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# Hypermedia Applications (Web and Multimedia) Project

Big Gym

IDM C/L/P Design Document

## Contents

<b>IDM C/L/P Design Document .....</b>	<b>1</b>
1. Purpose .....	3
2. Brief introduction.....	3
3. Conceptual design (C-IDM) .....	3
4. Logical Design (L-IDM).....	5
5. Page design (P-IDM).....	7
6. Interactive Mockup.....	9
7. Used tools .....	17
8. Working Hours .....	17

## 1. 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.

## 2. 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 to 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.

## 3. 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**

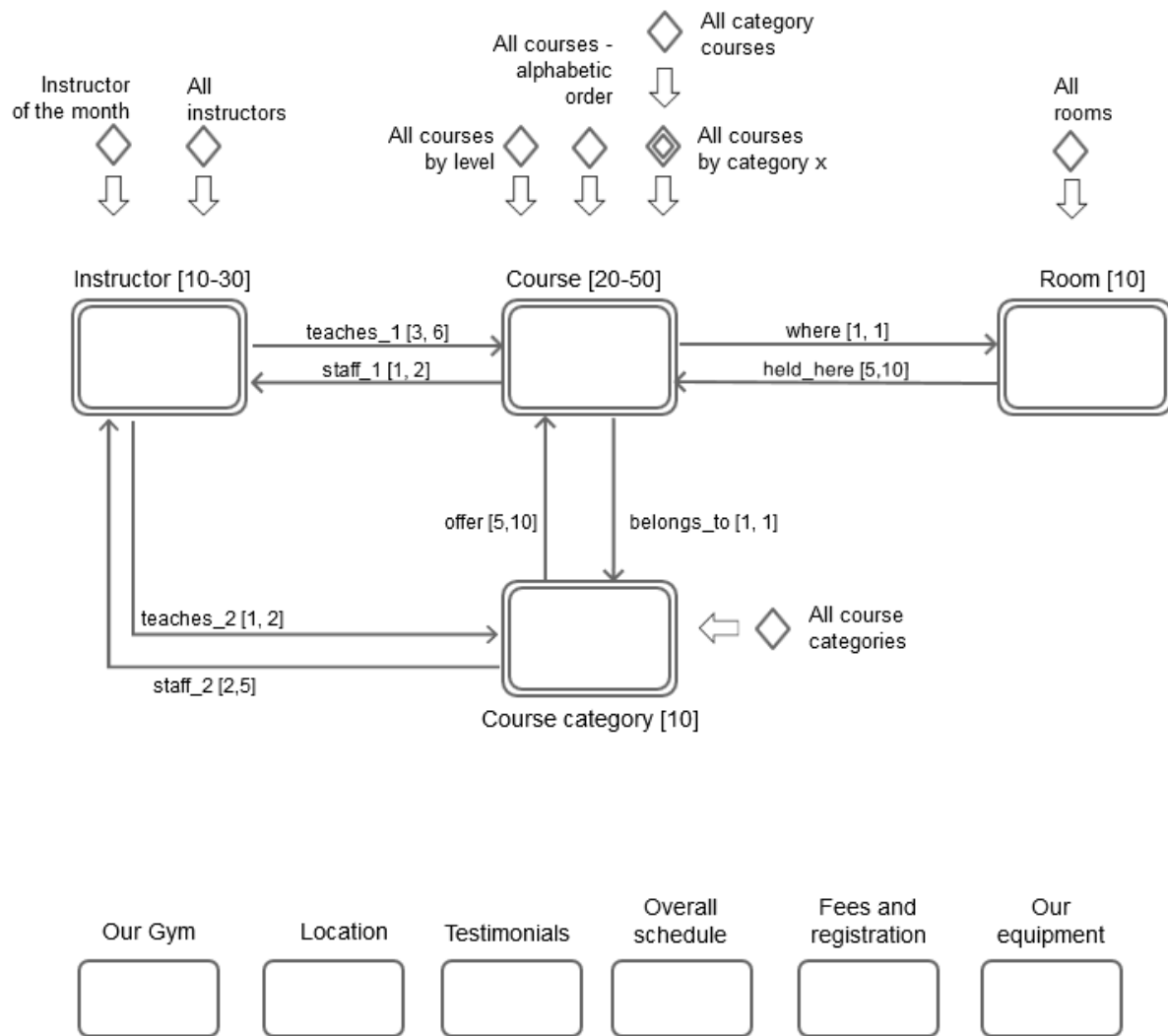


Figure 3.1 - Conceptual IDM schema

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.

## 4. 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*
- ☐ *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*

- ☐ *REGISTER*

### **MULTIPLE TOPICS**

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

- ☐ INSTRUCTOR

- ☐ [AWARDS]

#### **2. Course category [10]**

- ☐ COURSE CATEGORY

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

- ☐ COURSE DESCRIPTION

- ☐ SCHEDULING

- ☐ REGISTER

We may pay attention to both, content dialogue acts which further describe our topics and multiple topics, in L-IDM schema (*fig 4.1.*), 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.

