The itinerary requests arrive over the decision horizon $\{1, \dots, \tau\}$. The probability of having a request for itinerary j at time period t is p_{jt}. The capacity on flight leg i is c_i. The revenue associated with itinerary j is r_j. We assume that there are no group arrivals.

In all of the test problems, we consider an airline network that serves N spokes out of a single hub. Associated with each spoke, there are two flight legs, one of which is to the hub and the other one is from the hub. There is a high-fare and a low-fare itinerary that connects each origin-destination pair. Consequently, we have $2N$ flight legs and $2N(N+1)$ itineraries, $4N$ of which involve one flight leg and $2N(N-1)$ of which involve two flight legs. The revenues associated with the high-fare itineraries are κ times larger than the revenues associated with the low-fare itineraries. We write $i \in j$ if itinerary j uses flight leg i. Since $\sum_t \sum_j p_{jt} \, \mathbf{1}(i \in j)$ is the total expected demand for the capacity on flight leg i, we measure the tightness of the leg capacities by

$$\alpha = \frac{\sum_t \sum_i \sum_j p_{jt} \, \mathbf{1}(i \in j)}{\sum_i c_i},$$

where $\mathbf{1}(\cdot)$ is the indicator function.

For all of the test problems, the names of the input files are of the form $\mathrm{rm} - \tau - N - \alpha - \kappa$.txt, where τ, N, κ and α are as defined above. The locations are indexed by $\{0, 1, \dots, N\}$, where 0 corresponds to the hub and $\{1, \dots, N\}$ correspond to the spokes.

- The first section in the input files gives the value of τ.
- The second section in the input files gives the flight legs. Each line lists the origin location, destination location and capacity on the flight leg (c_i). The first line of the second section gives the number of flight legs.
- The third section in the input files gives the itineraries. Each line lists the origin location, destination location, fare class (0 for cheap, 1 for expensive) and the fare (r_j) associated with the itinerary. We note that if the itinerary starts from a spoke and ends at a spoke, then this itinerary is a two-leg itinerary with a connection at the hub. If the itinerary starts from or ends at the hub, then this itinerary is a single-leg itinerary. The first line of the third section gives the number of itineraries.
- The fourth section in the input files gives the probability of having a particular itinerary request at a particular time period. Each line first lists the time period, and then, lists the probability of having a request for a particular itinerary at that time period. The triplets $[a, b, c]$ in this section correspond to an itinerary starting from location a, ending at location b and corresponding to fare class c. The number following the triplet is the probability of having a request for this itinerary (p_{jt}). The probabilities in a particular line may not add up to 1, whenever there is a chance of having no itinerary requests at a particular time period.