\n");
    } else if (percentage >= 70) {
        printf("Your grade is C\n");
    } else if (percentage >= 60) {
        printf("Your grade is D\n");
    } else if (percentage >= 40) {
        printf("Your grade is E\n");
    } else {
        printf("You have failed\n");
    }

    return 0;
}
```

Output window shows: Enter the five marks: 90 80 70 60 60, Percentage = 72.00, Your grade is C. Process returned 0 (0x0) execution time: 17.059 s. Press any key to continue.

```
#include <stdio.h>

int main() {
    float gross, DA, HRA, basic;

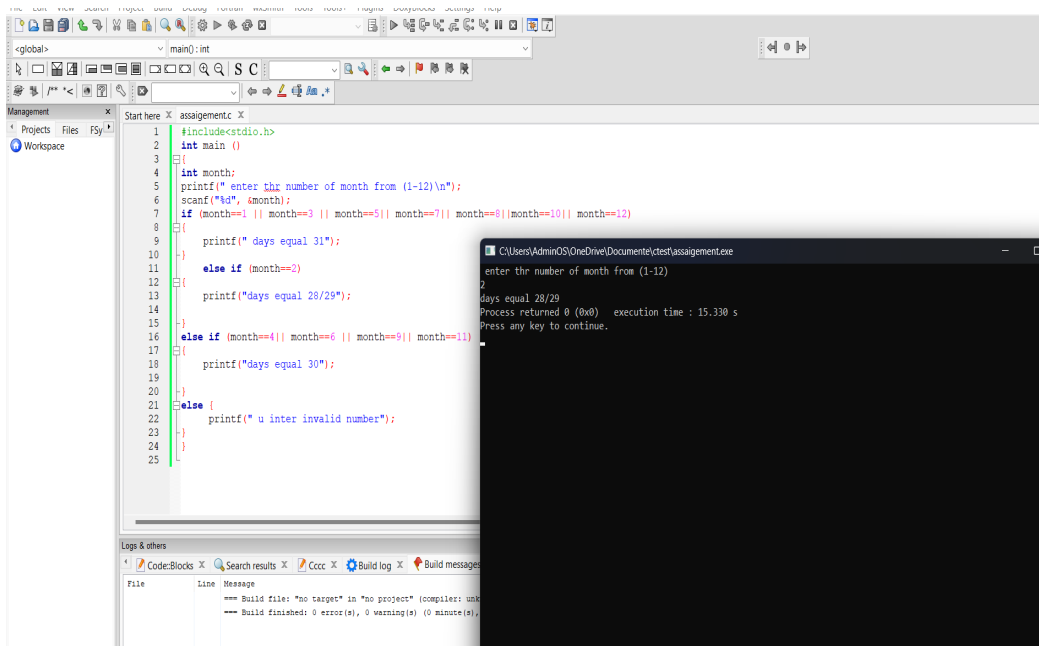
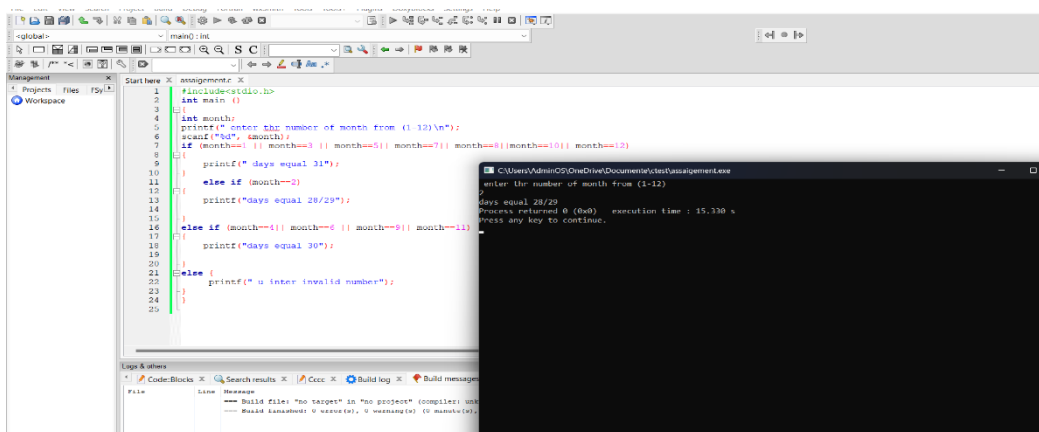
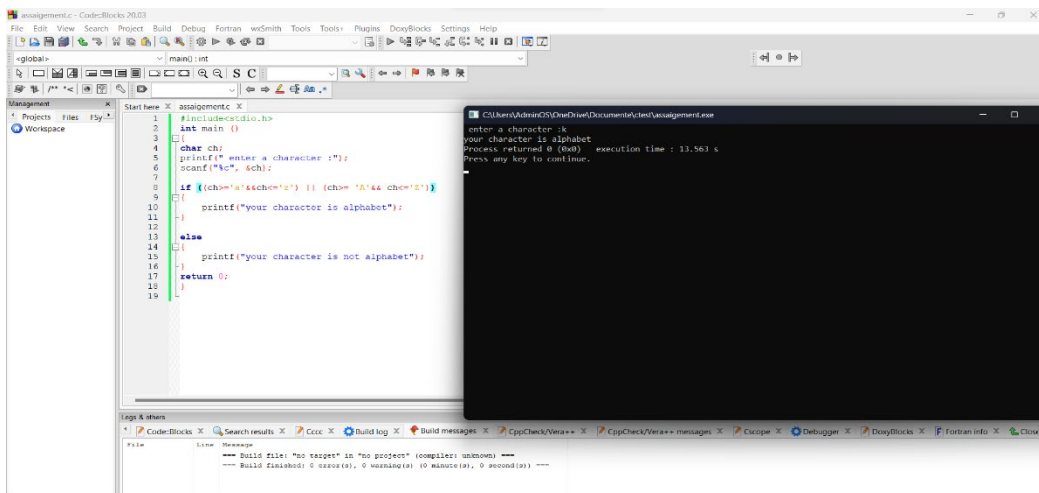
    printf("Enter basic salary of an employee: ");
    scanf("%f", &basic);

