The second project: A hybrid scheduling algorithm (Round Robin+Priority)

In this task, students should design a virtual simulation to present a hybrid scheduling algorithm which uses Round Robin and Priority algorithms together. The hybrid algorithm run as:

- Whole system can be considered as <u>four parallel threads run on one CPU</u>: the scheduling, the creation, the termination, and the blocking.
- Each process must be represented by a circle object on screen.
- The scheduling thread uses mainly Round Robin. The quantum interval for each process depend on priority value (P) of that process, and generally the quantum interval must be computed as (0.1*P) seconds. The priority values must be between 1 and 4 ($1 \leq P \leq 4$).
- Use only colors to show decisions of scheduling algorithm, you don't need to change positions of the circles. If a process is in "Running state", its circle must be colored by green. Use red for "Blocked state" and yellow for "Ready state".
- The system must be started with only two processes.
- Depending on the probability of creation, the creation thread may create a new process with a random priority value in each second. The probability of creation is 0.6 at start.
- Depending on the probability of termination, the termination thread may terminate a process in each second. At start, the probability of termination is 0.5.
- Depending on the probability of blocking, the blocking thread may block running process in each second. At start, the probability of blocking is 0.2.
- At running time, user can change all probability values (creation, termination, and blocking).

Deadline: May 3, 2015

NOTE: To be applicant for oral presentation of the project, students have to upload their source codes onto moodle system. If student does not come to oral presentation, his/her project does not be evaluated. We are not responsible for any confusion in moodle system because of overload on last day. Projects sent by e-mail will not be evaluated.