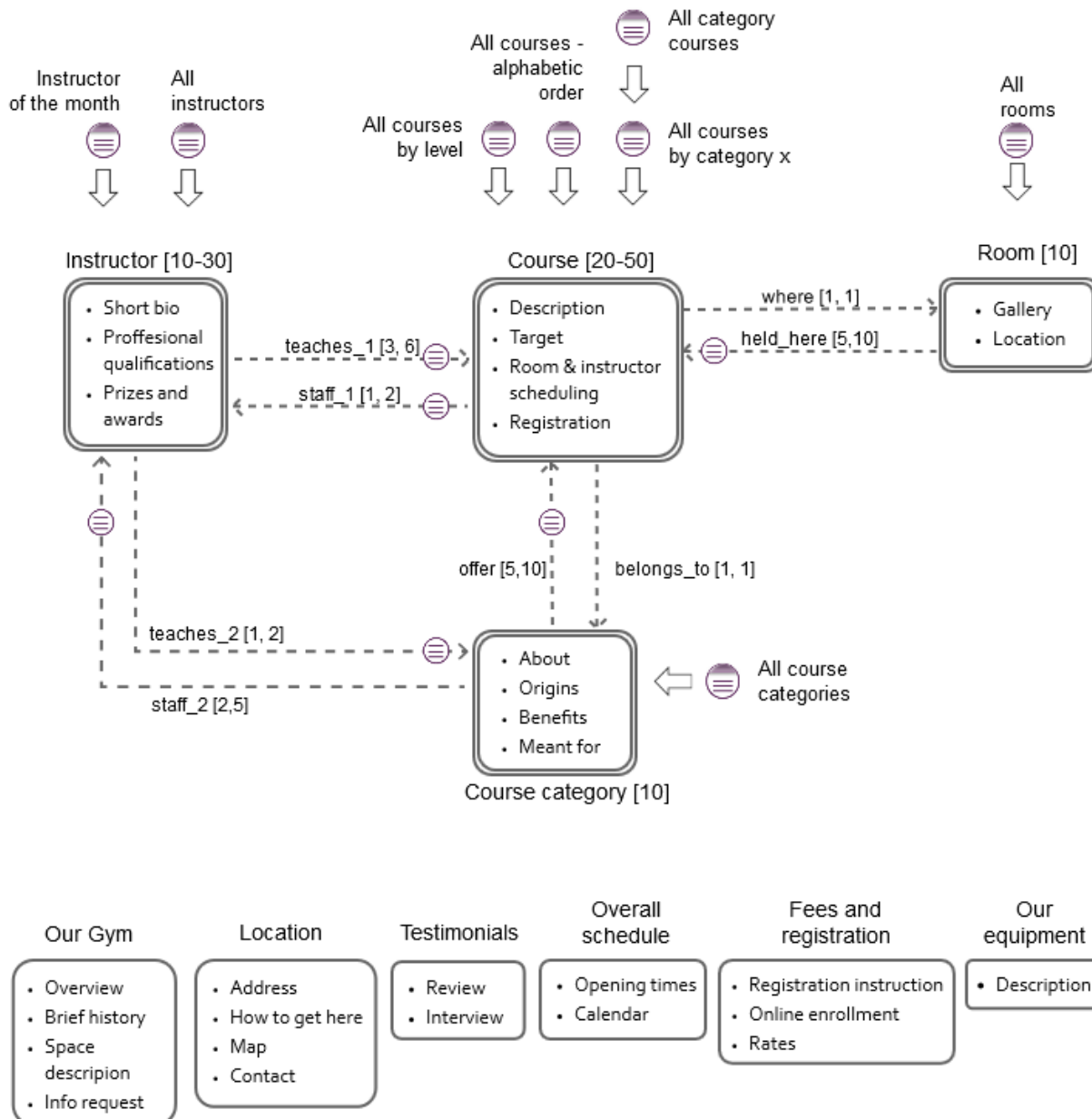


Figure 4.1 - Logical IDM schema

## 5. Page design (P-IDM)

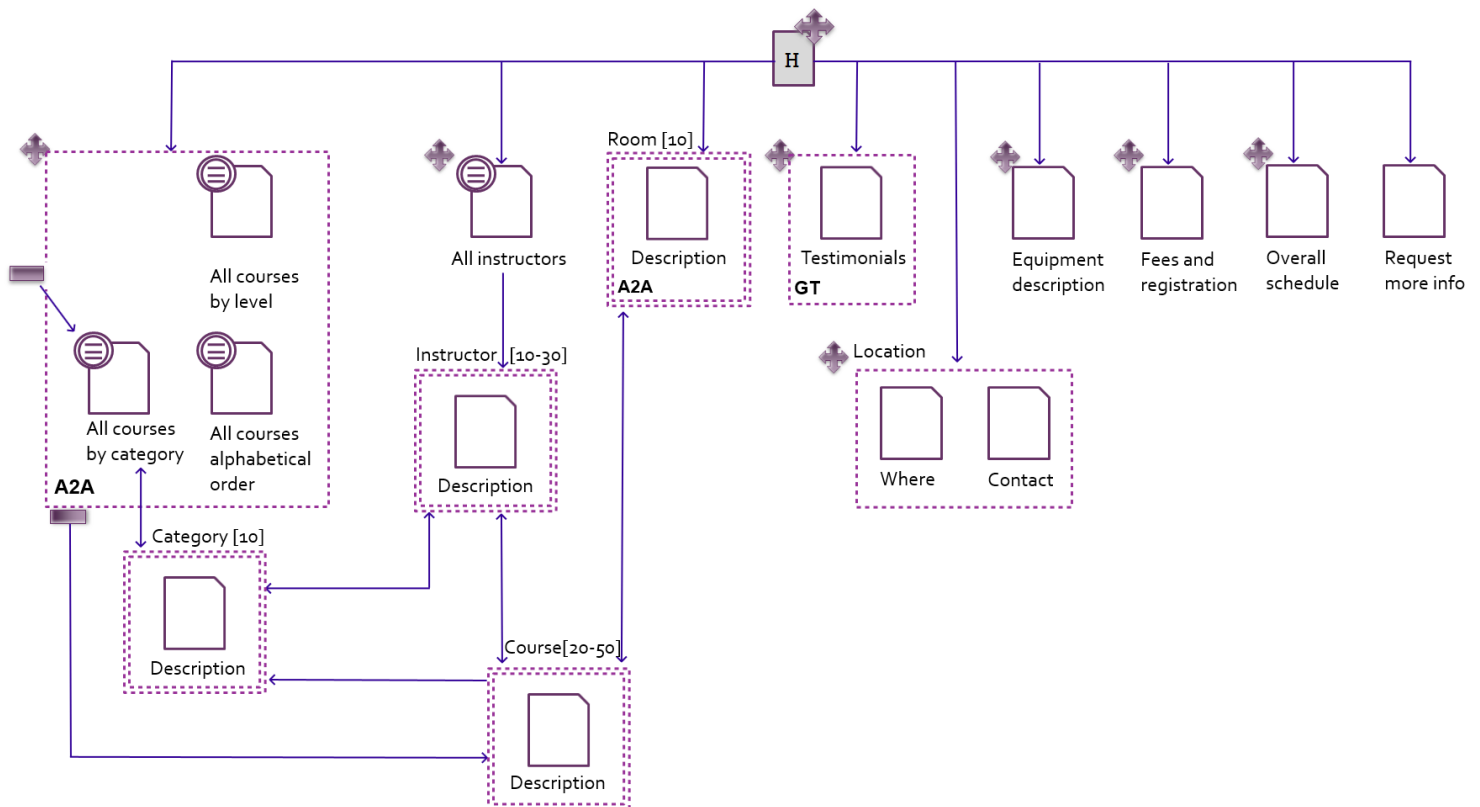


Figure 5.1 - Page IDM schema

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.



## 6. Interactive Mockup

As the last step in the design process, we derive an interactive mockup from P-IDM (fig 5.1.) keeping in mind the goals of our proverbial contractors, owners of Big Gym (promotion and conveying information clearly) and that of our end-users, Big Gym's clients (getting all their questions answered). For the sake of readability all images will be a smaller than original size. You can, however, find a full interactive mockup in html format in the `./HTML/` subdirectory.

Starting with the *Home Page* (fig 6.1), right below the web application's title is a navigation bar incorporating all landmark pages stated in P-IDM as navigation links. The same navigation element is used across all pages, and as such won't be mentioned in the sections that follow. Along with some descriptive elements like "A different place" and "Our History", *Home Page* also contains links "Request more info" and "For a detailed layout click here" which serve the user a popup contact form with optional newsletter subscription (fig 6.2 ) and the *Rooms Page* (fig 6.3) respectively.

