

## Assignment 1: Familiarization with Aviation Data Sets

Date Due: January 28, 2016




Professor: Dr. Trani

**Problem 1**

Briefly answer the following questions:

b) Identify the commercial aircraft presented in the Table 1. State the ICAO Design Code, Taxiway Design Group (TDG) and Aircraft Approach Class (AAC). Here is a list of possible choices (more choices than pictures to add a little challenge): Boeing 747-400, Bombardier DHC-8C (Dash-8), Airbus A330-200, Boeing 787-8 Dreamliner, Boeing 737-900, Boeing 717-200, Bombardier CRJ-900, Airbus A380-800, Airbus A340-600, Airbus A319, Embraer 145 and Embraer 195.

Table 1. Aircraft for Problem 1. All Pictures by A.A. Trani.

Picture	Aircraft Name	ICAO Code Element 2
		
		
		

Picture	Aircraft Name	ICAO Code Element 2
		
		
		
		
		

## Problem 2

Table 2 shows a sample of flight operations for Pudong International Airport (PVG) for a typical day in July 2015. The data has been collected from the [Official Airline Guide \(OAG\)](#). Each group will be assigned a different airport.

- Estimate the number of arrivals and departures at the airport you were assigned during the typical day.
- Estimate fleet mix for your airport. This implies finding the percent of operations of each aircraft type at the airport. For example, Chicago O'Hare has 37% of operations by Bombardier E170 aircraft.
- For the five most heavily used aircraft at the airport, find the ICAO Airport Reference Code Element 2. Refer to the aircraft classification spreadsheet provided in class or use the reference information from the course notes.
- Find the average seating capacity of a flight at the airport. Plot a distribution of seats at the airport. Comment on the observed trends.
- Find the average distance flown for departures at the airport in question. Plot the distribution of the average distance flown.
- Plot a histogram of the number of departure flights as a function of local departure time. Do a histogram that "bins" all departures within a 15 minute period together.

Table 2. Sample Shanghai Airport Daily Flight Operations.

A	B	C	D	E	F
DepartureAirport	ArrivalAirport	AircraftName	FlightTime_hrs	Seats	Distancet_StatuteMiles
PVG	CXR	Airbus A321	4.00	176	1546
PVG	DEL	Boeing 787-8	6.50	256	2665
NRT	PVG	Boeing 777-200/200ER Passenger	3.25	345	1115
KWL	PVG	Boeing 737-800 Passenger	2.33	166	823
SHE	PVG	Airbus A320	2.17	151	731
OKA	PVG	Airbus A330-200	1.92	264	491
PVG	NGO	Airbus A321	2.75	185	904
PVG	SYX	Airbus A321	3.42	177	1177
MUC	PVG	Airbus A340-600	10.92	281	5452
HKG	PVG	Airbus A320	2.17	158	780
HKG	PVG	Airbus A320	2.50	158	780
CGQ	PVG	Airbus A320	2.58	157	912
BKI	PVG	Boeing 737-800 Passenger	4.33	160	1779
PVG	CAN	Airbus A320	2.50	151	747
PVG	TSN	Airbus A320	2.17	158	606
NRT	PVG	Airbus A330-300	3.08	300	1115
PVG	HKG	Airbus A330-300	2.75	307	780

## Problem 3

Use [badui.com](#) Maps or [bing.com](#) Maps to report the airport features of the airport assigned to your team.

- How many runways does the airport have? Hint: use the measurement tools in Badui/Bing maps or use the internet to research the airport characteristics.
- How many airport terminals can you identify at the airport?
- State the approximate number of gates at the airport. For this analysis count the gates that have direct connectors to the aircraft.