
DAY 5 (QUESTIONS)

1. What is the purpose of the finally block?
 - Executing the final code after the try block, even if an exception occurs.
2. How does `int.TryParse()` improve program robustness compared to `int.Parse()`?
 - `int.TryParse`: Prevents exceptions, handling error.
 - `Int.Parse`: cause exceptions.
3. What exception occurs when trying to access Value on a null Nullable?
 - When access the Value property of a `Nullable<T>` type that is null.
 - EX: `int ? Num1 = null;`
`Int Num2 = Num1.Value; // error InvalidOperationException`
4. Why is it necessary to check array bounds before accessing elements?
 - Prevent `IndexOutOfRangeException`.
5. How is the `GetLength(dimension)` method used in multi-dimensional arrays?
 - `GetLength(0)` calculate Number Row.
 - `GetLength(1)` calculate Number Column.
6. How does the memory allocation differ between jagged arrays and rectangular arrays?
 - rectangular array : A single memory block is used.
 - jagged arrays: Separate memory blocks for each row.
7. What is the purpose of nullable reference types in C#?
 - prevent null reference exceptions , reducing the likelihood of runtime null reference errors.
8. What is the performance impact of boxing and unboxing in C#?
 - Boxing : slower than using value types directly.
 - Unboxing : has its own cost but is less expensive than boxing.

9. Why must out parameters be initialized inside the method?

- prevent runtime errors due to uninitialized variables.

10. Why must optional parameters always appear at the end of a method's parameter list?

- avoid ambiguity when calling the method.

11. How does the null propagation operator prevent NullPointerException?

- Check null value before access to element if element is null, expression evaluates to null instead of throwing an exception.

12. When is a switch expression preferred over a traditional if statement?

- When you have fixed and specific cases.
- When you want a short and easy-to-read code

13. What are the limitations of the params keyword in method definitions?

- Only One params Parameter Allowed
- params Parameter Must Be the Last Parameter
- Works Only with Array