Stage 2 – New data source

Introduction

In this stage you need to add new data source to the program. This data source will simulate TCP server broadcasting information about flights. It's provided in a form of a class from a NetworkSourceSimulator.dll library, which has to be added to the project. Data source transforms .ftr file into binary messages, which are then provided to the user. You also have to implement mechanism which will allow for creating snapshots and exiting application.

Loading data

Data source implements following interface:

- namespace: NetworkSourceSimulator

    - class: NetworkSourceSimulator

        - constructor takes path to a .ftr file and to values indicating minimum and maximum delay between following messages.

        - Run() method is a data source's program loop

        - GetMessageAt(int index) method returns message storred at provided index

        - NewDataReady? OnNewDataReady event is invoked after generating each message

    - class Message

        - MessageBytes property is message data in binary form

    - class NewDataReadyArgs

        - MessageIndex property is index of the most recently generated message

After creating data source you have to run it's Run method in a separate thread or proces, while reading messages in a main thread.

Source and message interfaces

Provided in Source.cs and Message.cs files.

Binary messages format

Provided in MessagesFormat.pdf.

Snapshot creation and exiting application

While running application should listen for commands entered using command line. When „print" command is registered application should serialize all data currently available (read from the new source) to the „snapshot_HH_MM_SS.json" file. Command „exit" should exit the application and free all of it's resources (threads, processes).

Deadline

2 weeks

All source files must be uploaded to the git repository by 13.03.2024 23:59.

The project should be presented to the instructor during the classes on 14.03.2024.