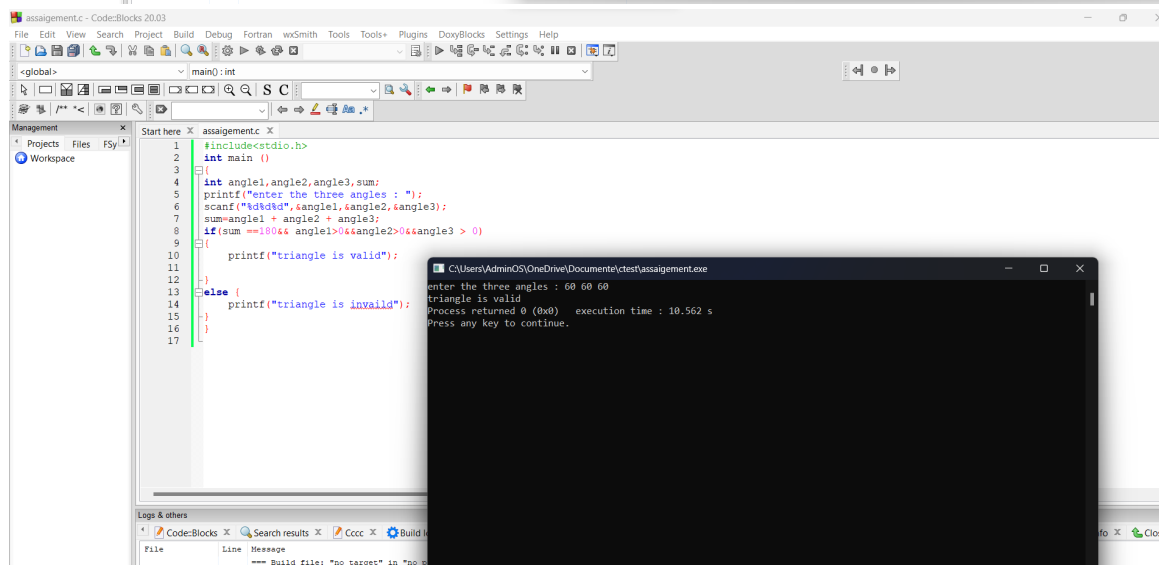
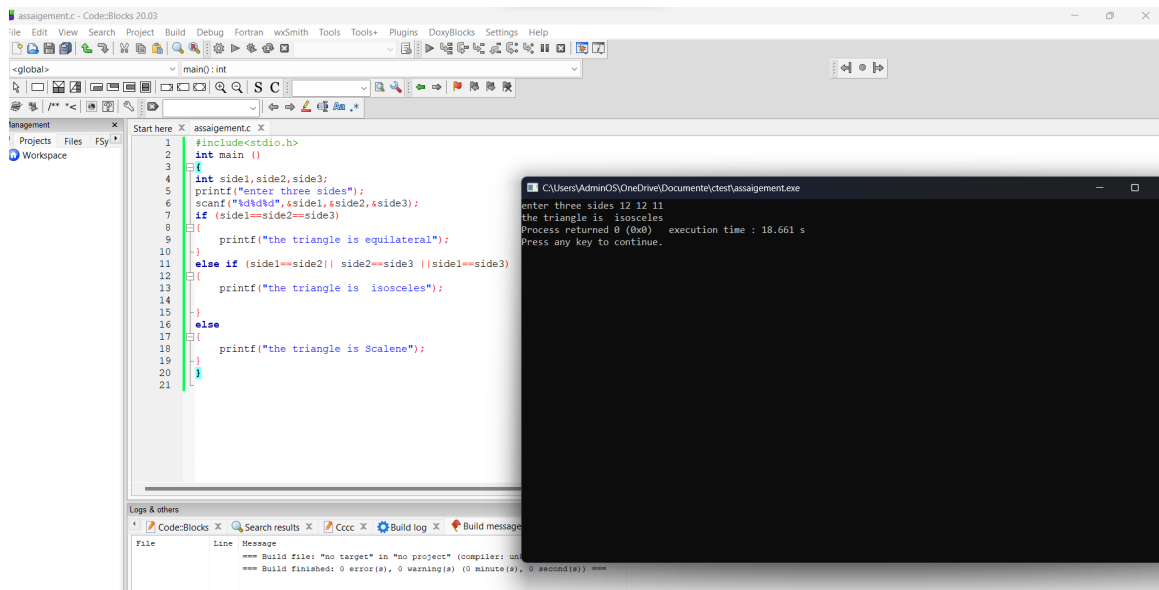
    if (basic <= 10000) {
        DA = basic * 0.2;
        HRA = basic * 0.5;
    } else if (basic <= 20000) {
        DA = basic * 0.5;
        HRA = basic * 0.25;
    } else {
        DA = basic * 0.65;
        HRA = basic * 0.3;
    }

