ECE697AA Project

Question 1

$e_c = 1$: new slice request from class c arrives
$e_c = -1$: slice's response are being released to the system's resource
$e_c = 0$: otherwise

$$r(s, a_s) = \begin{cases} r_c & \text{if } e_c = 1,\ a_s = 1 \text{ and } s' \in \mathcal{S} \\ 0 & \text{otherwise} \end{cases}$$

(s': following state s' is in $\mathcal{S}$)

$a_s = 1$ if arrival slice is accepted
$a_s = 0$ otherwise

- Formulate network provider's resource allocation problem as a centralized optimization problem

→ Goal: reward maximization

$$\max r(s, a_s) \quad \text{s.t. } s': \theta, \Omega, \Delta \in \mathcal{S}$$

r_c ~ slice from class c that requires r_c^{re}, w_c^{re}, g_c^{re}

r_c^{re} ↑ radio, w_c^{re} ↑ storage, g_c^{re} ↑ computing