Molly

by

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Faculty of Science

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Abstract

Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris.

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Chapter 1

Introduction

1.1 Data Representation

The data from the database is represented in various data structures. There are separate representations for each type of data: values, entities, and entity groups.

1.1.1 Value

Definition 1. A **Value** represents a single piece of information. To avoid repetition, each value is unique. That is, $\exists!\ v \in V$, where v is a value in the set V of all values.

1.1.2 Entity

Definition 2. An **Entity** is a collection of attributes, a_n, each mapped to a single value, v_n. An entity also includes additional information such as a unique identifier.

id	$T_n \vert v_{id}$
a_1	v_1
a_2	v_2
$\vdots$	$\vdots$
a_n	v_n

Figure 1.1: The structure of an entity

Entities are analogous to rows in a database table. Thus, the unique identifier is generated based on the table name, T_n, as well as unique key in the table, v_{id}. The unique key identifies the row, and the table name identifies the table. Together they uniquely identify the entity within the entire database.

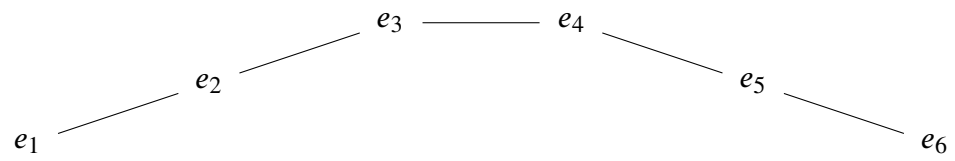
$\exists!\ e_{id} \in E$, where E is the set of all entities.

1.1.3 Entity Group

Definition 3. An **Entity Group** joins together two or more entities. These entity groups can also have attributes, a_n, and values, v_n, associated with them much like entities.

e_L	$[e_1, e_2, \ldots, e_n]$
a_1	v_1
a_2	v_2
$\vdots$	$\vdots$
a_n	v_n

Figure 1.2: The structure of an entity group



1.2 Ford-Fulkerson

Ensure: $1 = 1$

Chapter 2

Moar Source Code

2.1 Ford-Fulkerson

```
(defn ford-fulkerson
  [G src]
  (loop [queue [src]
         seen  #{src}
         seen-all #{}
         dist  {src 0}
         prev  {src nil}]
    (if (empty? queue)
      [dist prev seen-all]
      (let [v1 (first queue)
            queue (rest queue)
            [seen seen-all dist prev add-to-q]
              (update-neighbours G v1 seen seen-all dist prev)]
        (recur (concat queue add-to-q) seen seen-all dist prev)))))
```