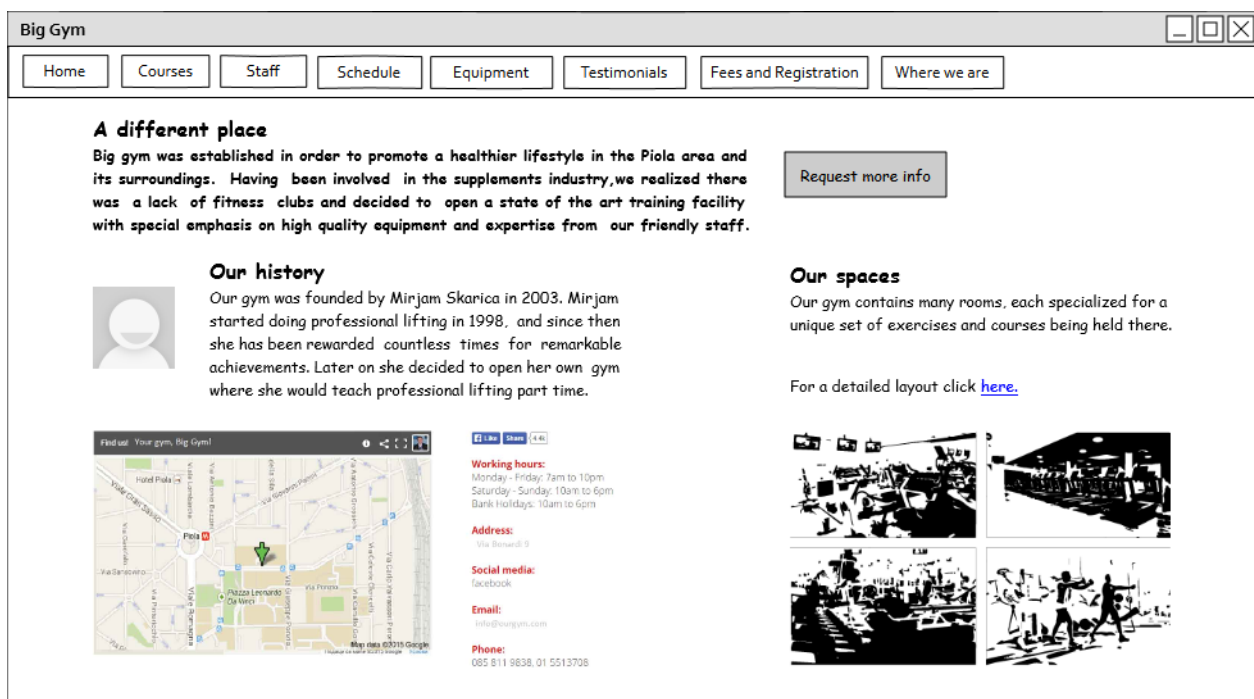


Figure 6.1 Home Page

Request more information

name

email

phone number

Send

Subscribe to our newsletter

email

Subscribe

Figure 6.2 Request more information popup

*Rooms Page*, even though not a landmark remains reachable from *Home Page* and individual *Course Pages*. Keeping in mind *Rooms* conceptually are a set of pages (and thus shown as a multiple topic in P-IDM), we have made a somewhat different design choice in order to complement the increasingly more popular dynamic feel and flow of content. We try to achieve this by having not multiple, but one page containing information about all of the different rooms. To clarify further, the page *contains* all information, but only one room's content is *displayed* at a time. We used the all-to-all navigation pattern to implement this seamlessly. By selecting/switching through tabs ( namely *room A1*, *room A2*, *room A3* in the *fig 6.3*) a different room's content is rendered dynamically. Each *Room* contains a map with its location highlighted, a gallery of photos and links to particular *Courses* held there.

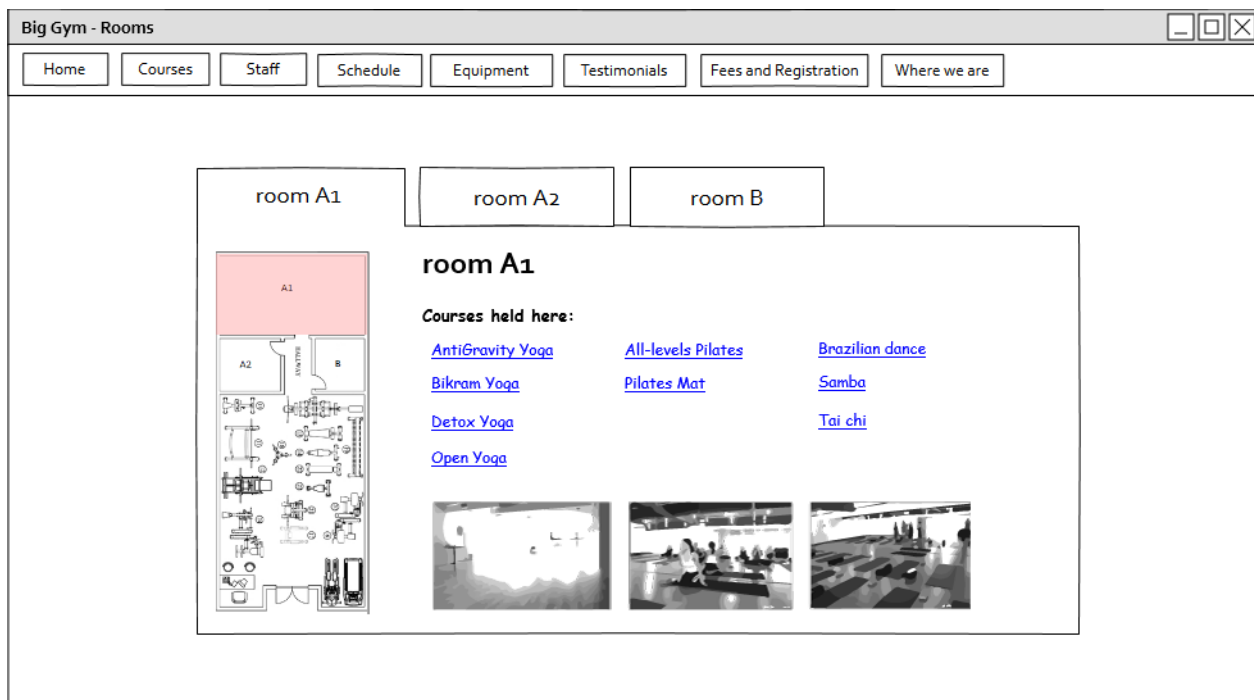


Figure 6.3 Rooms Page

*Staff Page* (fig 6.4) denoted as *All instructors* in P-IDM is a page consisting only of transitional links. More specifically, each compound element, a picture and text below representing instructor's name, leads to a corresponding single *Instructor Page* (fig 6.5).

