Assignment No.4

```
import java.util.Date;
import java.util.Scanner;
import java.text.ParseException;
import java.text.SimpleDateFormat;

public class berkeleyy {
	public static void berkeleyAlgo(String servertime, String time1, String time2) {
	System.out.println("Server Clock   = " + servertime);
	System.out.println("Client Clock 1 = " + time1);
	System.out.println("Client Clock 2 = " + time2);
	SimpleDateFormat sdf = new SimpleDateFormat("mm:ss");
	try {
	/* Converting time to Milliseconds */
	long s = sdf.parse(servertime).getTime();
	long t1 = sdf.parse(time1).getTime();
	long t2 = sdf.parse(time2).getTime();
	/* Calcuating time differences w.r.t server */
	long st1 = t1 - s;
	System.out.println("t1 - s = "+st1/1000);
	long st2 = t2 - s;
	System.out.println("t2 - s = "+st2/1000);
	/* Fault tolerant Average */
	long aveg = (st1 + st2 + 0) / 3;
	System.out.println("(st1 + st2 + 0)/3 = "+aveg/1000);
	/* Adjustment */
	long adjserver = aveg+s;
	long adj_t1 = aveg-st1;
	long adj_t2 = aveg-st2;
	System.out.println("t1 adjustment = "+adj_t1/1000);
	System.out.println("t2 adjustment = "+adj_t2/1000);
	/* sync clock */
	System.out.println("Synchronized Server Clock  = "+sdf.format(new Date(adjserver)));
	System.out.println("Synchronized Client1 Clock = "+sdf.format(new Date(t1+adj_t1)));
	System.out.println("Synchronized Client2 Clock = "+sdf.format(new Date(t2+adj_t2)));
	} catch (ParseException e) {
	e.printStackTrace();
	}
	}
	public static void main(String[] args) {
	Scanner input = new Scanner(System.in);
	System.out.print("Enter the number of clients: ");
	int numClients = input.nextInt();
	String[] clientTimes = new String[numClients];
```

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        for (int i = 0; i < numClients; i++) {
        System.out.print("Enter client clock " + (i+1) + " (mm:ss): ");
        clientTimes[i] = input.next();
        }

        System.out.print("Enter server time (mm:ss): ");
        String servertime = input.next();

        for (int i = 0; i < numClients; i++) {
        berkeleyAlgo(servertime, clientTimes[i], clientTimes[(i+1)%numClients]);
        }
        input.close();
        }
}
```

OUTPUT 👍

```
admin1@SL17:~$ javac berkeleyy.java
admin1@SL17:~$ java berkeleyy
Enter the number of clients: 2
Enter client clock 1 (mm:ss): 2:50
Enter client clock 2 (mm:ss): 3:00
Enter server time (mm:ss): 3:10
Server Clock   = 3:10
Client Clock 1 = 2:50
Client Clock 2 = 3:00
t1 - s = -20
t2 - s = -10
(st1 + st2 + 0)/3 = -10
t1 adjustment = 10
t2 adjustment = 0
Synchronized Server Clock  = 03:00
Synchronized Client1 Clock = 03:00
Synchronized Client2 Clock = 03:00
Server Clock   = 3:10
Client Clock 1 = 3:00
Client Clock 2 = 2:50
t1 - s = -10
t2 - s = -20
(st1 + st2 + 0)/3 = -10
t1 adjustment = 0
t2 adjustment = 10
Synchronized Server Clock  = 03:00
Synchronized Client1 Clock = 03:00
Synchronized Client2 Clock = 03:00
```