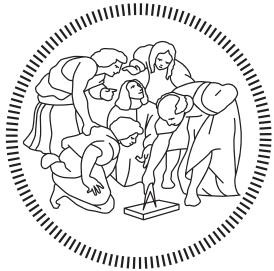


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POLITECNICO DI MILANO

# Hypermedia Application: Design project of *DiscoverTrieste*

ACSS

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# 1 Abstract

The goal of this Design Document is to explain the design process beyond the implementation of a web page: for this project the theme was an Art City and we select Trieste.

The work starts with the analysis of the pages and the relationships among them, using the C-IDM notation learned during the course.

The process continues going deeply in the details of a single page and its contents using the Content Tables and mapping them into Abstract Pages: in this way we prepare the whole page organization and the contents that we expect to see in our webpage in order to give those tables to a designer who organizes the features in a aesthetic and good manner (*in our case this work was also done by us, due to the fact that we are all computer engineers!*).

The document ends with wireframes (screenshots) of our webpage and some case scenarios, in order to show the facilities offered, the structure of the pages and how to use them.

## 2 C-IDM Diagrams

### 2.1 Introduction

Conceptual IDM is used to design the relationships among the pages in order to have an high level view of the links and connections that are needed. The blue arrows show the navigation of the pages: in all the case we start from a "all page" (group of topics) which contains all the related topics, the user can click on a single one in order to explore the web tree and access to the detailed single topic.

The unique difference, how showed by the diagram, is related to the events: in this case it's possible to explore the *group of topics* using a "seasonal filter".

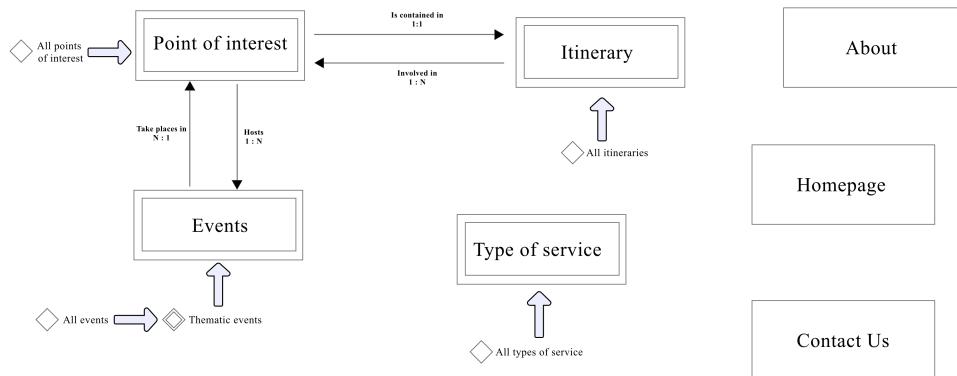


Figure 1: C-IDM schema

## 3 Content-in-the small

### 3.1 Introduction

This section is dedicated to the second step of the design process, which is related to the analysis of "what we want to put" in our pages : in fact in the following tables are well explained all the items and their properties (in

terms of type of variable). The tables are inserted in a manner that try to highlight the hierarchy beyond the site.

### 3.2 Tables

TOPIC: Homepage	
Topic title	“Welcome to Trieste”
City images	LISTOF[image]
Website introduction	Text (max 800 char)

TOPIC: About page	
Topic title	“About Trieste”
Images	LISTOF[image]
About description	Text (max 1500 char)

TOPIC: Contact Us	
Topic title	“Contact us”
Image	Image
Description	Text (max 200 char)
Contacts list	LISTOF[contact name (max 30 char), email (max 40 char), phone number (max 15 char)]

Figure 2: Content in the small tables

**GROUP: All points of interest**

Group title	"Points of interest"
Image	Image
POI preview	LISTOF[POI title; POI image]

**KIND OF TOPIC: Point of interest**

POI title	Text (max 30 char)
POI address	Text (max 50 char)
POI image	LISTOF[image]
POI description	Text (max 2000 char)
POI opening time info	Text (max 100 char)
POI prices info	Text (max 500 char)
POI accessibility info	Text (max 60 char)
POI map	Interactive image
External link	Text (max 50 char)

Figure 3: Content in the small tables

**GROUP: All events**

Group title	"Events"
Image	Image
Event preview	LISTOF[Event title; event image, event date, event location]

**MULTIPLE GROUP: Summer events**

Group title	Text (max 30 char)
Image	Image
Event preview	LISTOF[Event title; event image, event date, event location]

**MULTIPLE GROUP: Winter events**

Group title	Text (max 30 char)
Image	Image
Event preview	LISTOF[Event title; event image, event date, event location]

**KIND OF TOPIC: Event**

Event title	Text (max 30 char)
Event date	Date
Event image	LISTOF[image]
Event description	Text (max 2000 char)
Event time info	Text (max 100 char)
Event accessibility info	Text (max 60 char)
Event prices info	Text (max 500 char)
External link	Text (max 50 char)

Figure 4: Content in the small tables

### GROUP: Types of Services

Group title	“Types of service”
Image	Image
type of service preview	LISTOF[type of service title, type of service image]