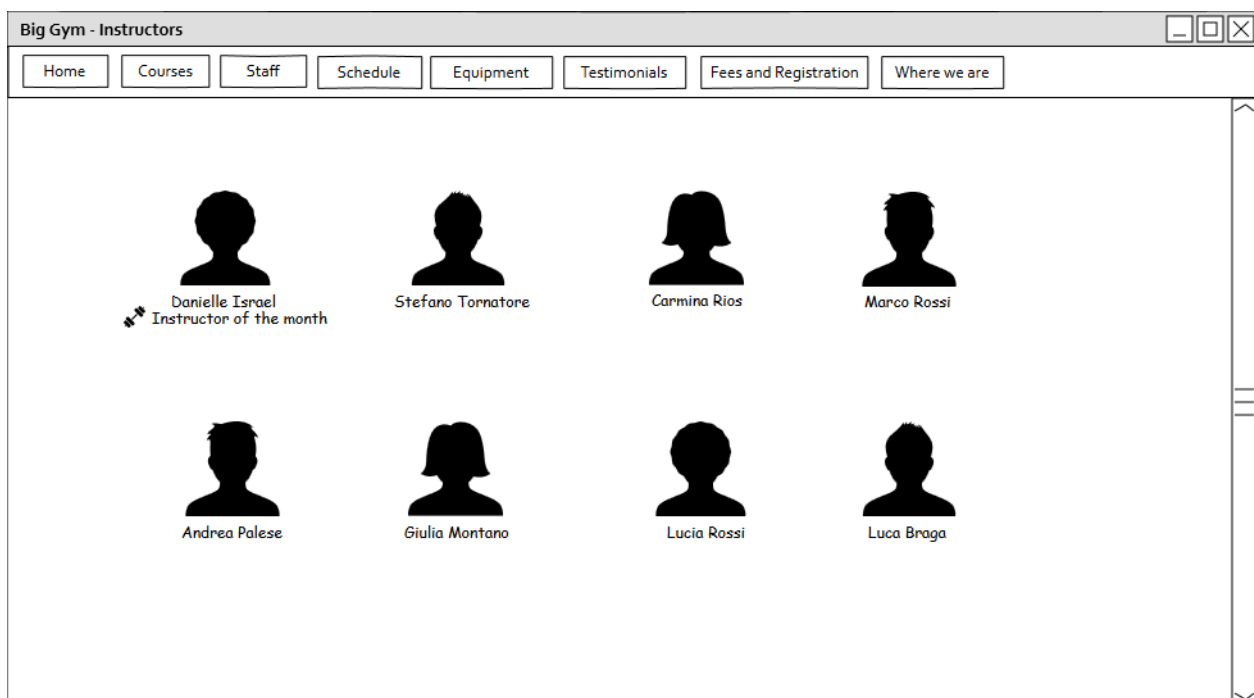


Figure 6.4 Staff Page

*Instructor Page* shown in *fig 6.5* is a page displaying specific instructor's name, bio, professional qualifications and awards. It also lists all the courses and corresponding categories the instructor teaches. Every list item is a transitional link which redirects the user upon click to a specific *Course* (*fig 6.8*) or *Category* (*fig 6.7*). *Instructor Page* is reachable from either *Staff Page*, specific *Course* or *Category*.