    gross = basic + HRA + DA;
    printf("Gross salary of employee = %.2f\n", gross);

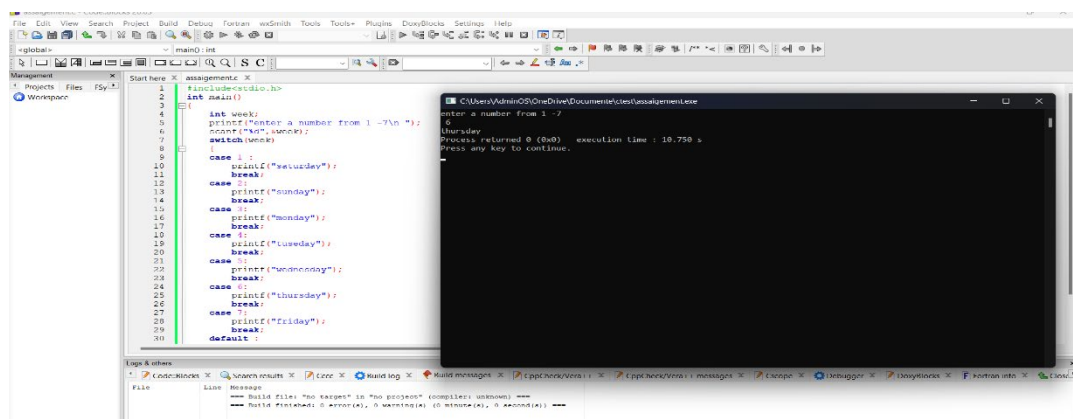
    return 0;
}
```

Output window shows: Enter basic salary of an employee: 12345, Gross salary of employee = 26541.75. Process returned 0 (0x0) execution time: 16.741 s. Press any key to continue.





## 3 - Switch task



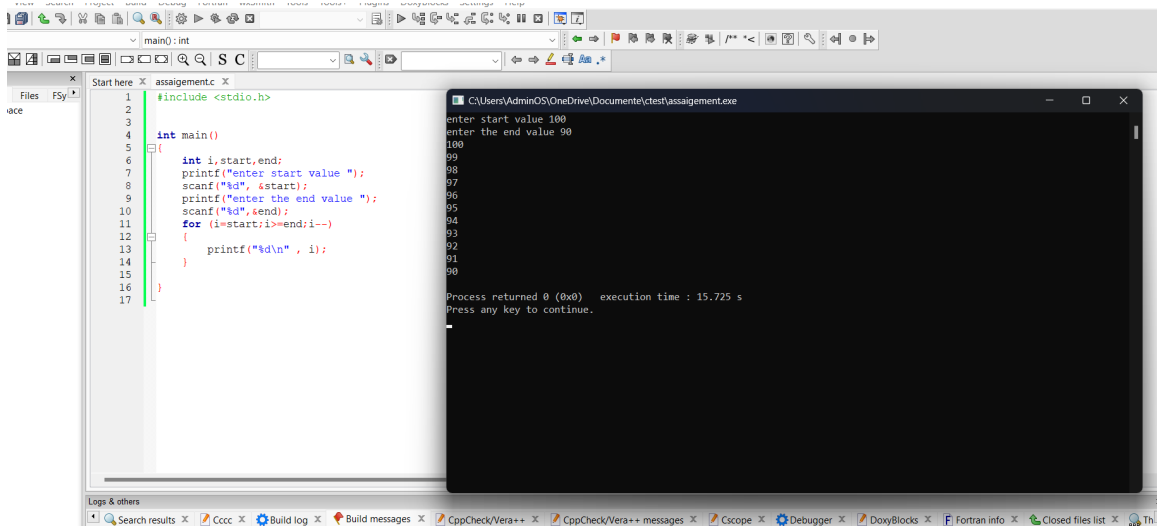
```
1 // assaigement.c - Code::Blocks 20.03
2
3 #include <iostream>
4 using namespace std;
5
6 int main() {
7     float a, b, c, imaginary, discriminant;
8     float root1, root2;
9
10    printf("Enter the values of a, b, c for the equation ax^2 + bx + c = 0: ");
11    scanf("%f %f %f", &a, &b, &c);
12
13    discriminant = (b * b) - (4 * a * c);
14
15    if (discriminant > 0) {
16        // Discriminant is positive
17        root1 = (-b + sqrt(discriminant)) / (2 * a);
18        root2 = (-b - sqrt(discriminant)) / (2 * a);
19        printf("Two distinct real roots: %.2f and %.2f\n", root1, root2);
20    } else if (discriminant == 0) {
21        // Discriminant is zero
22        root1 = root2 = -b / (2 * a);
23        printf("Two equal real roots: %.2f and %.2f\n", root1, root2);
24    } else {
25        // Discriminant is negative
26        root1 = root2 = -b / (2 * a);
27        imaginary = sqrt(-discriminant) / (2 * a);
28        printf("Two distinct complex roots: %.2f + i%.2f and %.2f - i%.2f\n", root1, imaginary, root2, imaginary);
29    }
30
31    return 0;
32 }
```

Enter the values of a, b, c for the equation ax<sup>2</sup> + bx + c = 0: 4 -2 -10  
Two distinct real roots: 1.85 and -1.35  
Process returned 0 (0x0) execution time : 16.698 s  
Press any key to continue.

