Inf1B Data and Analysis
Tutorial 2 (week 4)

28 January 2009

- Please answer all questions on this worksheet in advance of the tutorial, and bring with you all work, including printouts of any computer work. Tutorials cannot function properly unless you do the work in advance.
- Data & Analysis tutorial exercises are not assessed, but are a compulsory and important part of the course. If you do not do the exercises then you are unlikely to pass the exam.
- Attendance at tutorials is obligatory; please let your tutor know if you cannot attend.
- *Required Reading:* Chapter 3 (The Relational Model) of 'Database Management Systems' (Raghu Ramakrishnan and Johannes Gehrke, 2003). The relevant pages of these chapters can be found on Google Books (`http://books.google.com/`).

Introduction

In the previous tutorial, you designed an ER model for a database, based on a description of an inter-university gliding competition scenario. In this tutorial, you are asked to map the ER model to a relational schema, using the techniques described in the lectures.

Question 1 - Mapping ER to relational schemata

For this question, please use the ER model provided at the end of this tutorial sheet. Think about how the entity sets and relationship sets can be mapped to tables in a relational schema. Then state the SQL `create table` statements to define *all* the relations required to create this database. Note that in these SQL statements you will also need to define any *key* and *foreign key* constraints.

Tutorial Discussion

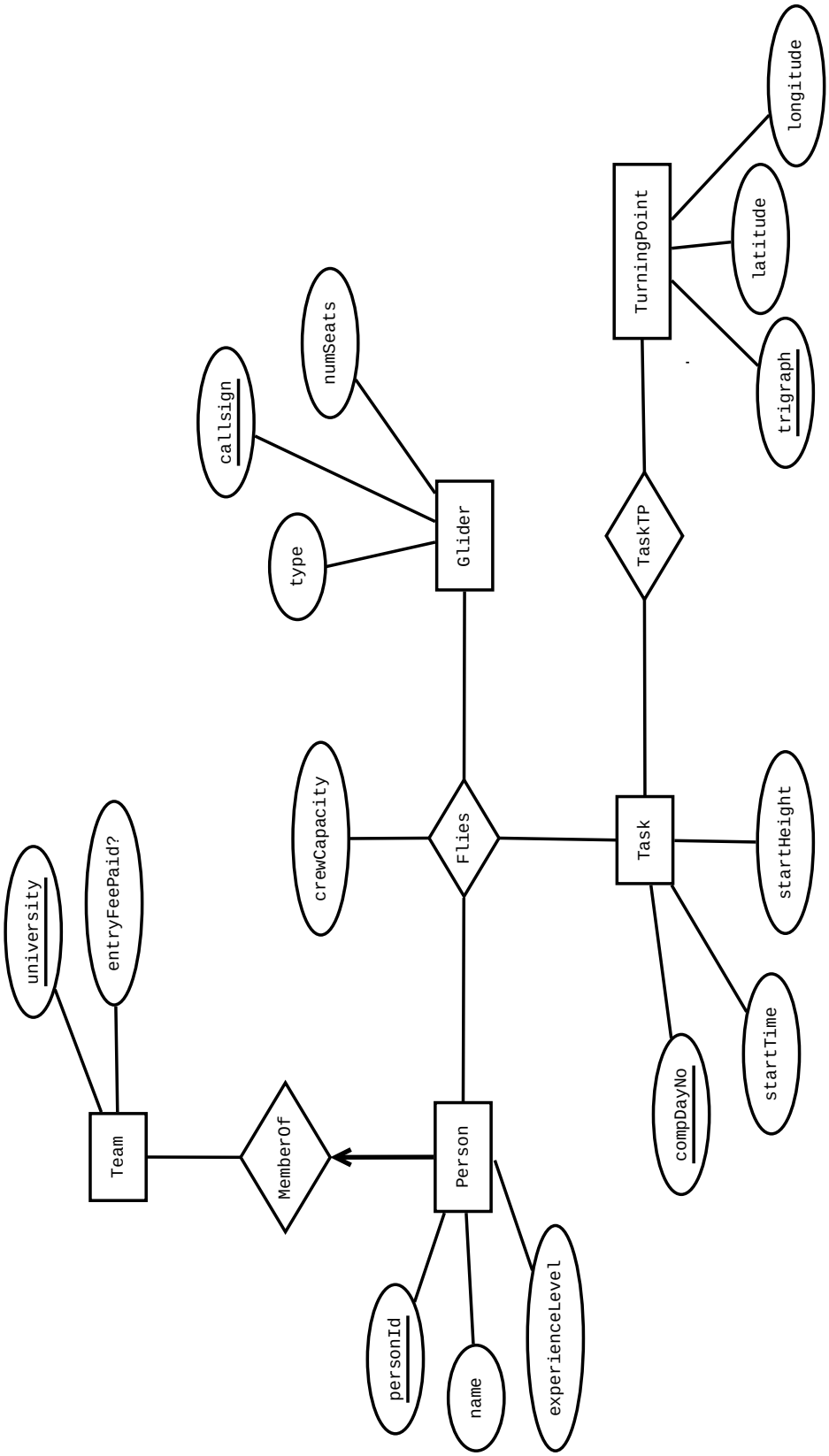
Look at the relational schema that you have created for the previous question. Justify the following design decisions that you made.

(a) Look at your choice of tables, their fields and types. Are there other ways they could have been designed? Explain your preferences.

(b) In your schemas, which fields are not allowed to take a *null* value? Are there any that you should disallow from taking a null value? What constraints can you establish by preventing the fields from taking a *null* value?

(c) Reflect on your schema design. Does it make sense to use any *on delete cascade* commands in your SQL statements?

ER Model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MemberOf
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personId
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