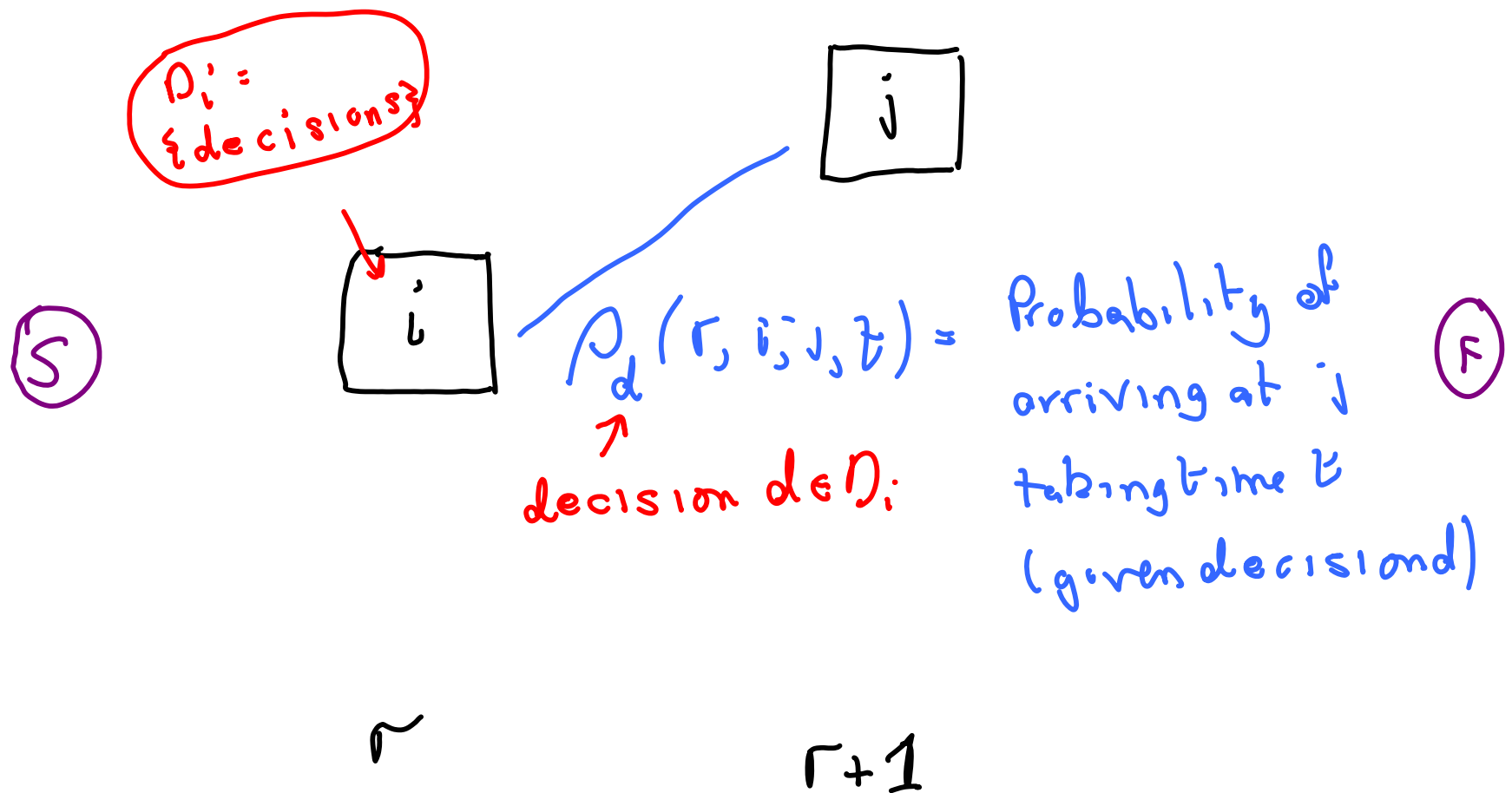


9/09/09

Add probability to the "max".



Problem: choose for each (r, i) a decision $d^*(r, i) \in D_{i,r}$ that minimises the expected time to go from S to F .

$$f_r(i) = \text{minimum expected time to get from } (r, i) \rightarrow F$$
$$= \min_{d \in D_{i,r}} \left[\sum_{j \in E} P_d(r, i, j, t) \{t + f_{r+1}(j)\} \right]$$

decision first, dice roll second

Roll dice, make decision:

$$\begin{aligned} & \rho(r, i, \{(j, t_j) : j = 1, 2, \dots, N_{r+1}\}) \\ &= P_r(\text{time to go from } i \text{ to } j \text{ is } t_j \text{ for } j = \\ & \quad 1, 2, \dots, N_{r+1}). \end{aligned}$$

Let X denote a possible outcome of
 $\{(j, t_j) : j = 1, 2, \dots, N_{r+1}\}$

$$f_r(i) = \sum_X \rho(r, i, X) \min_j (t_j + f_{r+1}(j))$$