```
1 // assaigement.c - Code::Blocks 20.03
2
3 #include <stdio.h>
4
5 int main() {
6     float num1, num2, result = 0.0f;
7     char op;
8     printf("Enter [number 1] [* / - +] [number 2] \n ");
9     scanf("%f%c%f", &num1, &op, &num2);
10    switch(op) {
11        case '+':
12            result = num1 + num2;
13            break;
14        case '-':
15            result = num1 - num2;
16            break;
17        case '/':
18            result = num1 / num2;
19            break;
20        case '*':
21            result = num1 * num2;
22            break;
23    }
24    printf("%.2f %c %.2f = %.2f", num1, op, num2, result);
25
26    return 0;
27 }
```

Enter [number 1] [\* / - +] [number 2]  
5\*12  
5.00 \* 12.00 = 60.00  
Process returned 0 (0x0) execution time : 10.629 s  
Press any key to continue.

# 4-Loops task



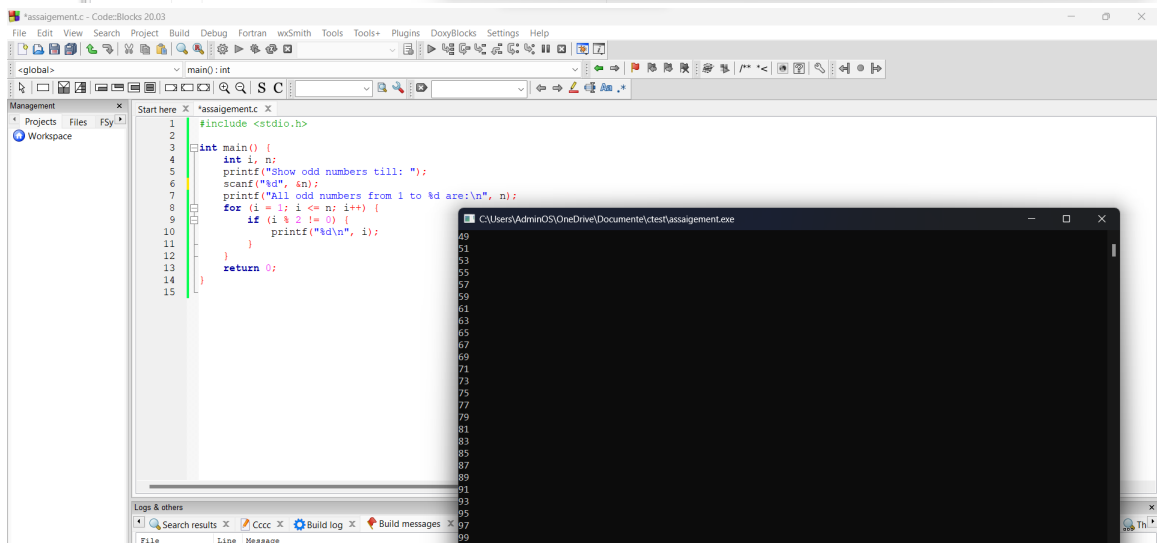
The screenshot shows the Code::Blocks IDE with a C program named 'assaiement.c'. The program includes `<stdio.h>` and has a `main()` function. Inside `main()`, it declares `int i, start, end;`, prompts the user to enter start and end values, and