# Project 7 – Punch'em Videogame

Consider a punch'em videogame where your avatar meets two type of enemies: *minions* and *bosses*. Fighting either of them until defeat takes some time (see later on) and they arrive with some interarrival times. The rule of the game is such that you can fight only one opponent at a time. When you are fighting a *minion* and a *boss* arrives, you stop fighting the minion and fight the boss instead. A fight lasts until the opponent is defeated. However, when you fight a boss, the minion that you were fighting earlier *recovers some health*, at a rate which is x% of the rate at which you deplete it when fighting it.

A defeated opponent leaves the game. Opponents of the same class queue up one after the other and are fought in a FIFO order.

Study the number of minion and bosses fought in the unit of time as a function of the arrival rates of both types of opponents. Study the queueing time of both types of opponents.

More in detail, at least the following scenarios must be evaluated:
- Exponential distribution of the interarrival times for the opponents and fighting times.

In all cases, it is up to the team to calibrate the scenarios so that meaningful results are obtained.

Project deliverables:
   a) Documentation (according to the standards set during the lectures)
   b) Simulator code
   c) Presentation (up to 10 slides maximum)