Discorso Inglese

Slide 1:

What are we going to talk about? I wanted to divide the slides of the presentation into 4 fundamental points: Context and purpose, Classes and properties, Graphic representations and queries on ontology.

During this presentation I want to talk about the fundamentals of the ontology and its implementation, the presentation of the classes, as well as the objects and data properties of the ontology of mobile applications, examples of queries, but also screens of the Protéjé application for creation and modification of ontologies.

Slide 2:

Mobile applications are a very striking example of developing a complex ontology and capturing the links between their classifications. It is an extremely dynamic field, with many producers, mostly well-known, and with an important role in the market, but also small teams of developers or in some cases even a single developer.

The purpose of the ontology is to provide an overview of the modeling and classification of mobile applications, along with some concrete examples.

Slide 3:

To create the ontology, 55 classes were used, which designate the areas of interest most important to users of mobile applications.

• The AppCategory class represents the largest and most well represented ontology class: among the subclasses we mention: Lifestyle, Fitness, Games, Education, Social Networking, etc.

• Each concrete example of the application is represented as an instance of an AppCategory subclass.

Each application taken as an example for the ontology is an instance of one or more subclasses of the AppCategory class, represented in the figure on the left.

In order to dynamically and correctly populate the data properties of each of the 30 individuals of the AppCategory class, a python program has been developed capable of making http requests on the play store and on the app store with the aim of extracting truthful information.

Slide 4:

This class is intended to represent the structures of the telephone to which the application can request access, in the form of a request for access privileges from the telephone of the user on which the application is installed.

• As subclasses we specify: Accelerometer, Camera, GPS, Microphone.

Slide 5:

The Platform class represents the mobile platforms for which applications can be deployed, such as Apple's iOS platform, Google's Android, and Microsoft's Windows Phone.

Slide 6:

The Producer class models the producers of mobile applications, the independent entities responsible for the creation, launch and subsequent management of bugs delegated to an individual or a team of Developers.

Slide 7:

The Device class refers to some important mobile devices used in the ontology. It is useful to represent this class since each Device instance has its own peculiarity and its own operating system and not all applications can be installed on it.

Slide 8:

Each application uses a specific programming language.
Usually in software development we divide a programming language into Front-end and Back-end and this abstraction will then be represented by an object property that will be described later. In application development, it is important to distinguish the two language paradigms since both are not always used.

Slide 9:

The Developer class is a subclass of Person. It is important to represent this class in order to connect applications with their developers and with their Producers.

Slide 10:

The Nation class is intended to connect the headquarters and branches of manufacturers and the places of birth or residence of the persons represented.

Slide 11:

The properties in Protege to create ontologies are of two types Object property and Data property.
The former relate individuals to other individuals, while the latter relate individuals with literal data (eg Strings, numbers, date and time, etc.).

As shown in the figure in the slide, 19 data properties and 19 object properties have been created which will be shown on protégé in a very short time, at the end of the presentation together with the queries, if that's okay for you.

Slide 12:

This slide shows the graphic representation of the entire ontology through a web application called WebVOWL, very similar to the "Eddy" software developed by the guys from OBDA Systems at Sapienza. This software provides graphical representations of the classes of the entire ontology connected to each other through dashed arcs that represent the subclasses and contiguous arcs that represent the relationships that bind these classes.

Slide 13:

Once the ontology is complete, the model created can be queried for a better understanding of the classification.
DL queries and SPARQL queries were performed directly on Protégé.
The queries and their results are in my GitHub repository which I am now going to show.

Slide 14:

Thanks for your attention. Below are the links to the github repository containing a more detailed report, the slides, the entire project and the queries that I am now going to show.