then uses a `for` loop to print numbers from `start` down to `end`. The terminal window shows the user entering 100 for the start value and 90 for the end value, resulting in the program printing numbers from 100 down to 90.

```
#include <stdio.h>

int main()
{
    int i, start, end;
    printf("Enter start value ");
    scanf("%d", &start);
    printf("Enter the end value ");
    scanf("%d", &end);
    for (i=start; i>=end; i--)
    {
        printf("%d\n", i);
    }
}
```

Terminal output:

```
Enter start value 100
Enter the end value 90
100
99
98
97
96
95
94
93
92
91
90
Process returned 0 (0x0)   execution time : 15.725 s
Press any key to continue.
```



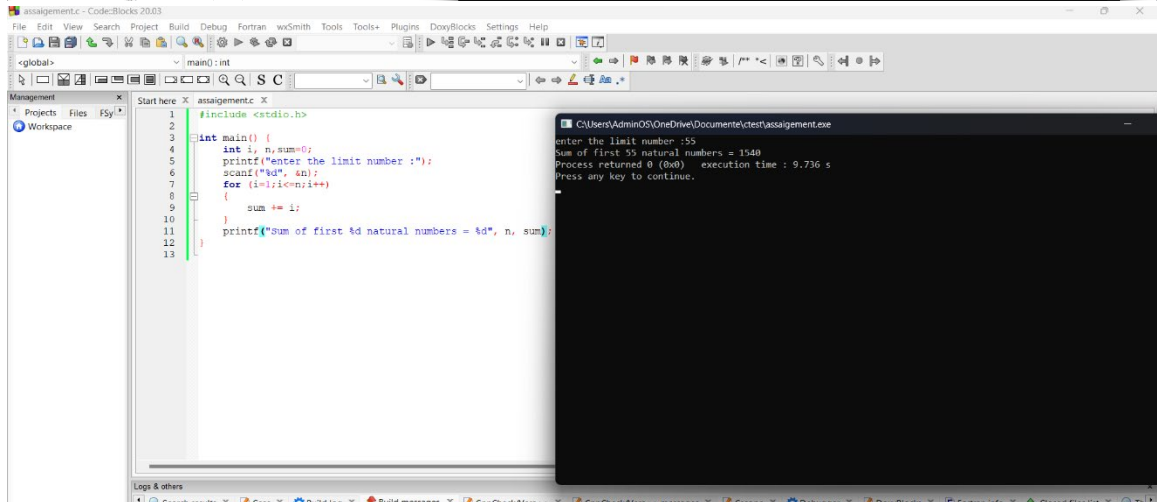
The screenshot shows the Code::Blocks IDE with a C program named 'assaiement.c'. The program includes `<stdio.h>` and has a `main()` function. Inside `main()`, it declares `int i, n;`, prompts the user to enter a number `n`, and then uses a `for` loop to print odd numbers from 1 to `n`. The terminal window shows the user entering 55 for `n`, resulting in the program printing odd numbers from 1 to 55.