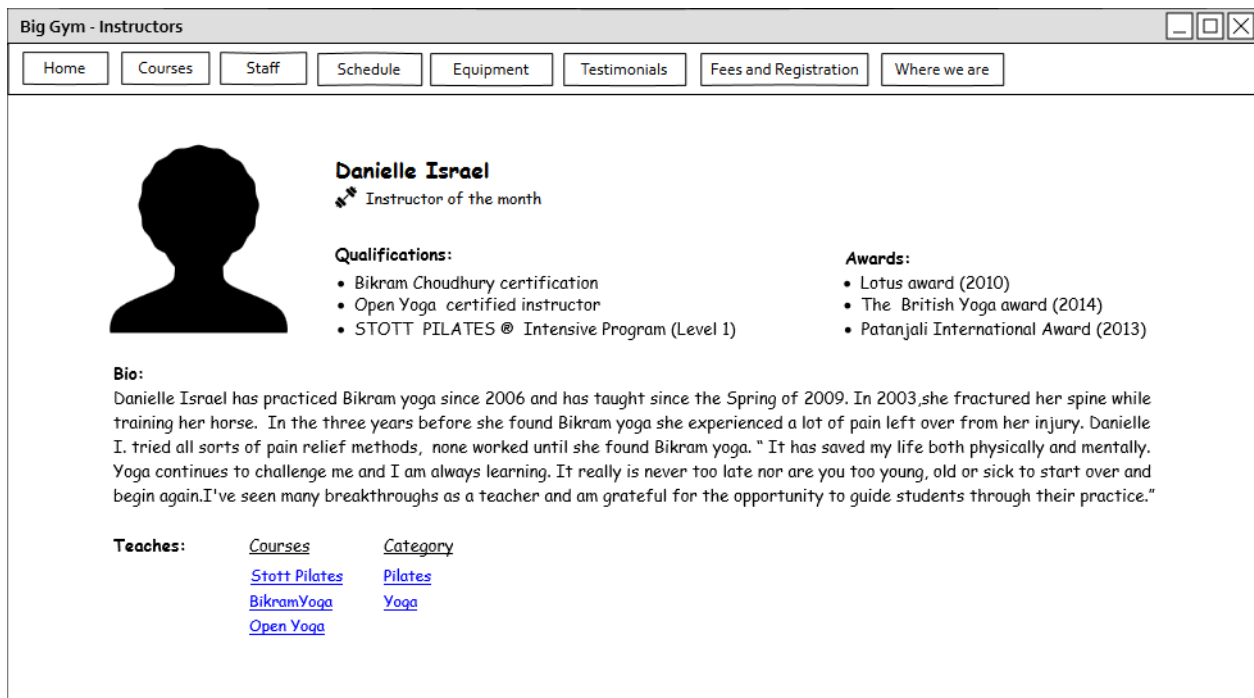


Figure 6.5 Instructor page

*Courses Page*, shown in *fig 6.6*, is a page heavily influenced and guided by the same dynamic content flow motivations argued in the *Rooms Page* paragraph. The rationale for *Courses Page* design choices follows. There is a finite set of specific single courses Big Gym is offering. Each course belongs to a category, level and, of course, has a name, meaning it intrinsically has a unique position in alphabetical ordering of all courses. That being said, it is easy to realize that the three pages of transitional links namely *Courses by category*, *Courses by level* and *Courses by alphabetical order* would basically have the *same* content (list of courses) just *visually* grouped and labelled differently. This is why we decided to merge the three pages into a single one practically. Conceptually though, they behave as 3 separate entities connected via all-to-all navigation pattern implemented as 3 tabs. All tabs behave in a similar way. They render labelled boxes (e.g. *Cardio* and *Dance* for Category, *Beginner* and *Intermediate* for Level and *A,B* for Alphabetical ordering) and in them a list of links redirecting user to a specific course (*fig 6.8*) upon click. The only tab that provides a piece of additional information is the *Category* one. Next to each label there is a link in shape of a circled "i" which redirects user to a specific *Category Page* (*fig 6.7*).

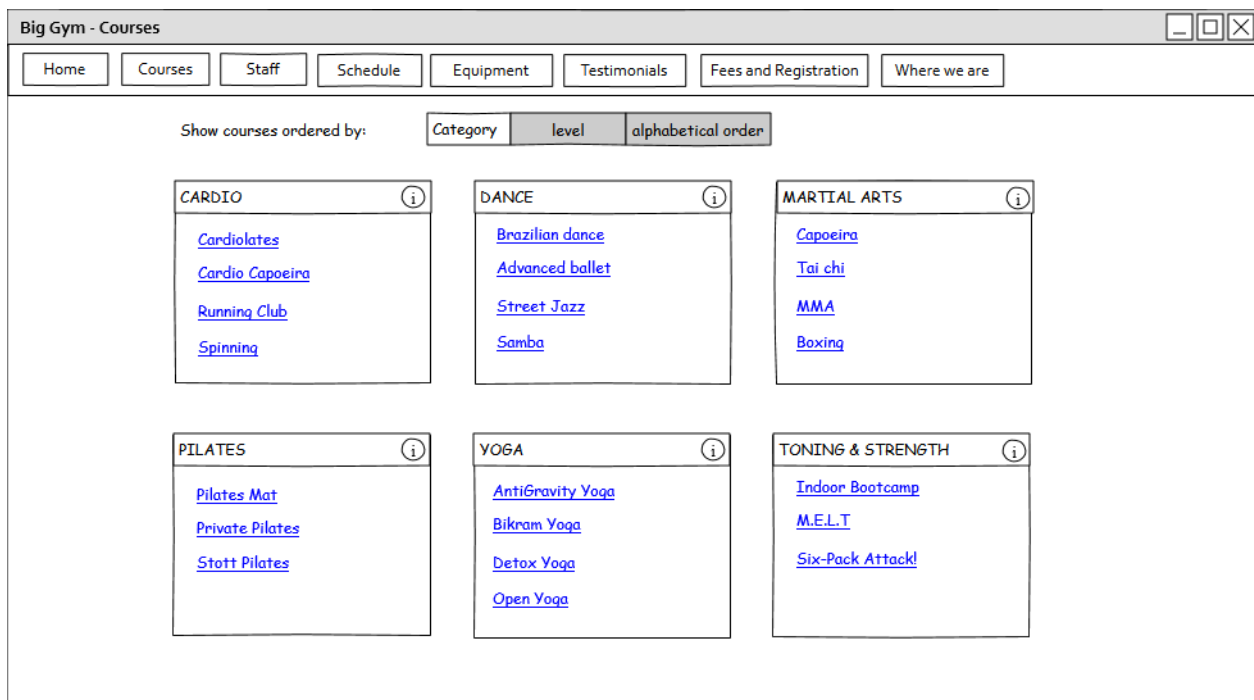


Figure 6.6 Courses Page

*Category Page* (fig 6.7) is reachable from the *Courses Page* (*Category* tab), specific *Instructor Page* and specific *Course Page*. It consists of simple text elements providing some general information about its origins and benefits. Moreover, it has the following links. One for listing all courses of that specific category which redirects user to *Courses Page* (*Category* tab). Others for listing all instructors which teach at least one course of that category. Clicking on an instructor link serves the user the instructor's page (fig 6.5).

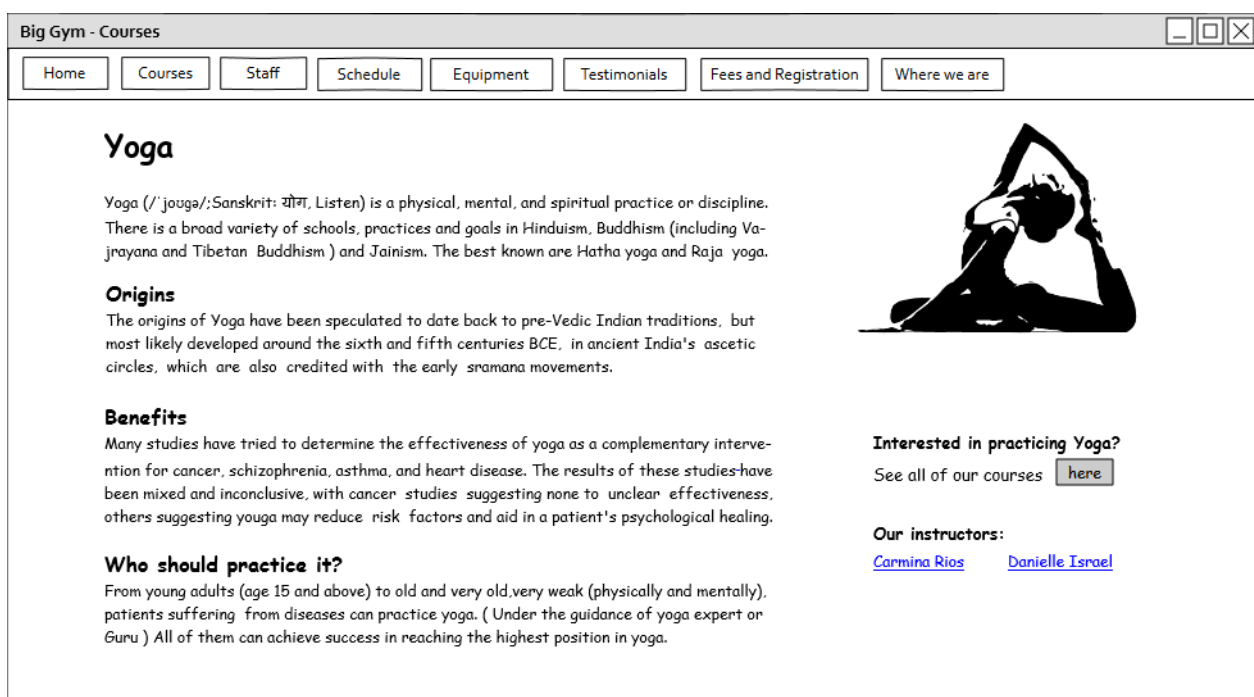


Figure 6.7 Category Page

Course Page shown in fig 6.8 is a page providing information about the length of the course, expectations and schedule. It also provides information about its category, about which rooms it takes place in and which instructors teach it; all this in the form of links. Additionally it has a form through which users can quickly and simply enroll in the course. Course Page is reachable from either Instructor Page, Courses Page, specific Category or Room page.

Big Gym - Course

Home

Courses

Staff

Schedule


Equipment

Testimonials

Fees and Registration

Where we are

Bikram Yoga



Enroll in course

name

email

phone number

additional details (optional)

enroll

Room:

[A1](#)

Length:

1 hour

Schedule:

Mon 17:00 - 18:00  
Tue 17:00 - 18:00  
Thu 18:00 - 19:00  
Sat 09:00 - 10:00

Instructor:

[Carmina Rios](#) [Danielle Israel](#)

Course category:

[Yoga](#)

What to expect:

Yoga poses and other spine expanding moves done with assistance of a "silk" sling hanging from the ceiling.

How in shape you need to be:

Couch potatoes very much welcomed

Figure 6.8 Course Page

Testimonials Page (fig 6.9) is a page consisting of 4 video reviews alongside some information explaining what can be expected from the videos which are made navigable using the guided tour pattern.

Big Gym - Testimonials

Home

Courses

Staff

Schedule


Equipment

Testimonials

Fees and Registration

Where we are

Hear from people that were proactive members of our gym and what they have to say about the quality of equipment and courses offered.



Interview with Kirsty Nield

Group Fitness Manager, Kirsty Nield has been a member of the Blackwood Fitness team for almost 13 years. Focusing on many of the classes, including Les Mills, Zumba, Chi Ball, Aero Sculpt, free step and more, Kirsty is a key member of the group fitness crew here at Blackwood Fitness.

Play Video

Figure 6.9 Testimonials Page

Part from the fact *Location Page* and *Fees and Registration Page* embed contact and registration forms, respectively, *figures 6.10-6.13* are not in need of extensive descriptions as they don't utilize any specific navigational patterns, nor were any specific design decisions made. They are included in this document for completeness.

Big Gym - Where are we

Home

Courses

Staff

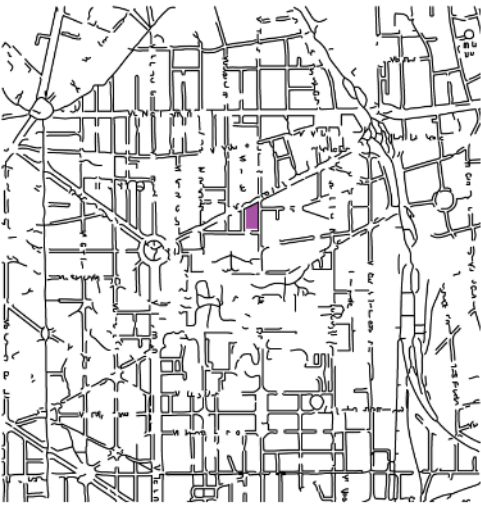
Schedule

Equipment

Testimonials

Fees and Registration

Where we are



**Contact:**  
tel: +39 339 339  
via Bonardi 9, 20133 Milano

**Work hours:**  
Mon - Sat 08:00 - 23:00  
Sun 08:00 - 13:00

**How to get here?**  
Big Gym is located near the station *Piola*, along the underground line 2. In the nearby are the tram stops of lines number 33 and 23, the bus stop of line 92, and the railway station of Milano Lambrate.