### KIND OF TOPIC: Type of services

Type of services title	Text (max 30 char)
Type of services description	Text (max 300 char)
Services list	LISTOF[service title, interactive map, service image, service description, service contacts]

### GROUP: Itineraries

Group title	“Itineraries”
Image	Image
Itineraries preview	LIST OF[Itinerary title, itinerary Image, itinerary length in feet/km]

### KIND OF TOPIC: Itinerary

Itinerary title	Text (max 30 char)
Itinerary image	Image
Itinerary description	Text (max 500 char)
Itinerary length (km)	Text (max 30 char)
Itinerary length (feet)	Text (max 30 char)
Itinerary steps	LIST OF[POI Image,POI title, description]
Itinerary map	Interactive image

Figure 5: Content in the small tables

## 4 Database design

We decide to insert in the database only the data related to multiple topic pages and group of topics pages because they are the most articulated ones (their content is dynamically changing according to the context) with respect to the homepage, about and contacts, which are basically static pages.

### 4.1 ER-Diagram

The Entity-Relationship Diagram is a theoretical model used to show at an high-level-abstraction the relationships among the database entities and to list their attributes.

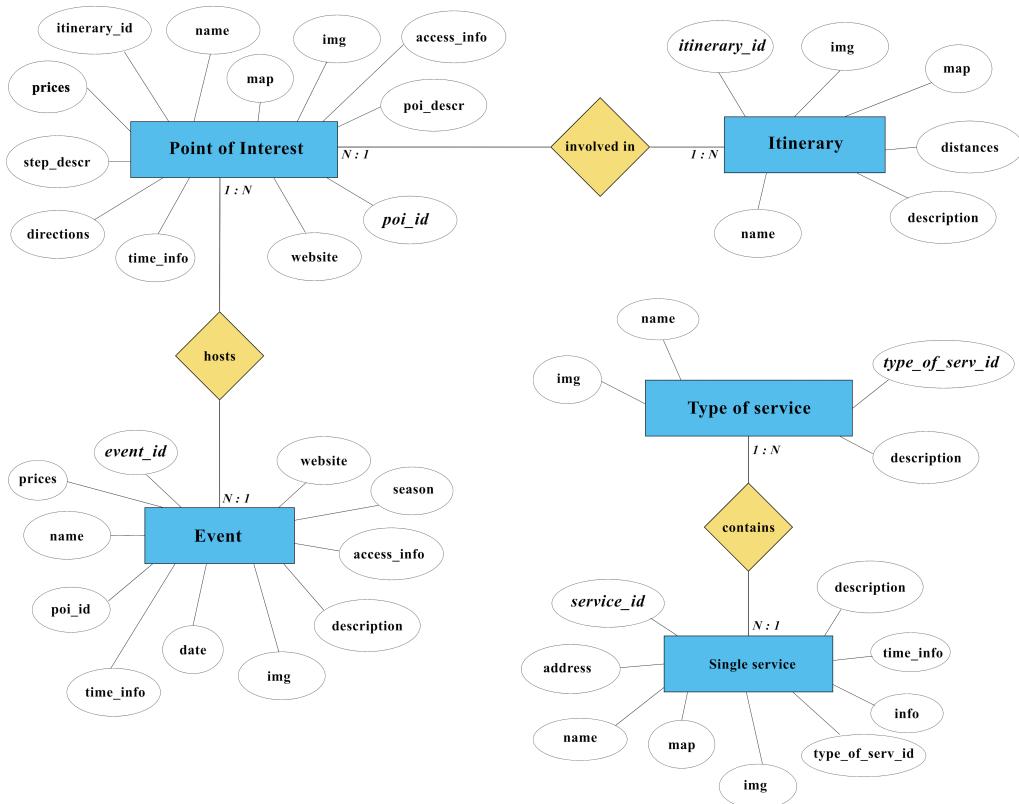


Figure 6: Entity-Relationship diagram

## 4.2 Data tables

Data tables derive from the previous diagram: in fact they deeply describe all the attributes in term of variable's type and the keys (primary and foreign) of each entity.

