

C# Part2 Exercises

1. Simple Calculator (Switch-Case)

- Ask the user for two numbers and an operator (+, -, *, /).
- Use **switch-case** to perform the selected operation.

2. Basic ATM System

- Use a **starting balance** of \$1000.
- Allow users to **Deposit, Withdraw, or Check Balance**.
- Withdraw should check if **funds are available**.
- Display a menu with options:
 - 1. Withdraw Money
 - 2. Deposit Money
 - 3. Check Balance
 - 4. Exit
- Use **switch-case** to process the selected operation.

3. Geometry Calculator

- Ask the user to choose a shape:
 - 1. Circle (Calculate Area & Circumference)
 - 2. Square (Calculate Area & Perimeter)
 - 3. Triangle (Calculate Area)
- Use **switch-case** to perform the corresponding calculation.

4. Factorial of a Number

- Ask the user for a number **N** and calculate its **factorial (N!)**.

5. Sum of Even and Odd Numbers

- Ask the user to enter **N**.
- Find the sum of all even and odd numbers from **1 to N**.

6. Scientific Calculator (Switch-Case & Math Functions)

- Ask for an **operation** (sin, cos, tan, sqrt, log, pow).
- Use **switch-case** to compute results using Math functions.

7. Print Pattern (For Loop)

- Ask the user for a **number N** and print a right-angled triangle

Example: (for N=5)

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

8. Print a Pyramid Pattern (For Loop)

- Ask the user for **N** and print a pyramid

Example: (for N=4)

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

9. Print a Diamond Pattern (For Loop)

- Ask for **N**, then print a **diamond shape**.

Example: (for N=3)

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

10. Guess Game with helper

Generate a **random number (1-100)** and ask the user to **guess the number**.

- If guess is **too high** → "Try Lower!"
- If guess is **too low** → "Try Higher!"
- If guess is **correct** → "You Win!"

Use a **while loop** to keep asking: