Звіт
До лабораторної роботи №3
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Тема: Розширені засоби синхронізації потоків (семафори).

Java

Параметри:

```
Main main = new Main();
int storageSize = 3;  // Розмір сховища
int itemNumbers = 10; // Товари
```

Випадок 1: Один виробник, один споживач:

```
Added item 0 by Thread-0
Items number now is:1
-----------------------
Added item 1 by Thread-0
Items number now is:2
-----------------------
Added item 2 by Thread-0
Items number now is:3
-----------------------
Took item 0 by Thread-1
Items number now is:2
-----------------------
Took item 1 by Thread-1
Items number now is:1
-----------------------
Took item 2 by Thread-1
Items number now is:0
-----------------------
Added item 3 by Thread-0
Items number now is:1
-----------------------
Added item 4 by Thread-0
Items number now is:2
-----------------------
Added item 5 by Thread-0
Items number now is:3
-----------------------
Took item 3 by Thread-1
Items number now is:2
-----------------------
Took item 4 by Thread-1
Items number now is:1
```

```
Took item 5 by Thread-1
Items number now is:0
-----------------------
Added item 6 by Thread-0
Items number now is:1
-----------------------
Added item 7 by Thread-0
Items number now is:2
-----------------------
Added item 8 by Thread-0
Items number now is:3
-----------------------
Took item 6 by Thread-1
Items number now is:2
-----------------------
Took item 7 by Thread-1
Items number now is:1
-----------------------
Took item 8 by Thread-1
Items number now is:0
-----------------------
Added item 9 by Thread-0
Items number now is:1
-----------------------
Took item 9 by Thread-1
Items number now is:0
-----------------------
```

Випадок 2: Два виробники, два споживачі:

```
Added item 0 by Thread-0
Items number now is:1
------------------------
Added item 1 by Thread-0
Items number now is:2
------------------------
Added item 2 by Thread-1
Items number now is:3
------------------------
Took item 0 by Thread-2
Items number now is:2
------------------------
Took item 1 by Thread-2
Items number now is:1
------------------------
Took item 2 by Thread-3
Items number now is:0
------------------------
Added item 3 by Thread-0
Items number now is:1
------------------------
Added item 4 by Thread-0
Items number now is:2
------------------------
Added item 5 by Thread-1
Items number now is:3
------------------------
Took item 3 by Thread-2
Items number now is:2
------------------------
Took item 4 by Thread-2
Items number now is:1
------------------------
Took item 5 by Thread-3
Items number now is:0
```

```
Added item 6 by Thread-0
Items number now is:1
------------------------
Added item 7 by Thread-0
Items number now is:2
------------------------
Added item 8 by Thread-1
Items number now is:3
------------------------
Took item 6 by Thread-2
Items number now is:2
------------------------
Took item 7 by Thread-2
Items number now is:1
------------------------
Took item 8 by Thread-3
Items number now is:0
------------------------
Added item 9 by Thread-0
Items number now is:1
------------------------
Took item 9 by Thread-2
Items number now is:0
------------------------
```

Випадок 3: Три виробника, три споживачі:

```
Added item 0 by Thread-0
Items number now is:1
------------------------
Added item 1 by Thread-1
Items number now is:2
------------------------
Added item 2 by Thread-2
Items number now is:3
------------------------
Took item 0 by Thread-3
Items number now is:2
------------------------
Took item 1 by Thread-4
Items number now is:1
------------------------
Took item 2 by Thread-5
Items number now is:0
------------------------
Added item 3 by Thread-2
Items number now is:1
------------------------
Added item 4 by Thread-0
Items number now is:2
------------------------
Added item 5 by Thread-1
Items number now is:3
------------------------
Took item 3 by Thread-3
Items number now is:2
------------------------
Took item 4 by Thread-4
Items number now is:1
------------------------
Took item 5 by Thread-5
Items number now is:0
```

```
Added item 6 by Thread-2
Items number now is:1
------------------------
Added item 7 by Thread-0
Items number now is:2
------------------------
Added item 8 by Thread-1
Items number now is:3
------------------------
Took item 6 by Thread-3
Items number now is:2
------------------------
Took item 7 by Thread-4
Items number now is:1
------------------------
Took item 8 by Thread-5
Items number now is:0
------------------------
Added item 9 by Thread-1
Items number now is:1
------------------------
Took item 9 by Thread-3
Items number now is:0
------------------------
```

Ada

Випадок 1: Один виробник, один споживач:

```
C:\GNAT\2021\bin\obj\main.exe
Added item  1
Took item  1
Added item  2
Added item  3
Took item  2
Added item  4
Took item  3
Took item  4
[2024-04-25 23:01:21] process terminated successfully, elapsed time: 01.43s
```

Випадок 2: Два виробники, два споживачі:

```
C:\GNAT\2021\bin\obj\main.exe
Added item  1
Added item  1
Took item  1
Took item  1
Added item  2
Added item  2
Added item  3
Added item  3
Took item  2
Took item  2
Added item  4
Added item  4
Added item  5
Added item  5
Added item  6
Took item  3
Took item  3
Added item  6
Added item  7
Took item  4
Took item  4
Added item  7
Added item  8
Took item  5
Took item  5
Took item  6
Took item  6
Took item  7
Took item  7
Took item  8
[2024-04-25 23:53:12] process terminated successfully,
```

Випадок 3: Три виробника, три споживачі:

```
C:\GNAT\2021\bin\obj\main.exe
Added item  1
Added item  1
Added item  1
Took item  1
Took item  1
Took item  1
Added item  2
Added item  2
Added item  2
Took item  2
Took item  2
Took item  2
[2024-04-25 23:49:57] process terminated successfully, elapsed time: 00.92s
```

My GitHub: https://github.com/Artechk/ParalelLab3/tree/main/Lab3Java