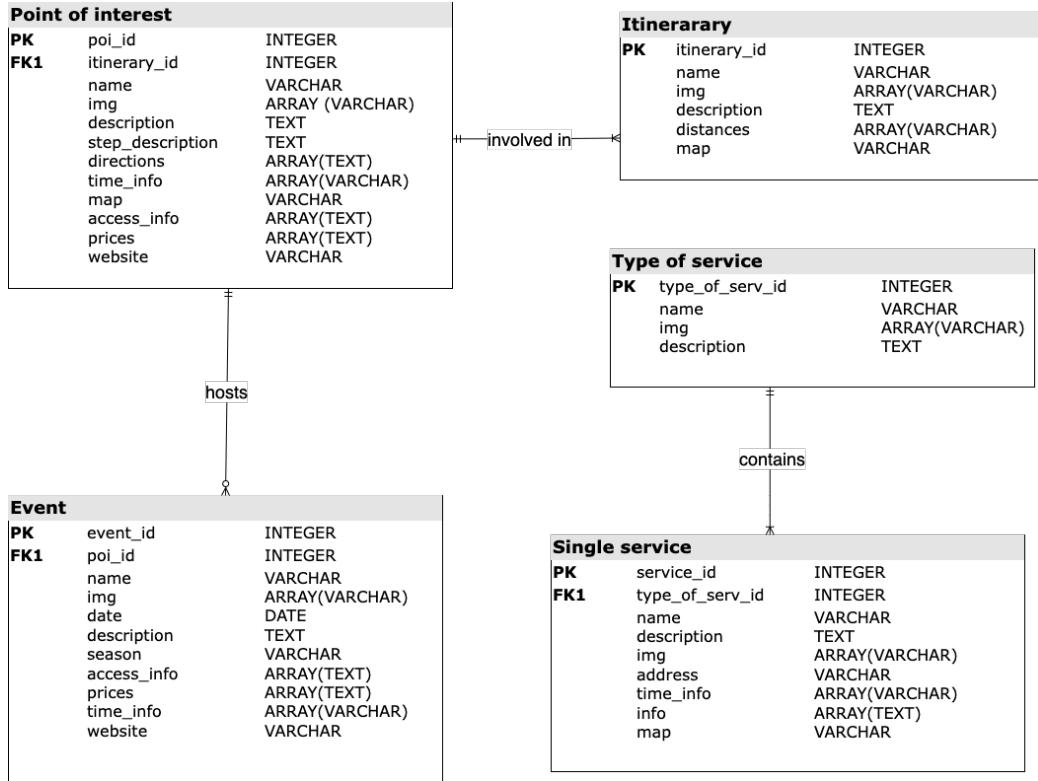


Figure 7: Data tables of the DB

## **5 Abstract pages**

### **5.1 Introduction**

Abstract pages are the last tables between the design work and the implementation one: in fact the following tables contains the accurate description of all the items we projected for all the pages, in order to give a detailed explanation of "what we expect to see" in our website. In real life, abstract pages are delivered to a design group who merge the conceptual organization and the aesthetic factor to achieve a good compromise in terms of Usability, Readability and Aesthetic.

The abstract pages contain also the classified type of links for each page (and the related navigation pattern, if used) in order to give a general view of all the connections that are needed for each page.

## 5.2 Tables

TOPIC: Homepage	
Topic title	“Welcome to Trieste”
City images	LISTOF[image]
Website introduction	Text (max 800 char)
Landmarks	<ul style="list-style-type: none"> <li>- Logo: Image</li> <li>- Homepage link: Image</li> <li>- Website small menu with links to each group: Text</li> </ul>
Transition links	Link to each group pages

TOPIC: About	
Topic title	“About Trieste”
About description	Text (max 4000 char)
Images	LISTOF[image]
Landmarks	<ul style="list-style-type: none"> <li>- Logo: Image</li> <li>- Homepage link: Image</li> <li>- Website small menu with links to each group: Text</li> </ul>

TOPIC: Contact Us	
Topic title	“Contact us”
Image	Image
Description	Text (max 200 char)
Contacts list	LISTOF[contact name (max 30 char), email (max 40 char), phone number (max 15 char)]
Landmarks	<ul style="list-style-type: none"> <li>- Logo: Image</li> <li>- Homepage link: Image</li> <li>- Website small menu with links to each group: Text</li> </ul>

Figure 8: Abstract pages

GROUP: All points of interest	
Group title	“Points of interest”
Image	Image
POI preview	LISTOF[POI title, POI image]
Landmarks	<ul style="list-style-type: none"> <li>- Logo: Image</li> <li>- Homepage link: Image</li> <li>- Website small menu with links to each group: Text</li> </ul>
Group links	Link to each POI pages [ <i>INDEX pattern: top to down</i> ]

KIND OF TOPIC: Point of interest	
POI title	Text (max 30 char)
POI images	LISTOF[image]
POI description	Text (max 2000 char)
POI address	Text (max 50 char)
POI prices info	Text (max 500 char)
POI opening time info	Text (max 100 char)
POI accessibility info	Text (max 60 char)
POI map	Interactive image
External link	Text (max 50 char)
Landmarks	<ul style="list-style-type: none"> <li>- Logo: Image</li> <li>- Homepage link: Image</li> <li>- Website small menu with links to each group: Text</li> </ul>
Transition links	<ul style="list-style-type: none"> <li>- Link to connected event (title + image)</li> <li>- Link to connected itinerary (title + image)</li> </ul>
Group links	<ul style="list-style-type: none"> <li>- Link to the group page [<i>INDEX pattern: down to top</i>]</li> </ul>

Figure 9: Abstract pages

GROUP: All events	
Group title	“Events”
Image	Image
Event preview	LISTOF[Event title, event image, event date, event location]
Landmarks	<ul style="list-style-type: none"> <li>- Logo: Image</li> <li>- Homepage link: Image</li> <li>- Website small menu with links to each group: Text</li> </ul>
Group links	<ul style="list-style-type: none"> <li>- Link to each event page [<i>INDEX pattern: top to down</i>]</li> <li>- Link to summer events</li> <li>- Link to winter events</li> </ul>

