

If it is possible, implement with a **minimum** number of semaphores, a complete serialization (for all variables) between *read* and *write*, such that the **read** operation is always done **after** the **write** operation.

Specify the **number**, **type** and **initial values** of the necessary semaphores.

If a complete serialization is not possible (for all the variables), give the solution for a partial serialization and specify for which variable(s) the serialization is impossible.

In your partial serialization consider as more important having:

- a) high concurrency vs. minimum number of semaphores
- b) Minimum number of semaphores vs. high concurrency

Thread A

```
{  
  write z;  
  read x;  
  write y;  
}
```

Thread B

```
{  
  read z;  
  read y;  
  write x;  
}
```