Racer (number 9)

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Chapter 1

Instructions

1.1   How to generate the report

Write what you want in the appropriate section of the `DoeJohn.tex` file, then type

```
make zap ; make ; make clean.
```

1.2   How to upload your work

1. Create archive `DoeJohn.tgz`:

   ```
   tar zcvf DoeJohn.tgz DoeJohn.tex DoeJohn.tex
   ```

2. copy the archive to `c30`:

   ```
   scp DoeJohn.tgz codeiai@c30:
   ```

Chapter 2

Weekly Progress

2.1   Week 6: 06.11.2014

-First run of RacerPro. -Run Examples. -Pray for power from God.

Chapter 3

Midterm Report

3.1 System Purpose

RacerPro is able to implement knowledge based representation systems. We are able to define concepts in a A-BOX and in a T-Box. Actually, the concepts are defined in the same file and Racer sepates them. Generally speaking, the T-box represents the conceptual knowledge. More precisely, the content of RacerPro T-boxes includes the conceptual modeling of concepts and roles as well. Therefore, the signature of a T-box consists of two disjoint sets: the set of concept names C, also called the atomic concepts, and the set R containing the role names. The A-boxes contain knowledge about the instances of a domain. An A-box contains assertions about individuals. The set of individuals I is the signature of the A-box. The set of individuals must be disjoint to the set of concept names and the set of role names(the components of a T-box previously described). In the RacerPro system each A-box refers to a T-box. The concept assertions in the A-box are interpreted with respect to the concept axioms given in the referenced T-box. The role assertions are also interpreted according to the role declarations stated in that T-box.

3.2 Studied Example(s)

-University.racer (Ciugudean_Mihaela) -MilitaryDb (Cobarzan Petrut)

3.2.1 Explained Input

3.2.2 Explained Output

3.3 Algorithm

3.4 How to run

Step by step instruction for running the example you have studied.

- open RacerPro using the terminal
- open RacerPorter

- Connect to localhost

- load *.racer example

- now we can see the A-Boxes and the T-Boxes. Also we can see a taxonomy of the realtions in the Taxonomy tab.

3.5   Other issues

3.6   How to install

3.6.1   Requirements

whan programs, libraries etc. are needed for the system to work.

3.6.2   Installing steps

Step by step install instructions for installing the program.

3.7   Proposed problem

-create a database refering to a medical system -role is-pacient-of -concept doctor -concept pacient

Chapter 4

Weekly Progress 2

4.1   Week 9: 27.11.2014

Chapter 5

Final Report

5.1 Specification

My project name will be MedicalDb, meaning that the knowledgebase implemented ilustrates a medical system. I will implement a "database" using RacerPro for the management of a medical system. In a medical system the actors are: - the pacients (which are persons)

- the medical-staff (like medics, asisstants, dentists, pharmacists etc) - the students (simple soldiers or ranked soldiers, they study, they get marks, they are promoted to a hiher rank).

B.Implementation

The code specifing the TBox the ABox and the predefined queries can be found in the file "Medical.rarcer". After a full-reset of the RacerPro server and RacerPorter GUI, load this file.

The predefined queries must be executed before any real query will be asked. Generally those queries will fill the ABox with temporary, volatile assertions. Like in a realtional database, in a RACER knowledge base, we can not impose rules like "all the entries of a table are in some relation with all the entries of another table". We can impose a rule like a many-to-many relationskip or primary or foreign key relationship between two concepts, but not "all-to-all". So the prerequired queries will fill the ABox with all the assertions necessary for an "all to all relationship".

Lets talk a little bit about the code. The atomic concepts are:

:atomic-concepts (

;;; persoane/top persoana pacient tratament personal-medical diagnostic

;;; personal-medical farmacist asistent medic dentist

;;;asistenti infirmier brancardier sora

;;;medici nutritionist generalist radiolog

;;;medici generalisti medic-clinic medic-paraclinic

;;;medic paraclinic medic-de-familie

)

I assume the fact that the usage of english and romanian is not a plus, but I also assume everything is easy to be understood. As a remark I would like to say that tratament refers to a concept differs from a cure to dissease. It means something more like a conjunction of a pacient sent by his family doctor for

further investigations and diagnosis to a specialist doctor, assisted by a specific nurse. The same person with the same problem can have different treatments

The main roles are:

:roles ((is-pacient-of :inverse is-medic-of :domain pacient :range medic)

(is-assistant-of :inverse is-assisted-by :domain asistent :range medic)

(este-sub-tratament :inverse pacientul-sub-tratament :domain pacient :range tratament)

(medic-curant :inverse se-ocupa-de-tratament :domain tratament :range medic-clinic) (a-cerut-tratament :inverse tratament-cerut-de :domain medic-de-familie :range tratament)

(este-medicul-de-familie :inverse are-medicul-de-familie :domain medic-paraclinic :range persoana) (tratament-asistat-de :inverse asista-la-tratament :domain tratament :range asistent

) (diagnostic-current :domain tratament :range diagnostic)
)

Short description of the relationships:

- -is-pacient-of : a person that becomes the pacient of a medic

- -is-assistant-of : a person becomes the assistant of a medic

- -este-sub-tratament : when instatiating a tratament this relationship associates to the treatement the person under investigation

- -medic-curant : defines a specialist medic that contributes to a specific treatement

- -a-cerut-tratament : defines the family doctor which has requested the treatement

- -tratament-asistat-de : defines an assitant that helps in the treatement

- -este-medicul-de-familie : defines the family doctor for an individual

- -diagnostic-current : associates a diagnostic to a treatement

There are 3 kinds of individuals: persoane, tratament and diagnostic

:individuals (Tudor Ciomu Andreea Calin Raul Vlad Dobrescu Todoran Niculina Pierre Timea Flaviu T1 T2).

Example Queries:

- (retrieve (?x) (?x pacient)) = get all pacients

- (retrieve (?x) (?x medic)) = get all medics

- (retrieve (?x) (?x asistent)) =get all asistents

- (retrieve (?x) (?x T1 asista-la-tratament)) =get all asistents of a treatement

  (?X Niculina)