**Have a question?**

Figure 6.10 Location Page

Big Gym - Registration

Home

Courses

Staff


Schedule

Equipment

Testimonials

Fees and Registration

Where we are



Whether it's keeping up with the kids at the park, getting out and meeting new people, or even landing that next promotion at work, your workout can give you the confidence to get more from life.

That is why Big Gym has changed. We want gym to be more accesible for everyone, so we are now offering flexible membership terms and even more options to suit the way you train. With our world-class facilities, extended working hours, group training options and expert team - we will show you how you can get ahead, and stay there.

**Registration**

**Membership options:**

☒ 1 Month 80€
 ☐ 3 Months 200€
 ☐ 6 Months 360€

Figure 6.11 Fees and Registration Page



Big Gym - Equipment

Home

Courses

Staff

Schedule

Equipment

Testimonials


Fees and Registration

Where we are

**The Best Equipment:**

Here at Big Gym, we pride ourselves with the best quality equipment money can buy. Each weigh, dumbbell, kettlebell and machine were chosen with great care. You can find more information about each item below.

**Weight Plates**



Olympic Barbell and Weight Plates

Weight plates range from 2.5 lbs. to 100 lbs. They are usually iron, however, many home gyms have plastic weight plates. Many people are familiar with the York Plastic Barbell Set. While this is ok for someone who is just starting out, the thickness of the plastic weight plates limit the amount of weight that can be placed on the barbell and dumbbells.

Figure 6.12 Equipment Page

Big Gym - Schedule

Home

Courses

Staff

Schedule

Equipment

Testimonials

Fees and Registration

Where we are

## GYM SCHEDULE

March 16 – June 30, 2015

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
5:00 – 8:30 am Open Gym	5:00 – 8:00 am Open Gym	5:00 – 8:30 am Open Gym	5:00 – 8:30 am Open Gym	5:00 – 7:30 am TRX*	7:00 – 9:00 am Breakfast Club Basketball (Full Court)	7:00 – 9:00 am Open Gym Basketball
8:30 – 9:30 am Cardio Kick Box	8:30 – 9:30 am Step 9:30 – 10:15 am TRX*	8:30 – 9:30 am Cardio Kick Box	8:45 – 9:45 am Cardio Sweat	7:30 – 8:30 am Open Gym	9:30 am – 2:30 pm Youth Basketball Clinics* /Open Gym	9:00 am – 4:00 pm Open Family Gym/ Private Basketball Lessons*
10:00 – 11:00 am Gym Ventures*	10:00 – 11:00 am Gym Ventures*	10:00 – 12:00 pm Gym Ventures*	10:00 – 11:00 am Gym Ventures*	8:30 – 10:00 am HST Team Class	2:30–6:00pm Open Gym	4:00 – 6:00 pm Adult 3x3 Basketball
11:00 am – 1:15 pm Open Gym Basketball/ Volleyball	11:30 am – 2:30 pm Open Gym 1:30–2:30pm Open Family Gym	12:00 – 1:15 pm Open Gym Basketball/ Volleyball	11:30 am – 1:15 pm Open Gym Basketball/ Volleyball	10:00 – 11:00 am Gym Ventures*	4:00–7:00 Open Gym/ Teen Basketball	6:00 – 7:00 pm Open Gym
1:15 – 2:30 pm Living Strong, Living Well™	2:30 – 4:30 pm St. Francis (Full Court)	1:15 – 2:30 pm Living Strong, Living Well™	1:30 – 2:30 pm Open Gym	11:00 am – 1:15 pm Open Gym Basketball/ Volleyball	<p><b>Family Open Gym</b> is a recreational time for family members to enjoy any activity of their choice.</p> <p><b>Open Gym</b> may be used by any member or guest. Please be respectful and caring of others who wish to share the space.</p> <p><b>Open Gym Basketball/Volleyball</b> is available for pick-up games with rules and time limits (ages 11+).</p> <p>If you have questions, comments, or requests, contact Scott Fukushima at 650 429 1130.</p> <p>* Indicates programs in which only registered members (in class/league) may participate.</p> <p>Check exceptions calendar for dates and times of scheduled closures.</p>	
2:30 – 4:30 pm St. Francis (Full Court)	4:30 – 5:30 pm Open Gym	2:30 – 4:30 pm St. Francis (Full Court)	2:30 – 4:30 pm St. Francis (Full Court)	1:30 – 2:30 pm Open Gym		
4:30 – 5:30 pm Open Gym	5:30 – 7:30 pm Volleyball League Practice*	4:30 – 6:00 pm Open Gym	4:30 – 6:30 pm Little's & Rookies	2:30 – 4:30 pm St. Francis Full court		
5:30 – 7:30 pm Volleyball League Practice*	7:30–9:30pm Adult 3 on 3 Basketball	6:00 – 8:00 pm Dodgeball League?/ Open Gym	6:00 – 8:00 pm Volleyball League Games*	4:30 – 6:30 pm Middle School Dodgeball*		
9:00–10:45pm Open Gym	9:30–10:45pm Open Gym	8:00 – 10:00 pm Women's Basketball Program*	8:00–10:45pm Adult Volleyball/ Open Gym	6:30 – 10:45 pm Open Gym		

Figure 6.14 Schedule Page



## 7. Used tools

- Microsoft Office Word
- Adobe Illustrator
- Evolus Pencil

## 8. Working Hours

<b>Name</b>	<b>Working hours</b>
Nemanja Stolic	20 hours
Mirjam Skarica	20 hours