LAB EXERCISE REPORT FOR WEEK 4

BITP 3123 Sem 2 2020/2021

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Document Information

This document described the solutions and outcomes for Lab 4.

Solution for Exercise 3

Client.java

```java
package Exe3Method1;

import java.io.IOException;
import java.io.PrintStream;
import java.net.Socket;
import java.net.UnknownHostException;
import java.util.Scanner;
import java.io.DataInputStream;
import java.io.DataOutputStream;
import java.net.InetAddress;


public class Client
{

        public static void main(String args[])throws UnknownHostException, IOException
        {
                //define variable
                String text;

                //create object, syntax for input
                Scanner sc= new Scanner(System.in);

                Socket s = new Socket("127.0.0.1",4646);

                //create output stream, utk send ke server
                DataOutputStream outputStream = new DataOutputStream(s.getOutputStream());

                //output
                System.out.println("Enter Any Words: ");

                //input syntax
                text=sc.nextLine();

                //send data to server, send text yg client tulis
                outputStream.writeUTF(text);
                outputStream.flush();

                //create input stream, utk baca dari server
                DataInputStream dataIn = new DataInputStream(s.getInputStream());

                //read from server
                int textword = dataIn.readInt();


                //kt sini print number of word sent dri server
                System.out.print("Number of Words: ");
                System.out.println(textword);
        }

}
```

Server.java

```java
package Exe3Method1;

import java.io.IOException;
import java.io.PrintStream;
import java.net.ServerSocket;
import java.net.Socket;
import java.util.Scanner;
import java.io.BufferedReader;
import java.io.DataInputStream;
import java.io.DataOutputStream;
import java.io.InputStreamReader;

public class Server
    {
            private static final String String = null;

            public static void main(String args[]) throws IOException
                {
                        String words;
                        int count=0;
                        ServerSocket s1=new ServerSocket(4646);

                        //accept client request
                        Socket exe3=s1.accept();

                        //create input stream, utk baca dari client
                        DataInputStream dataIn = new DataInputStream(exe3.getInputStream());


                        //read data from client, pakai readUTF sebab String
                        words=dataIn.readUTF();

                        //call method
                        count=countWord(words);

                        //Create output stream to send back to client
                        DataOutputStream dataOut = new
DataOutputStream(exe3.getOutputStream());

                        //send data kt client, pakai writeInt sebab integer
                        dataOut.writeInt(count);
                        dataOut.flush();

                        //Close everything
                        s1.close();
                        exe3.close();
                        dataIn.close();
                        dataOut.close();

                    }


        public static int countWord(String words)
        {

            if(words.isBlank())
            {
                return 0;
            }

            int count = 0;

            for(int index = 0;index<words.length() -1 ;index++)
            {
                if(words.charAt(index) == ' ' && words.charAt(index +1) != ' ')
                {
                    count += 1;
                }
            }
            return count + 1;
        }
}
```

```
Enter Any Words:
Selamat Berpuasa
Number of Words: 2
```

Solution for Exercise 5

ClientSide.java

```java
package Exe5;

import java.io.DataInputStream;
import java.io.DataOutputStream;
import java.io.IOException;
import java.net.InetAddress;
import java.net.Socket;
import java.util.Scanner;


public class ClientSide {

	public static void main(String[] args) {

		try {

			//Connect to the server at localhost for port 4646
			Socket socket = new Socket(InetAddress.getLocalHost(),4646);

			//Create input object
			Scanner sc = new Scanner(System.in);

			//create output stream, utk send ke server
			DataOutputStream outputStream = new
DataOutputStream(socket.getOutputStream());

			//Display
			System.out.println("------------------------------------------------------------------------");
			System.out.println("\t       Client Side");
			System.out.println("------------------------------------------------------------------------");
			System.out.println(" ");

			//Input From User
			System.out.print("Enter Words In English: ");
			String text =(sc.nextLine());

			//send data to server, send text yg client tulis
			outputStream.writeUTF(text);
			outputStream.flush();

			//create input stream, utk baca dari server
			DataInputStream dataIn = new DataInputStream(socket.getInputStream());

			//assign object to read data from server
			String translatedText = dataIn.readUTF();

			System.out.println("\nTranslated text: " );
			System.out.println("\nMalay			Arabic		Korean");
			//print translated text sent from server
			System.out.println(translatedText);

			//Close everything
			outputStream.close();
			sc.close();
			socket.close();
			dataIn.close();

		} catch (IOException e) {
			// TODO Auto-generated catch block
			e.printStackTrace();
		}

	}

}
```

