

## Tools and environment

The task requires knowledge of C# programming language and .NET framework. It is up to decide how to provide the task deliverables and briefly describe the instructions to run the code (if it is necessary).

## System description and requirements

The system is designed to generate and use DISCOUNT codes. The system consists of a server-side and a client-side. Communication depends on the protocol specified below.

### The Task

Create server-side of the system.

Client-side is optional, but appreciated. Client code quality will not be evaluated. The server-side should consist of:

- DISCOUNT code generation (generation can be called any way, there is no difference).
- DISCOUNT code usage.
- Communication between server and client.

### Requirements

- The server-side could be restarted as many times as desired, generated and used codes must stay.
- The length of the DISCOUNT code is 7-8 characters during generation (when using the code it is entered manually).
- DISCOUNT code must be generated randomly and can not repeat. Generation could be repeated as many times as desired.
- 1 to 2 thousand DISCOUNT codes are generated during one generation.
- System must be capable of processing multiple requests in parallel.
- Unit tests (optional).

### Protocol

Do not use WEB APIs (REST) for this task. Everything else is allowed for example TCP sockets, web-sockets, SignalR, gRPC etc.

*Generate request format*

Field	Note	Type
Count	The number of codes	ushort
Length	Length of the code	byte

*Generate response format*

Field	Note	Type
Result	Request result	bool

*UseCode request format*

Field	Note	Type
Code	Discount code	string (8)

*UseCode response format*

Field	Note	Type
Result	Request result code	byte