NETB386 Java systems and application development

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Problem 1. Online dictionary

1 PROBLEM DESCRIPTION

Online dictionary. A client-server pair, in which the server has a dictionary text file that contains pairs of words. Each pair is composed by the word in English and its Bulgarian translation. The client sends a word in English. The server responds with the Bulgarian translation, if the word is present in the dictionary.

2 SOLUTION

There are 4 classes. ServerMain and ClientMain, these are the classes which you should run. ServerThread is responsible for communication with the client and for searching in the dictionary. ClientThread is responsible for communication with the server and for reading which words do you want to find in the dictionary from the standard input.

2.1 SERVERTHREAD

First of all, in order to construct an object of this type, we should know the port on which our server will be listening and the path of the file which contains the words and their translation.

NOTE: THERE IS A SPACE BETWEEN THE WORD AND ITS TRANSLATION. EACH PAIR OF WORD AND TRANSLATION IS ON A NEW LINE.

There is a private method called **initialReadOfDictionary** which actually will read the whole file and cache the words and their translation into a **Map** in order to have a better performance.

One specific thing about this implementation is that the reader of the file and the writer to the output stream of the socket specify encoding. This is needed because the default encoding does not include Cyrillic characters.

The server when it waits for request is in blocked state which is ensured by the **BufferedReader** method **readLine.**

2.2 CLIENTTHREAD

In the client we open a socket to the port number on which the server is listening. Start sending requests. A request is a word and it comes from standard input. In order to receive this request in the correct encoding we add to the **BufferedReader** a parameter which specify that **UTF-8** is used. We also make the word in small letters because the dictionary contains such words. Client is waiting for the answer of the server, ensured by the **readLine** method of **BufferedReader.** Printing the result.

3 USAGE INSTRUCTIONS

3.1 START SERVERMAIN

3.2 START CLIENTMAIN

3.3 TYPE A WORD AND WAIT FOR RESPONSE

IN THE FILE DICTIONARY.TXT THERE IS ONLY ONE WORD WHICH IS CAR(IN SMALL LETTERS)