Assignment:

① → write a Progrom That Prints even # from 1 → 100 only

② → make a simple Menu Calculator

a → Add
b → subtract
C → Multibly
d → divide
E → exit
of 2 numbers

~~skip & ente~~r Choice if not valid repeat menu.
Exit when press Eorc

③ → Magic box → constant ⇒ odd 3x3
validat odd even
varidble 5x5
7x7
bonus ⇒ Colored using ANSI scape codes.

④ → grading system for iti
take ⇒ score & Print grade
with all possibilities

⑤ → Draw matrix That draw diagonal = *

```
* - -
- * -
- - *
```

```cpp
#include <iostream>

using namespace std;

int main()
{
    for(int i=0;i<101;i++){
        if(i%2==0){
        cout << i << endl;
        };
    };
    return 0;
}
```

```cpp
int main()
{
    float n1,n2;
    char op;
    do {
        cout << "a. Add"<< endl;
        cout << "b. Subtract"<< endl;
        cout << "c. Multiply"<< endl;
        cout << "d. Divide"<< endl;
        cout << "e. Exit"<< endl;
        cout << "Enter your choice: ";
        cin >> op;
        if (op == 'e' || op == 'E') {
            break;
        }
        cout << "Enter two numbers: ";
        cin >> n1 >> n2;

        switch (op) {
            case 'a':
                cout << "Result: " << n1 + n2 << endl;
                break;
            case 'b':
                 cout << "Result: " << n1 - n2 << endl;
                break;
            case 'c':
                cout << "Result: " << n1 * n2 << endl;
                break;
            case 'd':
                if (n2 == 0)
                    cout << "Error: Division by zero!"<< endl;
                else
                    cout << "Result: " << n1 / n2 << endl;
                break;
            default:
                cout << "Invalid choice! Try again."<< endl;
        }
```

```cpp
#include <iostream>

using namespace std;

int main()
{
    int score;
    cout << "Enter the score"<<endl;
    cin >> score;
    if(score<=100 && score>=85)
        cout << "Your Grade is A"<<endl;
    else if(score<=84 && score>=75)
        cout << "Your Grade is B"<<endl;
    else if(score<=74 && score>=65)
        cout << "Your Grade is C"<<endl;
    else if(score<=64 && score>=60)
        cout << "Your Grade is D"<<endl;
    else if(score<60)
        cout << "Your Failed !"<<endl;
    else
        cout << "Invalid Number !"<<endl;

    return 0;
}
```

```cpp
#include <iostream>
using namespace std;

int main() {
    int n;
    cout << "Enter matrix size: ";
    cin >> n;

    for (int i = 0; i < n; i++) {
        for (int j = 0; j < n; j++) {
            if (i == j)
                cout << "* ";
            else
                cout << "_ ";
        }
        cout << endl;
    }

    return 0;
}
```

main.cpp

```cpp
#include <iostream>
#include <iomanip>
using namespace std;

int main() {
    system(" ");
    int n;
    cout << "Enter an odd number for the Magic Box (e.g., 3, 5, 7): ";
    cin >> n;
    if (n % 2 == 0) {
        cout << "Magic box is only possible for odd numbers!" << endl;
        return 0;
    }

    int magic[n][n];
    for (int i = 0; i < n; i++)
        for (int j = 0; j < n; j++)
            magic[i][j] = 0;

    // Siamese method algorithm
    int num = 1;
    int r = 0, c = n / 2;
```

```
while (num <= n * n) {
    magic[r][c] = num; //place first number = 1;
    num++;

    int newR = (r - 1 + n) % n;
    int newC = (c + 1) % n;

    if (magic[newR][newC] != 0)
        r = (r + 1) % n;
    else {
        r = newR;
        c = newC;
    }
}

string colors[] = {
    "\033[31m", // red
    "\033[32m", // green
    "\033[33m", // yellow
    "\033[34m", // blue
    "\033[35m", // magenta
```

```
..

for (int r = 0; r < n; r++) {
    for (int c = 0; c < n; c++) {
        string color = colors[(magic[r][c]) % 6];
        cout << color << setw(4) << magic[r][c] << "\033[0m";
    }
    cout << endl;
}

int magic_constant = n * (n * n + 1) / 2;
cout << "\nMagic Constant = " << magic_constant << endl;
return 0;
```

```
Enter an odd number for the Magic Box (e.g., 3, 5, 7): 3
   8   1   6
   3   5   7
   4   9   2

Magic Constant = 15

Process returned 0 (0x0)   execution time : 1.833 s
Press any key to continue.
```