ServerSide.java

```java
package Exe5;

import java.io.BufferedReader;
import java.io.DataInputStream;
import java.io.DataOutputStream;
import java.io.IOException;
import java.io.InputStreamReader;
import java.net.ServerSocket;
import java.net.Socket;

public class ServerSide {

    public static void main(String[] args) throws Exception {

        ServerSocket serverSocket = null;

        try {

            //Bind Serversocket to a port
            int portNo = 4646;
            serverSocket = new ServerSocket(portNo);

            System.out.println("-----------------------------------------------------------------------------------");
            System.out.println("\t        Server Side");
            System.out.println("\t...Waiting for request...");
            System.out.println("\t        ...Running...");
            System.out.println("-----------------------------------------------------------------------------------");
            System.out.println(" ");

            while(true) {

                //Accept client request for connection
                Socket clientSocket = serverSocket.accept();

                //Create stream to read data from client
                DataInputStream dataIn = new
DataInputStream(clientSocket.getInputStream());

                //create new object for translator
                Translator message = new Translator();

                //assign text read from client
                message.setText(dataIn.readUTF());

                //Object to store text
                String text = message.getText();

                //Translate the text
                Translator textToTranslate = new Translator(text);

                //Create stream to write data to the network
                DataOutputStream dataOut = new
DataOutputStream(clientSocket.getOutputStream());

                //Send data to the client
                dataOut.writeUTF(textToTranslate.getTranslatedText());
                dataOut.flush();

                //close the socket
                clientSocket.close();
                dataIn.close();
                dataOut.close();

            }
```

```java
        }catch(IOException ioe) {

                if(serverSocket != null)
                        serverSocket.close();

                ioe.printStackTrace();

        }

    }

}
```

Translator.java

```java
package Exe5;

public class Translator {

    private String text;

    public Translator(String text) {

            this.text=text;
            //this.language=language;

    }

    public Translator() {


    }

    public void setText(String text) {

            this.text=text;

    }

    public String getText() {

            return text;

    }


    public String getTranslatedText() {

            String translatedText = "";

            if(text.contentEquals("Good Morning")||text.contentEquals("Good
morning")||text.contentEquals("good morning")) {

                            translatedText="Selamat Pagi          الخير          좋은 아침";

                    }

            else if (text.contentEquals("Good Night")||text.contentEquals("Good
night")||text.contentEquals("good night")) {

                            translatedText="Selamat malam    مساء الخير        안녕히 주무세요";
```

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```java
                }
                else if (text.contentEquals("How are you?")||text.contentEquals("how are you?")) {

                        translatedText="Apa khabar?          كيف حالكم؟          어떻게
지내세요?"
;

                }
                else if (text.contentEquals("Thank you")||text.contentEquals("thank you")) {
                        translatedText="Terima kasih     شكرا جزيلا        감사합니다";
                }
                else if (text.contentEquals("Goodbye")||text.contentEquals("goodbye")) {

                        translatedText="Selamat Tinggal     مع السالمة        안녕";

                }
                else if (text.contentEquals("What's up?")||text.contentEquals("what's up?")) {

                        translatedText="Ada apa?          ما أخبارك؟        뭐야?";

                }

                return translatedText;

        }
}
```

Output

```
----------------------------------------
                Server Side
        ...Waiting for request...
                ...Running...
----------------------------------------
```

```
-----------------------------------------------
                Client Side
-----------------------------------------------

Enter Words In English: good morning

Translated text:

Malay                 Arabic          Korean
Selamat Pagi          الخير           좋은 아침
```

https://github.com/adamdanieal/DAD-Lab4

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