

## Lab Exercise 1

### On Multiprogramming with time-sharing systems

1. Generate a random number of **resources** (1-30). Label them by resource number, between 1-30.
2. Generate a random number of **users** (1-30). Label them by user number between, 1-30.
3. Generate the random resource that a user will need and the length of the time that the **user** will use the **resource** (1-30 seconds). The resource(s) that a user will request must only be those randomly generated resources (from #1).
4. The program should be able to display the status of the **resources**, including the **user** currently using the **resource**, the time (or time left) that the **user** needs to use the **resource**.
5. The program should also be able to list the **users** “in waiting” of a resource, if there are any, and when these **users** will be able to start using the **resource**.
6. Finally, the program should be able to say when the **resources** will be free of **users** (meaning, no user needs to use the resource).

#### Additional specs:

- A user can only request for a specific resource once. User cannot request for a resource multiple times.
- User request is to be sorted according to priority (by order number, in increasing order)

**NOTE:** As to the order of the usage, just base it on the user number. You may use any language for implementation.