

Dear Applicant,

Thank you for applying for the **Senior .NET Developer** position at **3dEYE**.

As part of our selection process, we kindly ask you to complete a **test assignment**. This assignment is designed to assess your approach to **memory management, multithreading/concurrency, and performance optimization**. There is no single correct solution, but we are particularly interested in how you tackle the problem.

Once completed, please submit your solution as a **GitHub repository link** to [hr@3deye.me](mailto:hr@3deye.me).

### Test Assignment

Your task is to process a **large text file** where each line follows the format:

<Number>. <String>

#### Example Input:

415. Apple

30432. Something something something

1. Apple

32. Cherry is the best

2. Banana is yellow

#### Sorting Criteria:

1. First, sort by the **string** part (alphabetically).
2. If two lines have the same string, sort by the **number** (ascending).

#### Expected Output:

1. Apple

415. Apple

2. Banana is yellow

32. Cherry is the best

30432. Something something something

## Implementation Requirements

You must develop **two C# programs**:

### 1. Test File Generator

- Creates a text file of the described format.
- There must be some number of lines with the same String part.
- Allows specifying the file size.

### 2. Sorter

- Sorts the file according to the given criteria.
- Must handle **very large files (~100GB)** efficiently.

## Evaluation Criteria

Your solution will be assessed based on:

- **Code quality** and readability.
- **Performance considerations.** Benchmarking and performance testing will be considered a bonus.
- **Memory management.**
- **Test coverage** to ensure reliability.
- **Multithreading** and concurrency.

If you have any questions, feel free to reach out.

We look forward to reviewing your solution!

Best regards,

**3dEYE Hiring Team**