MULTIPLE GROUP: Summer events	
Multiple group title	Text (max 30 char)
Image	Image
Event preview	LISTOF[Event title, event image, event date, event location]
Landmarks	<ul style="list-style-type: none"> <li>- Logo: Image</li> <li>- Homepage link: Image</li> <li>- Website small menu with links to each group: Text</li> </ul>
Group links	<ul style="list-style-type: none"> <li>- Link to each event page [<i>INDEX pattern: top to down</i>]</li> <li>- Link to winter events</li> <li>- Link to all events</li> </ul>

MULTIPLE GROUP: Winter events	
Multiple group title	Text (max 30 char)
Image	Image
Event preview	LISTOF[Event title, event image, event date, event location]
Landmarks	<ul style="list-style-type: none"> <li>- Logo: Image</li> <li>- Homepage link: Image</li> <li>- Website small menu with links to each group: Text</li> </ul>
Group links	<ul style="list-style-type: none"> <li>- Link to each event page [<i>INDEX pattern: top to down</i>]</li> <li>- Link to summer events</li> <li>- Link to all events</li> </ul>

Figure 10: Abstract pages  
12

### KIND OF TOPIC: Event

Event title	Text (max 30 char)
Event date	Date
Event images	LISTOF[image]
Event description	Text (max 2000 char)
Event time info	Text (max 100 char)
Event accessibility info	Text (max 60 char)
Event prices info	Text (max 500 char)
External link	Text (max 50 char)
Landmarks	<ul style="list-style-type: none"> <li>- Logo: Image</li> <li>- Homepage link: Image</li> <li>- Website small menu with links to each group: Text</li> </ul>
Transition link	- link to the POI that hosts the event (title + image)
Group links	Link to the group page [ <i>INDEX pattern: down to top</i> ]

### GROUP: Types of Services

Group title	"Types of service"
Image	Image
Type of service preview	LISTOF[type of service title, type of service image]
Landmarks	<ul style="list-style-type: none"> <li>- Logo: Image</li> <li>- Homepage link: Image</li> <li>- Website small menu with links to each group: Text</li> </ul>
Group links	Link to each type of service page [ <i>INDEX pattern: top to down</i> ]

Figure 11: Abstract pages

KIND OF TOPIC: Type of services	
Type of services title	Text (max 30 char)
Type of services description	Text (max 300 char)
Services list	LISTOF[service title, interactive map, service image, service description, service contacts]
Landmarks	<ul style="list-style-type: none"> <li>- Logo: Image</li> <li>- Homepage link: Image</li> <li>- Website small menu with links to each group: Text</li> </ul>
Group links	Link to group page [ <i>INDEX pattern: down to top</i> ]

GROUP: Itineraries	
Group title	“Itineraries”
Image	Image
Itineraries preview	LIST OF[itinerary title, itinerary Image, itinerary length in feet/km]
Landmarks	<ul style="list-style-type: none"> <li>- Logo: Image</li> <li>- Homepage link: Image</li> <li>- Website small menu with links to each group: Text</li> </ul>
Group links	Link to each itinerary page [ <i>INDEX pattern: top to down</i> ]

KIND OF TOPIC: Itinerary	
Itinerary title	Text (max 30 char)
Itinerary image	LISTOF[image]
Itinerary description	Text (max 500 char)
Itinerary length (km)	Text (max 30 char)
Itinerary length (feet)	Text (max 30 char)
Itinerary steps	LISTOF[POI Image,POI title, step description]
Itinerary map	Interactive image
Landmarks	<ul style="list-style-type: none"> <li>- Logo: Image</li> <li>- Homepage link: Image</li> <li>- Website small menu with links to each group: Text</li> </ul>
Transition link	<ul style="list-style-type: none"> <li>- Links to connected POIs</li> </ul>
Group links	Link to group page [ <i>INDEX pattern: down to top</i> ]

Figure 12: Abstract pages

## 6 Website wireframes

In this section screenshots of the webpage are showed with some comments, in order to have a coherence and reference with respect to the abstract pages tables.

