

Fall 2017 - W205 – Storing and Retrieving Data
Week 12 Live Class Session Agenda
Kevin R. Crook

Schedule

- Lab 9 – due Tuesday, 12/5/2017 at 11:59 pm
 - Graph Analysis using Neo4J Graph Database
- Lab 10 – due Tuesday, 12/19/2017 at 11:59 pm
 - Spark Streaming
- Asynchronous for next week
 - Unit 13 – Advanced Topics

Project

- Milestones
 - Final Presentations
 - In class
 - Thursday classes: 12/14/2017
 - Tuesday class: 12/19/2017
 - 20 minute presentation per project team
 - All materials must be checked into GitHub repo prior to class time
 - Weeks in which we do not have a formal milestone – we will spend 3 to 5 minutes going round robin through the project teams

Today in class

- Project
 - Not a formal milestone, quick round robin
- Break Out Exercise
 - Airlines Graph Problems – Airline Schedule

Break Out Exercise – Airlines Graph Problems – Airline Schedule

- Maximize utilization of aircraft
 - Want to schedule as many flights as possible to make use of the aircraft we are leasing
- Maintenance
 - Checks must be scheduled prior to a certain number of flight hours or cycles (a take off and landing)

- Example: “A-Check” – goes illegal at 38 hours or 40 cycles
 - Most domestic aircraft fly around 10 hours per day
 - We want a plane to land at 37 hours at 11pm at an airport that we have a maintenance base at that has an open slot for an A-Check that night
- Overwater aircraft
 - Some routes require overwater aircraft
 - Other routes don’t require, but it’s nice to have
 - Dallas to Miami – better to fly over the Gulf
 - East coast or West coast – better to fly over the water than land because it’s less crowded – give you an alternative route
 - Mileage Tax – free over international water
- Landing slots
 - Some airports have landing slots – we pay for them – we can only land an aircraft during the landing slot time slot
 - Expensive to “spoil” a landing slot – we miss it
- Certain aircraft can only land at certain airports
 - High altitude – Albuquerque, Denver, etc.
 - Runway length
 - Heat restrictions
 - Ice restrictions
 - Noise restrictions
- Certain Markets have certain times of day / week that are more profitable
- Union Rules – Pilots and Flight attendants
- Fuel – prices vary by location – further from Houston or New Orleans the more expensive
- Taxes
 - Pay by the mile for over land
 - International water is free
 - US is cheapest in the world, Mexico and Canada among the most expensive
- Some routes are subsidized – Mayo Clinic
- Irregular Operations
 - Bad weather, mechanical delays, etc.
 - Have to dynamically change the schedule
 - Mechanical trouble
 - Which flight do we cancel? Flyovers?