**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 has the aim to describe design and prototyping steps “Big Gym” web application assigned as a project in the “Hypermedia Applications (Web and Multimedia)” course at Politecnico di Milano.

# Brief introduction

The document provides detailed procedure of developing web application from conceptual design, upgrading it to logical design and finally to page design. After page design is introduced, it is going to be the basis for developing interactive mockup describe at the end of this document.

# Conceptual design (C-IDM)

Conceptual design is made with respect to the specifications published in 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**

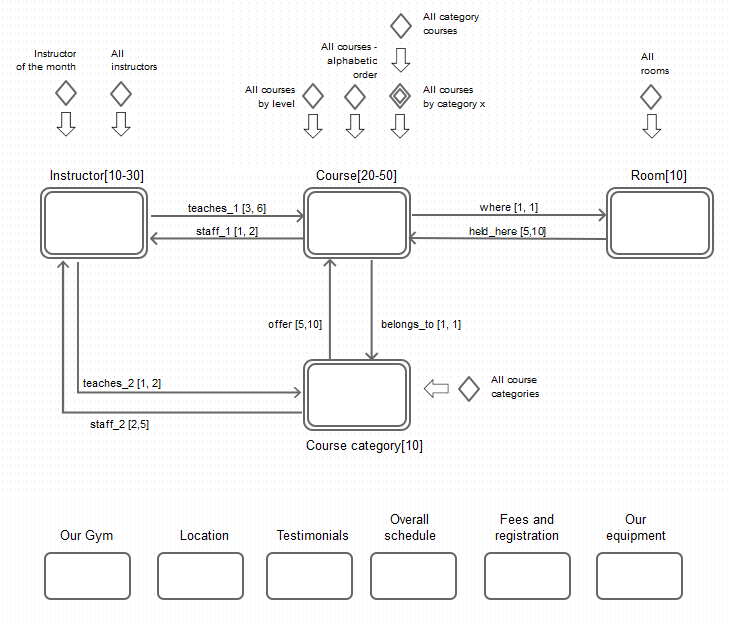


Figure 1 - Conceptual IDM schema

What is worth noticing 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=”Joga”, “All course categories” will show all courses that are in specified category (in our case, all courses in Joga). Other elements of C-IDM are pretty much explainable just 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

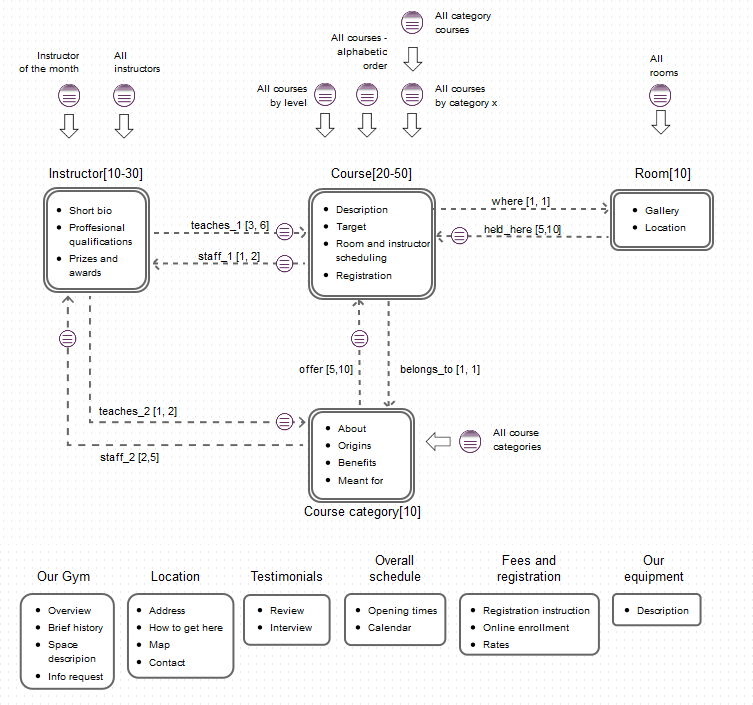
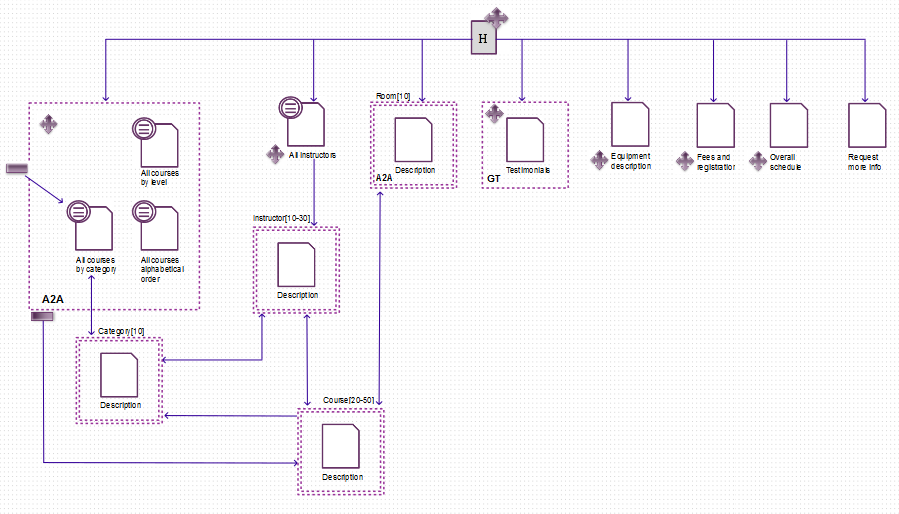


Figure - Logical IDM schema

Besides content dialogue acts which further describe our topics and multiple topics, in L-IDM schema we may also pay attention to Relevant Relations that have cardinality value above 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 above one require an additional transitional page in P-IDM schema. More about it in next section.

# Page design (P-IDM)



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 consist our P-IDM schema. The cross symbol next to page represent that 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 more thorough explanation.

For example, a group of pages in a dashed rectangle are also a landmark. Once the user click on that landmark the arrow leads him to default page “All courses by category”. That page is 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 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 another one.

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 |