**Process:**

I have made simple network flow function, which takes input in form of matrix. For matrix, I have considered 24 nodes for each airport, starting from 0 to 23. Each node represents airport and departure hour.

**Steps:**

Data Input - > **Data To matrix logic ->** Matrix input - > Network Flow Algo -> max flow number

From step 2 everything else is like normal Network flow algo.

So problem statement boils **Data to Matrix** logic.

**Observations:**

* As we need to calculate from 6 AM to 5:59 AM second day. Our all data is in 1 hr difference format. So we just need to calculate till 5AM next morning.
* Multiple nodes will be there of source and sink airport. So make dummy node at the starting and end to aggregate the result.

I have made 242\* 242 matrix and initialize all to zero.

24 nodes per airport, such 240 nodes and 2 nodes for two dummy nodes.

Matrix graph [i][j] represents the capacity of edge from node I to node j.

* To make edges, I have considered 3 steps-
  + draw edges for dummy nodes- *(This will take care the problem to aggregate answer)*

From dummy source node to all LAX nodes, created edge for infinity capacity.

From all JFK nodes to dummy sink node, created edge for infinity capacity

* + draw edged for lay over *(This will take care of Layover cases)*

Making the edge between two nodes of same airport if departure time is more the sink.

* + draw edges for actual flight

Edges between given data

**To run the program-**

Just run the ***dbhosale\_foa.py*** file. Required data is present in data folder.

You will get max flow from LAX to JFK printed in the console.