NLPMT
NLVolo
Assignment 2

Introduction

The aim of this assignment is to develop a NL front end to a flight database derived from MIAs website (http://www.maltairport.com), which looks like this through a browser

Airline	Left From	Flight	Craft	SCH	EST	Remarks
AIR MALTA	ZURICH	KM 491	320	20:00	20:33	LANDED
SWISS INTERNATIONAL AIRLI	ZURICH	LX 4370	320	20:00	20:33	LANDED
AIR MALTA	HAMBURG	KM 369	319	20:55	20:43	LANDED
AIR MALTA	BERLIN - TEGEL	KM 377	32R	22:05	21:52	
RYANAIR	BRISTOL	FR 3774	738	22:20	22:23	
ETIHAD AIRWAYS	BRUSSELS	EY 7298	320	22:35	22:23	
BRUSSELS AIRLINES	BRUSSELS	SN 4001	320	22:35	22:23	
AIR MALTA	BRUSSELS	KM 421	320	22:35	22:23	
AIR MALTA	FRANKFURT	KM 329	320	22:50	22:44	
LUFTHANSA	FRANKFURT	LH 6304	320	22:50	22:44	
AIR MALTA	CATANIA	KM 643	320	23:10		
MERIDIANA SpA	CATANIA	IG 9243	320	23:10		
ETIHAD AIRWAYS	HEATHROW	EY 7293	319	00:40		
AIR MALTA	HEATHROW	KM 103	319	00:40		
RYANAIR	CIAMPINO	FR 7591	73H	08:50		
RYANAIR	MADRID - BARAJAS	FR 5382	73H	09:55		
AIR MALTA	ISTANBUL	KM 2701	321	10:20		
TURKISH AIRLINES	ISTANBUL	TK 1369	321	10:20		
RYANAIR	LEEDS	FR 2448	73H	11:15		
AIR MALTA	ROME	KM 613	320	11:45		
MERIDIANA SpA	ROME	IG 9213	320	11:45		
EASYJET	GATWICK	EZY 8823	320	11:45		

The assignment is worth **25%** of the study unit.

Example Interactions

Clearly, many different kinds of QA are possible from this data. In this assignment, we focus on two types of question:

Yes/No Type: (requiring yes/no answer)
User> Are flights arriving from Zurich/Do flights arrive from Zurich? Did the Air Malta flight from Zurich arrive?
System> Yes
WH Type: (requiring factual answer). Examples include
User> When does KM481 arrive/What is the time of arrival of KM481/the flight from Zurich
System> 20.33
User> What flights arrive from Zurich?
System> KM481 and LX4370

> How many flights are there from Brussels?
System> There are 3
>When does Etihad leave for Heathrow
System > 00:40

NB. These are just examples. It's up to you to define the questions that your system will accept

Tasks

1. Build Prolog database from the website. The aim here is for arrival and departure data at the above website to be represented as a set of Prolog clauses e.g arrive('Air Malta', 'Zurich', 'KM491', 320, '20.00', '20.33', 'Landed'). [1](20%)
2. Develop a DCG grammar to handle the questions. Note that as above there may be several different ways to ask the same question (20%)
3. Add semantics to grammar (20%)
4. Build DB query system (20%)
5. Report (20%)

Deadlines

The deadline for this assignment is **Fri 15th April**

Queries

Please use the NLPMT Chat forum for general clarification queries so that everyone can see the answers. Otherwise email is fine too

[1] You will get a passing grade for this task if you write the database by hand, but more marks if you develop an algorithmic means e.g. you could write a DCG to parse the raw text obtained from the page source. Top marks of you build the database by scraping the website and building the Prolog database on the fly. For those so inclined, an SWI Prolog web programming tutorial is available at http://www.pathwayslms.com/swipltuts/html/