**Politecnico di Milano**

**5th School of Engineering**



Big Gym

Hypermedia Applications (Web and Multimedia) Project

# **IDM C/L/P D**esign **D**ocument

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# Purpose

This document aims to describe the design and prototyping steps taken for “Big Gym” web application assigned as part of a project of the “Hypermedia Applications (Web and Multimedia)” course at Politecnico di Milano.

# Brief introduction

The document provides detailed web application development procedure. Starting from the conceptual design, upgrading it to logical design and, finally, page design. After page design is introduced, it is going serve as the basis for interactive mockup development and will be described at the end of this document. In order to declutter and keep the document on point, we have left out the legend i.e. the meaning of all the symbols used in schemas and decided to treat it as a given. Explanation of all the symbols used can be found in the course's lesson slides.

# Conceptual design (C-IDM)

Conceptual design is made with respect to the specifications published in the reference document “BIG\_GYM\_project\_HYP2014-15-Beep-V2” that was provided by professor Franca Garzotto.

Short outline:

**SINGLE TOPICS**

**1. OUR GYM**

**2. Location**

**3. Testimonials**

**4. Overall schedule**

**5. FEEs and registration**

**6. Our Equipment**

**MULTIPLE TOPICS**

**1. Instructor [10-30]**

**2. Course [20-50]**

**3. Course category [10]**

**4. “Room” [10]**

**RELATIONSHIPS**

**1. Offer: Course category** **Course [5, 10]**

**2. Belongs-to: Course** **Course category [1]**

**3. Staff\_1: Course -> Instructor [1-2]**

**4. Teaches\_1: Instructor -> Course [3-6]**

**5. Staff\_2: Course category -> Instructor [2, 5]**

**6. Teaches\_2: Instructor -> Course Category[1-2]**

**7. Where: Course -> “Room”[1-1]**

**8. Held-here: “Room”-> Course [5-10]**

**MULTIPLE GROUPS**

**1. COURSES by *COURSE CATEGORY* [10]**

**GROUPS**

**1. ALL INSTRUCTORS**

**2. ALL “ROOMS”**

**3. ALL COURSES – Alphabetic order**

**4. ALL COURSES – By- Level**

**5. ALL COURSE CATEGORIES**

**6. INSTRUCTORS OF THE MONTH**

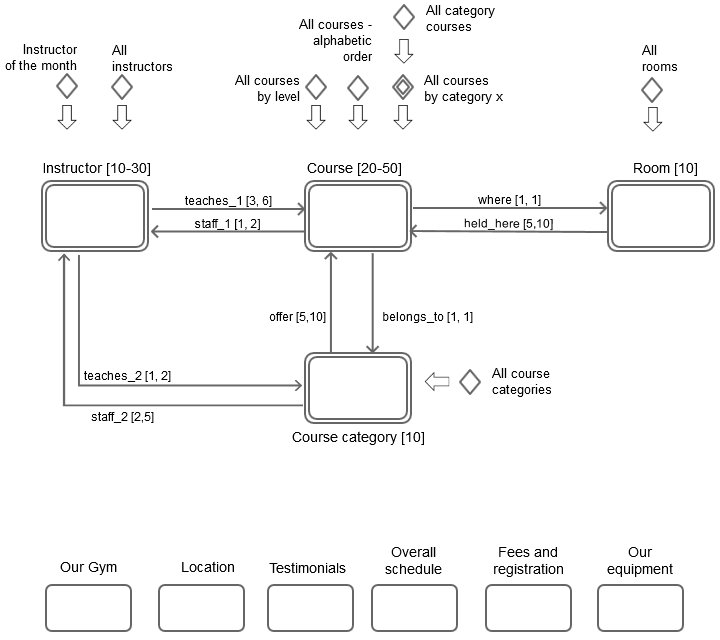


Figure 1 - Conceptual IDM schema

What is worth noting is that there is one Multiple Group of Topics (abbr. MGoT), “*All courses by category X*”, where X is parameter which needs to be specified by the user. Once the user specifies X, e.g. X=”Yoga”, “All course categories” will show all courses that are in specified category (in our case, all courses in Yoga). Other elements of C-IDM are pretty much self explanatory by their appearance in the scheme.

