

Міністерство освіти, науки, молоді та спорту України  
Національний університет «Львівська політехніка»

Кафедра СШ

## Лабораторна робота №13

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```

import
java.util.ArrayList;

import java.util.Collections;
import java.util.Scanner;

class Comands{
    public int
    findMin(ArrayList<Integer>
list){
        return
Collections.min(list);
    }
    public int
    findMax(ArrayList<Integer>
list){
        return
Collections.max(list);
    }
    public int
    sum(ArrayList<Integer> list){
        int sum = 0;
        for(int x: list)
            sum += x;
        return sum;
    }
    public double
    mean(ArrayList<Integer> list){
        return
(double)sum(list)/list.size();
    }
}

class TimeChecker extends
Thread{
    long timeWork = lab13.time;
    public void run(){
        long start =
System.currentTimeMillis();
        while(
System.currentTimeMillis() -
start < timeWork){

        }

    }

    System.out.println("Program
duration: "

```

```

        +(System.currentTimeMillis() -
start));
        System.exit(0);
    }
}
class ThirdThread extends
Thread{

    public void run(){
        long start =
System.currentTimeMillis();
        try {
            Thread.sleep(500);
        } catch
(InterruptedExcepion e) {
            e.printStackTrace();
        }
        System.out.println(new
Comands().findMin(lab13.list));
        System.out.println("Third
thread duration: " + (
System.currentTimeMillis() -
start));
    }
}
class AnotherThread extends
Thread{
    public void run(){
        long start =
System.currentTimeMillis();
        try {
            Thread.sleep(500);
        } catch
(InterruptedExcepion e) {

e.printStackTrace();
        }
        System.out.println(new
Comands().findMax(lab13.list));

System.out.println("Second
thread duration: " + (
System.currentTimeMillis() -
start));
    }
}

```

```

public class lab13 extends
Thread {
    public static
ArrayList<Integer> list = new
ArrayList<>();
    public static long time =
0;
    public void run() {
        long start =
System.currentTimeMillis();
        try {
            Thread.sleep(500);
        } catch
(InterruptedExcepcion e) {

e.printStackTrace();
        }
        System.out.println(new
Comands().mean(lab13.list));

System.out.println("First
thread duration: " + (
System.currentTimeMillis() -
start));
    }

    public static void
main(String args[]) {
        Scanner scanner = new
Scanner(System.in);
        for(int i = 0; i <
10000; i++){
            list.add(i);
        }
        time =
scanner.nextLong();
        (new
TimeChecker()).start();
        (new lab13()).start();
        (new
AnotherThread()).start();
        (new
ThirdThread()).start();
    }

```

}

