

Кафедра систем штучного інтелекту

Лабораторна робота №13
з дисципліни
«Об’єктно-орієнтоване програмування»

Виконав:
студент групи КН-107
Шиманський П.С.
Прийняв:
Старший викладач
Гасько Р.Т.

Код програми:

1)

```
package week13;

class AnotherThread extends Thread{
    public void run(){
        long start = System.currentTimeMillis();
        try {
            Thread.sleep(500);
        } catch (InterruptedException e) {
            e.printStackTrace();
        }
        System.out.println(new Comands().findMax(lab13.List));
        System.out.println("Second thread duration: " + ( System.currentTimeMillis()
- start));
    }
}
```

2)

```
package week13;
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();
    }
}
```

3)

```
package week13;
import java.util.ArrayList;
import java.util.Collections;
import java.util.Scanner;
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 (InterruptedException 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();
    TimeChecker tc = new TimeChecker();
    lab13 l = new lab13();
    l.start();
    tc.start();
    AnotherThread at = new AnotherThread();
    at.start();
    (new ThirdThread()).start();
}
}

```

4)

```

package week13;

```

```

class ThirdThread extends Thread{

```

```

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

```

5)

```
package week13;
```

```
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);
    }
}
```

Результат роботи програми:

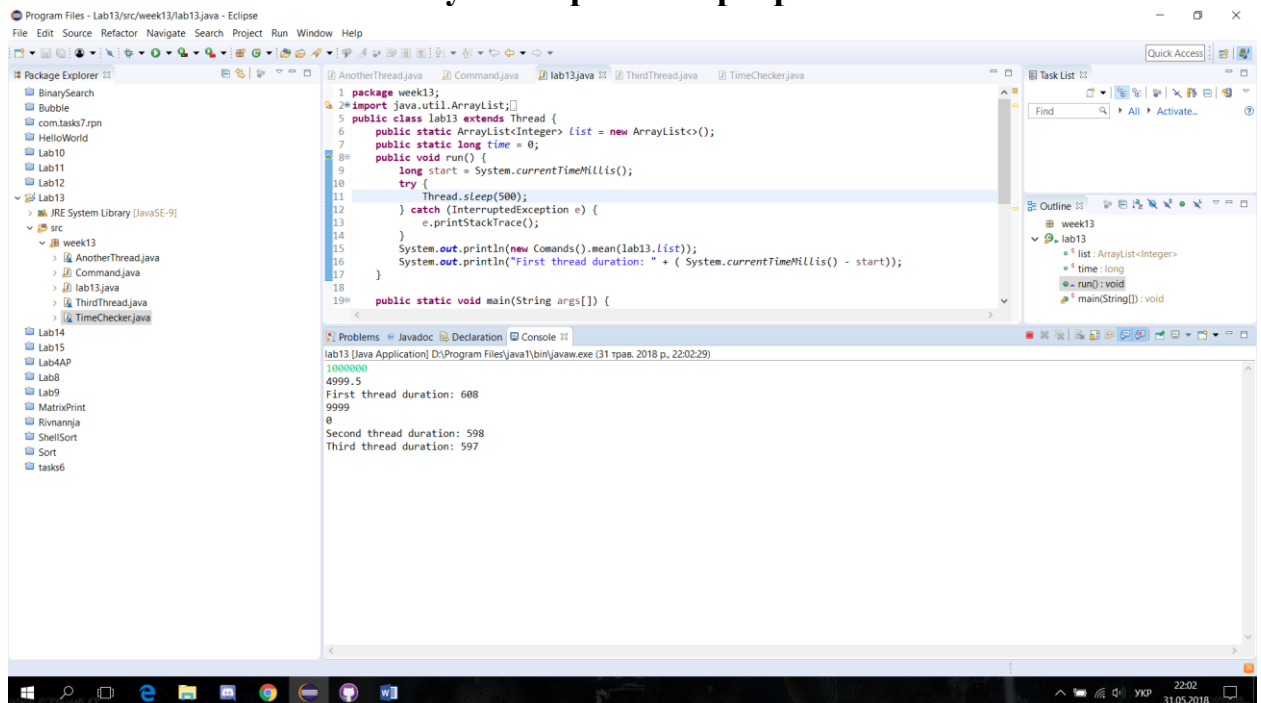


Рис.1 Результат роботи програми