# Logical Design (L-IDM)

Logical design enhance C-IDM scheme by introducing content dialogue acts. Content dialogue acts can be perceived as Question and Answer form of interaction with the user. User asks the question about the content, and the system (web application) returns the contents that user asked for. Short outline:

**SINGLE TOPICS**

**1. BIG GYM**

 *A DIFFERENT PLACE*

 *OUR HISTORY*

 *OUR SPACES*

o *INFO\_REQUEST*

**2. LOCATION**

 *WHERE*

 *CONTACT US*

**3. Testimonials**

 *TESTIMONIALS*

**4. Our equipment**

 *THE BEST EQUIPMENT*

**5. Overall schedule**

 *OVERALL SCHEDULE*

**6. FEEs and registration**

 *REGISTRATION INSTRUCTIONS*

 *OUR RATES*

o *REGISTER*

**MULTIPLE TOPICS**

**1. Instructor [10-30]**

 INSTRUCTOR

 [AWARDS]

**2. Course category [10]**

 COURSE CATEGORY

**3. Course [20-50]**

 COURSE DESCRIPTION

 SCHEDULING

o REGISTER

We may pay attention to both, content dialogue acts which further describe our topics and multiple topics, in L-IDM schema (*fig 2.*), and to Relevant Relations that have cardinality value greater than one. Relevant relations that have cardinality equal to one are simple to implement, one simple link leading to other side of relation. The ones with cardinality greater than one require an additional transitional page in P-IDM schema. More about it in the next section.

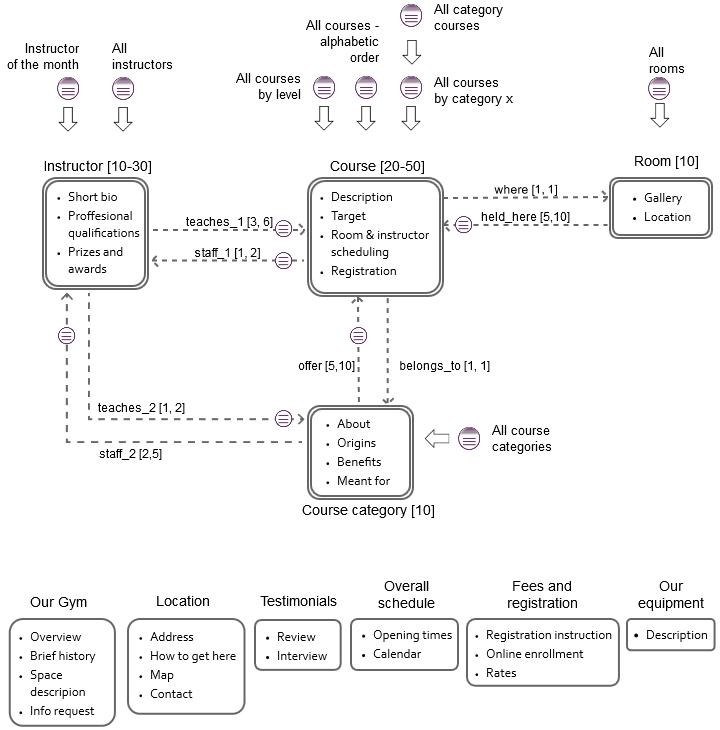
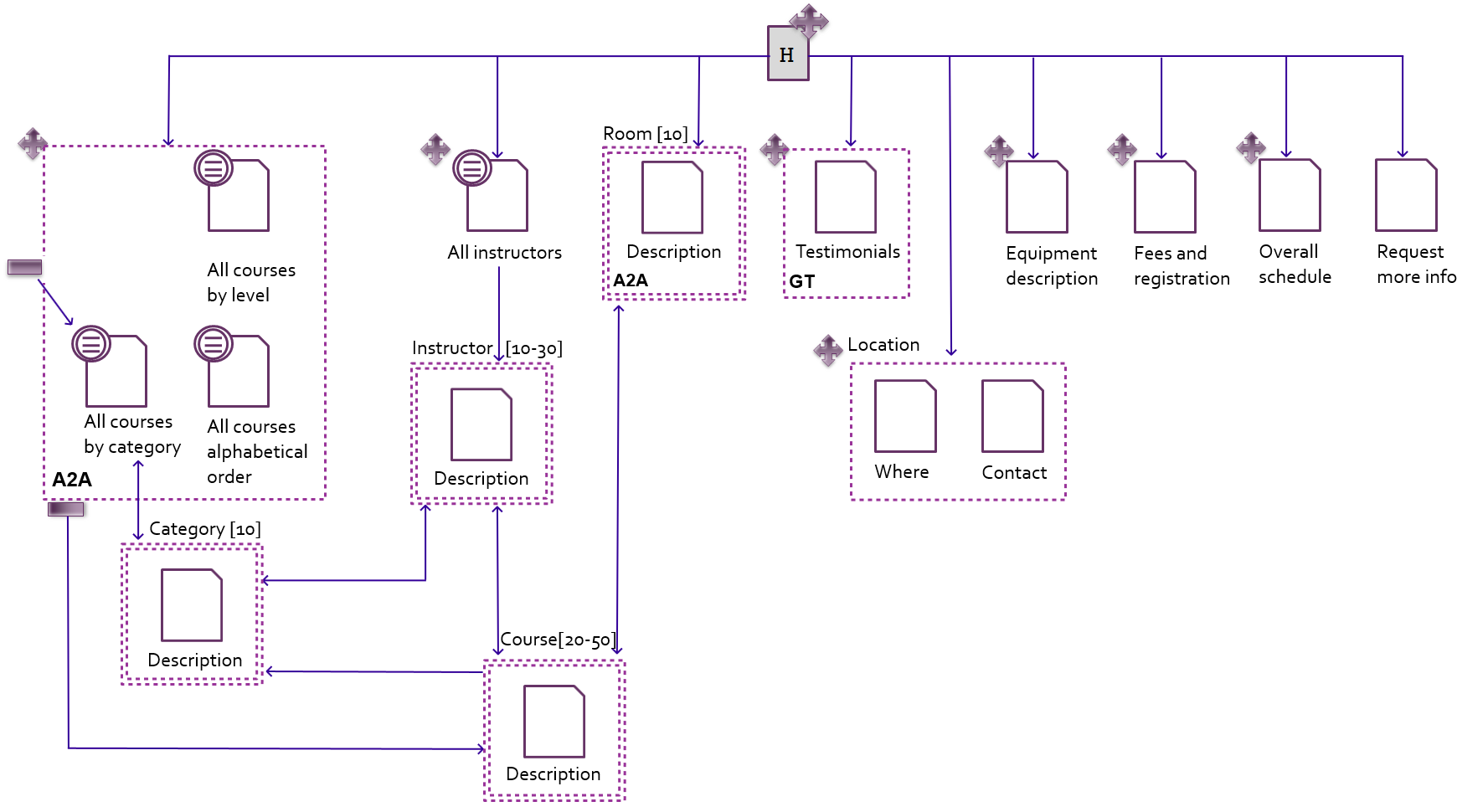


