Assignment 5

Title : Clock Synchronization

Program :

Server.java

```java
import java.io.*;
import java.net.*;

public class Server {
    public static void main(String[] args) {
        try {
            ServerSocket serverSocket = new ServerSocket(1234);
            System.out.println("Server started and listening on port 1234");
            while (true) {
                Socket clienSocket = serverSocket.accept();
                System.out.println("Client connected : 0 " +
clienSocket.getInetAddress().getHostAddress());
                Thread t = new Thread(new ClientHandler(clienSocket));
                t.start();


            }
        } catch (IOException e) {
            e.printStackTrace();
        }
    }
}

class ClientHandler implements Runnable {
    private Socket clientSocket;
```

```java
    public ClientHandler(Socket socket) {
        this.clientSocket = socket;
    }

    @Override
    public void run() {
        try {
            PrintWriter out = new PrintWriter(clientSocket.getOutputStream(), true);
            BufferedReader in = new BufferedReader(new
InputStreamReader(clientSocket.getInputStream()));
            out.println(System.currentTimeMillis());
            in.close();
            out.close();
            clientSocket.close();

        } catch (IOException e) {
            e.printStackTrace();
        }
    }

}
```

Client.java

```java
import java.io.*;
import java.net.*;

public class Client {
    public static void main(String[] args) {
        try {
            Socket socket = new Socket("localhost", 1234);
```

```java
        BufferedReader in = new BufferedReader(new
InputStreamReader(socket.getInputStream()));

        PrintWriter out = new PrintWriter(socket.getOutputStream(), true);

        float serverTime = Float.parseFloat(in.readLine());

        float clientTime = System.currentTimeMillis();

        float timeDifference = serverTime - clientTime;


        System.out.println("Server TIme : " + serverTime);

        System.out.println("Client time : " + clientTime);

        System.out.println("Time Difference : " + timeDifference);


        in.close();

        out.close();

        socket.close();


    } catch (IOException e) {

        e.printStackTrace();

    }

  }
}
```

Output :

Kunal E:\BEIT\Sem 2\LP V\performed\Assignment6> cd src
Kunal E:\BEIT\Sem 2\LP V\performed\Assignment6\src> javac Server.java
Kunal E:\BEIT\Sem 2\LP V\performed\Assignment6\src> javac Client.java
Kunal E:\BEIT\Sem 2\LP V\performed\Assignment6\src> java Server
Server started and listening on port 1234
Client connected : 0 127.0.0.1
Client connected : 0 127.0.0.1

Kunal E:\BEIT\Sem 2\LP V\performed\Assignment6\src> java Client
Server TIme : 1.7132069E12
Client time : 1.7132069E12
Time Difference : 0.0

```
Kunal E:\BEIT\Sem 2\LP V\performed\Assignment6\src> java Client
Server TIme : 1.7132069E12
Client time : 1.7132069E12
Time Difference : 0.0
```