```
#include <stdio.h>

int main() {
    int i, n;
    printf("Show odd numbers till: ");
    scanf("%d", &n);
    printf("All odd numbers from 1 to %d are:\n", n);
    for (i = 1; i <= n; i++) {
        if (i % 2 != 0) {
            printf("%d\n", i);
        }
    }
    return 0;
}
```

Terminal output:

```
49
51
53
55
57
59
61
63
65
67
69
71
73
75
77
79
81
83
85
87
89
91
93
95
97
99
```



The screenshot shows the Code::Blocks IDE with a C program named 'assaiement.c'. The program includes `<stdio.h>` and has a `main()` function. Inside `main()`, it declares `int i, n, sum=0;`, prompts the user to enter a limit number `n`, and then uses a `for` loop to calculate the sum of the first `n` natural numbers. The terminal window shows the user entering 55 for `n`, resulting in the program printing the sum of the first 55 natural numbers, which is 1540.

```
#include <stdio.h>

int main() {
    int i, n, sum=0;
    printf("Enter the limit number :");
    scanf("%d", &n);
    for (i=1; i<=n; i++)
    {
        sum += i;
    }
    printf("Sum of first %d natural numbers = %d", n, sum);
}
```

Terminal output:

```
Enter the limit number :55
Sum of first 55 natural numbers = 1540
Process returned 0 (0x0)   execution time : 9.736 s
Press any key to continue.
```

The screenshot shows the Code::Blocks IDE with a C program in the editor and its execution output in a terminal window.

```
#include <stdio.h>

int main() {
    int i, num;
    printf("Enter the number you want to show multiple table \n");
    scanf("%d", &num);
    for (i=1; i<=12; i++)
    {
        printf("%d * %d = %d\n", num, i, (num*i));
    }
}
```

Execution output:

```
Enter the number you want to show multiple table
8
8 * 1 = 8
8 * 2 = 16
8 * 3 = 24
8 * 4 = 32
8 * 5 = 40
8 * 6 = 48
8 * 7 = 56
8 * 8 = 64
8 * 9 = 72
8 * 10 = 80
8 * 11 = 88
8 * 12 = 96

Process returned 0 (0x0)   execution time : 11.958 s
Press any key to continue.
```

The screenshot shows the Code::Blocks IDE with a C program in the editor and its execution output in a terminal window.

```
#include <stdio.h>

int main() {
    long long num;
    int count = 0;
    printf("Enter numbers: ");
    scanf("%lld", &num);
    do {
        count++;
        num /= 10;
    } while (num != 0);
    printf("Total count of digits = %d\n", count);
    return 0;
}
```

Execution output:

```
Enter numbers: 123456789
Total count of digits = 9

Process returned 0 (0x0)   execution time : 12.902 s
Press any key to continue.
```

The screenshot shows the Code::Blocks IDE with a C program in the editor and its execution output in a terminal window.

```
#include <stdio.h>

int main() {
    int num;
    long long product=1;

    printf("Enter the digits: ");
    scanf("%d", &num);

    product = (num == 0 ? 0 : 1);

    while (num != 0)
    {
        product = product * (num % 10);
        num = num / 10;
    }

    printf("Product of digits = %lld", product);
}
```

Execution output:

```
Enter the digits: 36456
Product of digits = 2160
Process returned 0 (0x0)   execution time : 10.828 s
Press any key to continue.
```