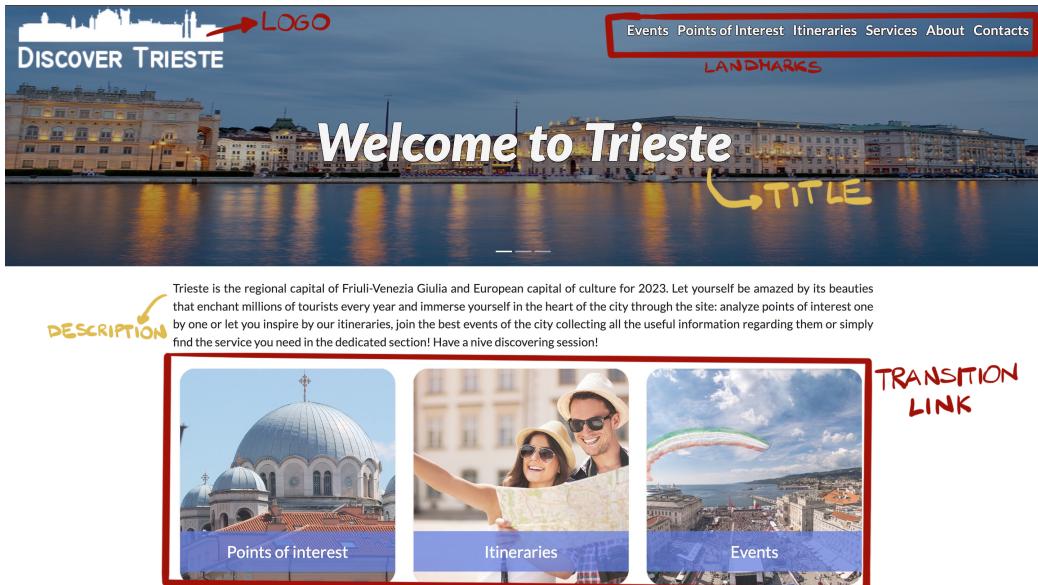
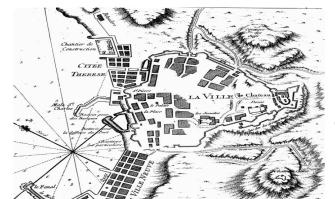