Figure - Logical IDM schema

# Page design (P-IDM)

Figure 3 - Page IDM schema

In P-IDM our attention is focused on the implementation of our web application. We need to convert entities from L-IDM schema to real html pages (at least to their high-level structures) and navigation links that will constitute our P-IDM schema. The cross symbol next to page represents that page is a landmark, that is, a page that is always accessible through navigation menu no matter on which page we are positioned. For simple pages on the right there is not much to say, but some pages on the left require a more thorough explanation.

For example, a group of pages on the leftmost side in a dashed rectangle are also a landmark. Once user clicks on that landmark he lands on the default page “*All courses by category*”, as it is denoted by the pointing arrow. That page is a transition page which shows all categories and their respective courses. The user can click on some of the categories and he will be navigated to page “*Category*” where he can get more information about the concrete category and instructors that teach courses for that category. Concrete instructor can be reached from that page or from landmarked transitional page “*All instructors*”. This dashed group has the A2A pattern, which means that all pages in a group are connected by navigational links among each other.

Testimonials are represented as a regular Topic page, except that they have navigational pattern “Guided tour” implemented for scrolling among concrete testimonials.

(Concrete) Rooms are also represented as a Topic page, and in addition they are fully connected among each other (A2A). Each concrete room page is accessible from any other.

Somebody may ask why there are single pages in a dashed group (e.g. Course, Category, Instructor, and Room). Those are pages that have cardinality greater than one, implying that there are multiple pages of the same type grouped in our rectangle.

Observing navigational arrows, we can notice that some of them are unidirectional and some of them are bidirectional. The bidirectional link provides us the possibility to return back to the page from where we came.

# Interactive Mockup

|  |  |
| --- | --- |
| **Name** | **Working hours** |
| Nemanja Stolic | 20 hours |
| Mirjam Skarica | 20 hours |