Figure 13: Homepage wireframe



→ IMAGE

Figure 14: About wireframe

Events

→ LOGO

LANDMARKS

→ IMAGE

→ GROUP LINKS

summer      winter

→ EVENT PREVIEW

→ GROUP LINKS

Figure 15: Event (group of topic) wireframe



Figure 16: Event (kind of topic) wireframe

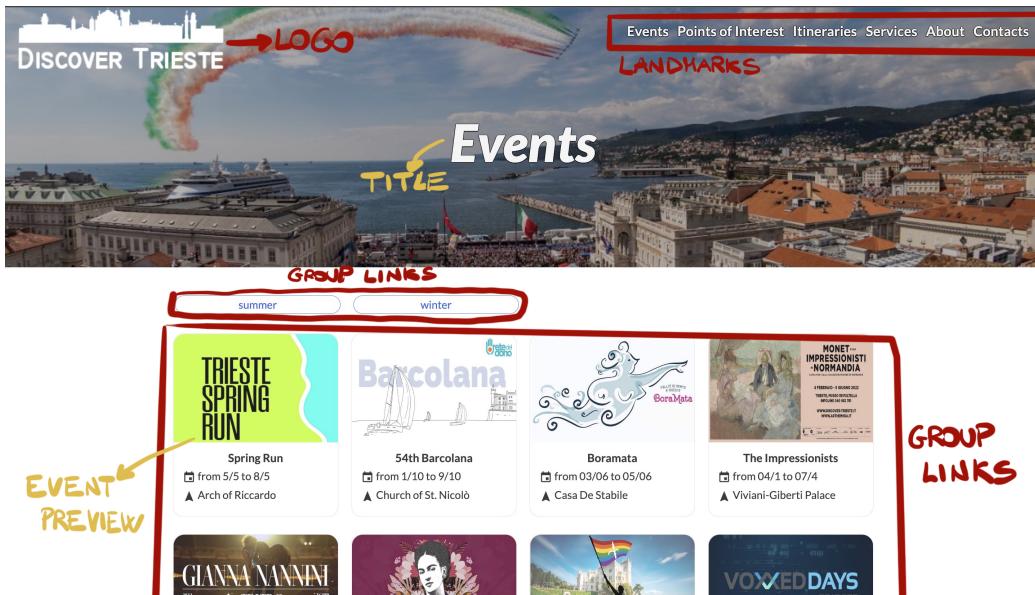


Figure 17: Itinerary (group of topic) wireframe



Figure 18: Itinerary (kind of topic) wireframe

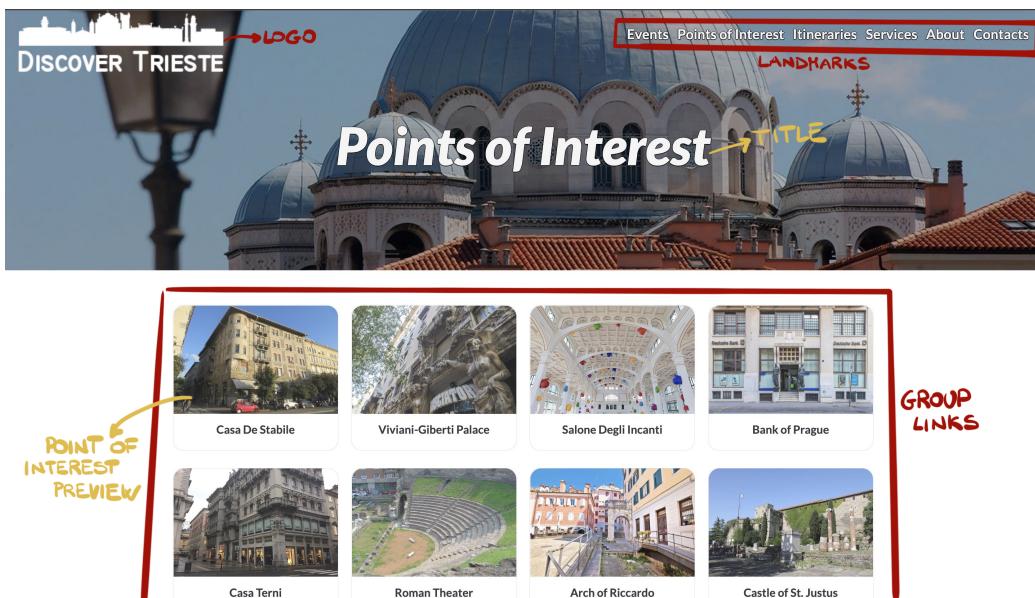


Figure 19: Point of interest (group of topic) wireframe



Figure 20: Point of interest (kind of topic) wireframe

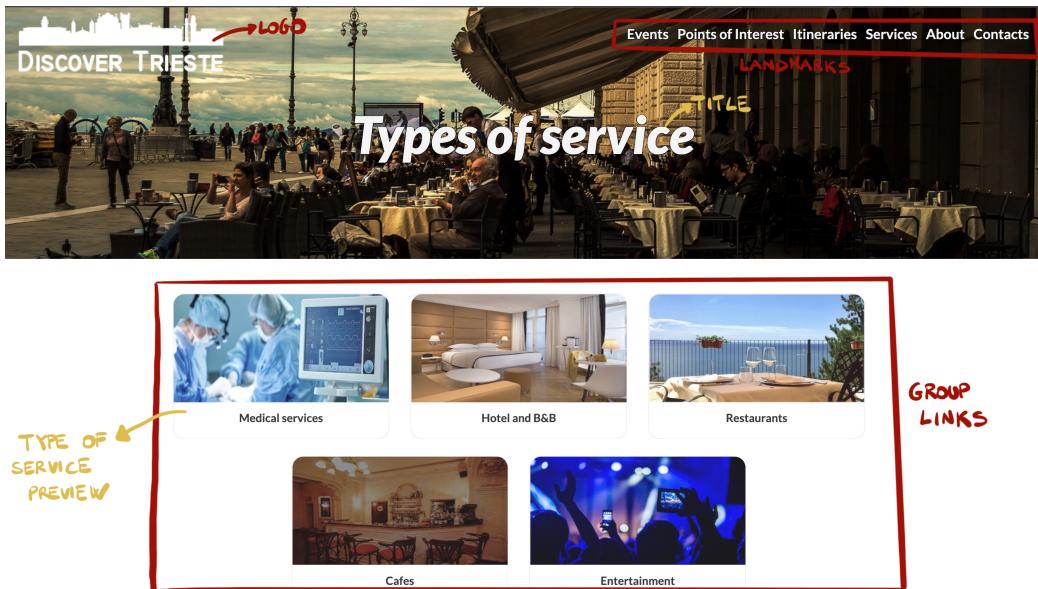


Figure 21: Type of service (group of topic) wireframe

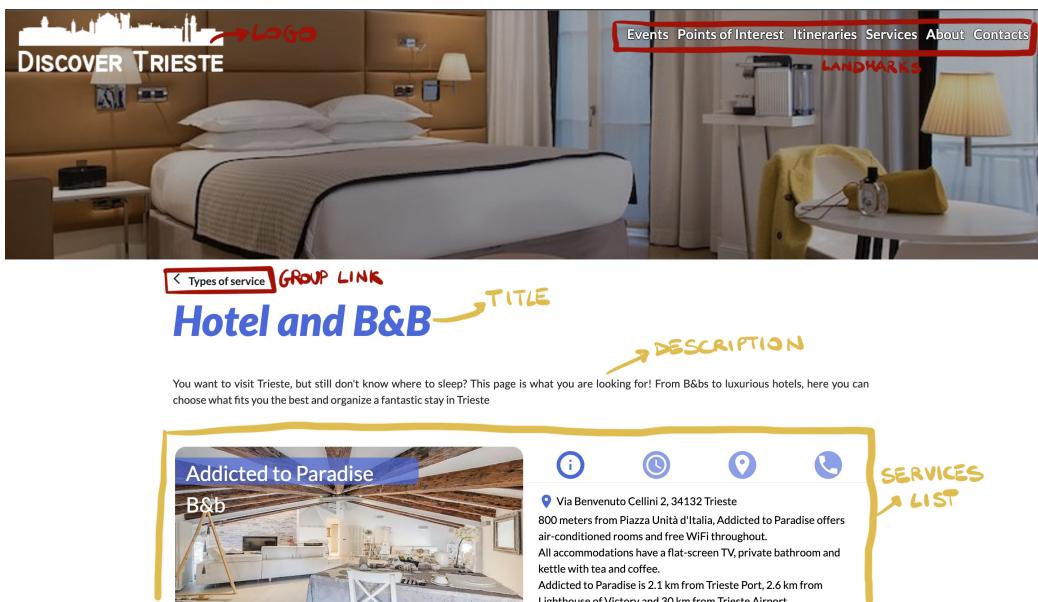


Figure 22: Type of service (kind of topic) wireframe

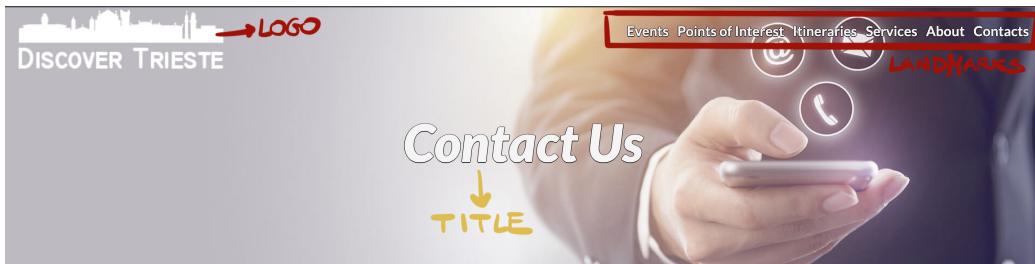


Figure 23: Contacts wireframe

In all the previous wireframes, the bottom of page was cut for space reason. Here there is a screenshot of the website footer which is present in all the pages.

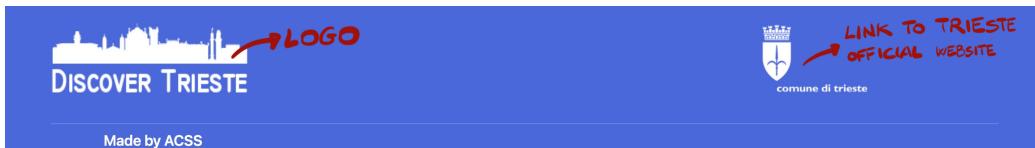


Figure 24: Footer wireframe

## **7 Interaction scenarios**

In this section scenarios are showed in order to give a sense of use of the webpage we created.

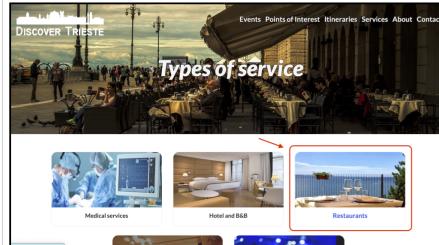
## 7.1 Scenario 1: a romantic escape

A man wants to surprise his wife during their trip to Trieste with a romantic dinner in a typical restaurants, but he doesn't know any. He then open the website to find any info. He open the website on the homepage and scrolling it, he looks at the card and try to click on services to see if he can find the restaurants.



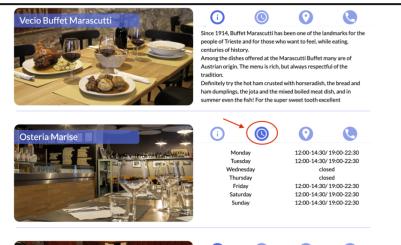
(a) Clicks on the Services card on homepage

He enters the menu of the services and sees the card of the restaurants, he immediately clicks on it.



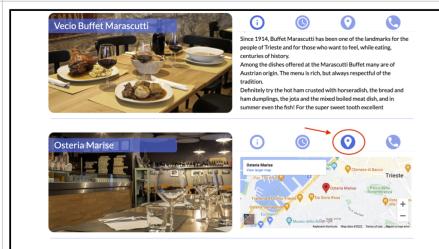
(b) Clicks on the Restaurants card on services index page

On the page of the restaurants he sees there is a list and starts reading for each restaurant the info using the tabcard. He looks at the description and at the opening time.



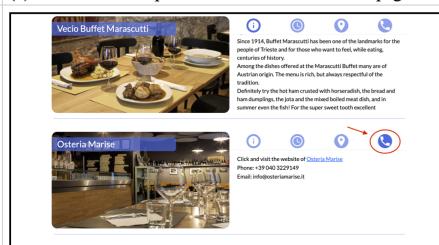
(c) Clicks on the time icon on tabcard in restaurants page

He chooses "Osteria Marise", so he first looks at the map, to understand how far is from their hotel,



(d) Clicks on the map icon on tabcard in restaurant page

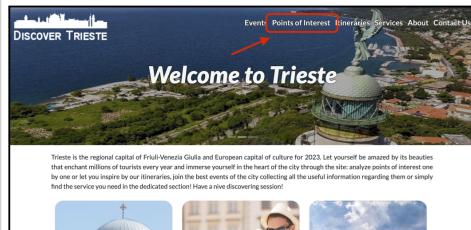
then goes on the tab of the contacts to find a phone number to call to reserve a table.



(e) Clicks on the contacts icon on tabcard in restaurant page

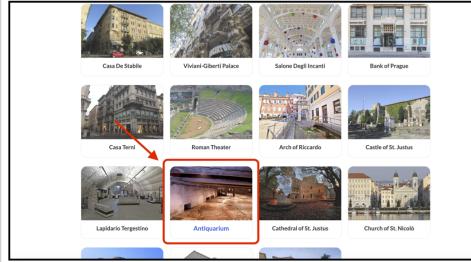
## 7.2 Scenario 2: a Roman break

A man is going back home from his trip to Croatia, but wants to stop in Trieste during his travel back to visit a little bit of the city. To arrive in the city with already some ideas, he decides to look on the website. He opens it on the webpage and sees on the menu bar on top the write “points of interest”. He decides to click on it.



(a) Clicks on POI link on header homepage

On the pois index he scrolls the list and decides to click on the Antiquarium, because he is really into the roman period.



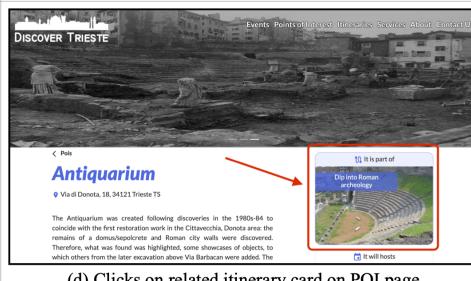
(b) Clicks on Antiquarium card on POI index page

He starts reading the description on the Antiquarium page and also the info in the tabard to see if the Antiquarium is open the day he will be there.



(c) Clicks on time icon on tabcard on POI page

While reading he realizes that on the side there is a card with a suggested itinerary. He decides to click on it.



(d) Clicks on related itinerary card on POI page

He looks at the page, he sees the total distance, the map, and he reads all the cards and realizes it is a perfect itinerary to do on his day in Trieste.  
So he decides to see each step clicking the card of the poi on the itinerary page.

**Arch of Riccardo**  
The trip continues with the Roman gate, which is an important sign of reconstruction of the city. It was a passage through the city walls built by Augustus in 33-32 B.C., after they had lost their defensive function.

**Castle of St. Justus**  
Now we are moving towards the hill, to visit one of the most representative places of the city: the castle. Inside the castle is possible to visit also the armory, the walls and the museum.

**Lapidario Tergestino**  
In the underground of Bastione Lato, we'll find a big collection of ancient monuments (around hundred units) coming from the Capitoline area, from sacred buildings, from the Theater and from the necropolis.

(e) Clicks o POI card in itinerary page

One by one, he visits all the poi pages and sees if there are tickets to buy,

Since 1930 the castle has been a property of the Municipality, which has equipped it for tourist purposes and uses it for cultural events, shows and temporary exhibitions.

Since 2001 the Latio rampart of the Castle of San Giusto has been housing the new Lapidario Tergestino, which preserves all the Roman stone finds that were previously displayed in the Orto Lapidario.

It has two different prices:  
 • For over 65 is free  
 • For students is free  
 • The regular admission is 2€

For more information about the tickets visit: [www.turismofvg.it](http://www.turismofvg.it)

(f) Clicks on ticket icon on POI page

then goes back to the itinerary page through the link in the related itinerary card.

**Castle of St. Justus**  
Piazza della Cattedrale, 3, 34131 Trieste TS

In the prehistoric age on the hill of San Giusto there was a castellum (fortified borough), which in the Roman period became an important urban centre. The fortress, built by the Venetians in the Middle Ages, was pulled down in the 14th century by will of the Patriarch of Aquileia and, in 1470 only, it was rebuilt by Frederick II of Habsburg: the square tower and the two-story building, which housed the Patriarchal Palace, were the result of this reconstruction.

Under the rule of the Republic of Venice, which at the beginning of the sixteenth century had re-established its rule over Trieste, the castle's defences were strengthened and, under the Austrian rule again, the works continued until the building, in 1630, of the large ramparts and of the linking walls.

**Dip into Roman archaeology**

(g) Clicks on related itinerary card on POI page to go back to

### 7.3 Scenario 3: the school trip

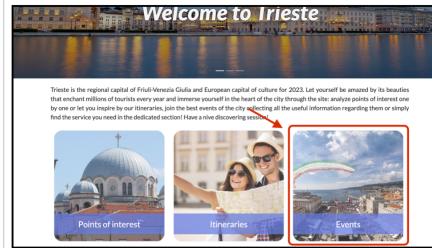
Two art professors of an high school want to organize a school trip to Trieste next summer. They know there are many place to visit, but they also want to see if there is any interesting art event in the period they were thinking for the trip.

They decide to check on the DiscoverTrieste website.

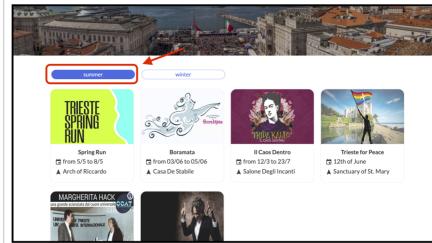
They open it on the homepage and in the cards see the events card.

They click on it and on the page of the events they immediately see the filter for the summer events.

They click on it and the list change to only the summer events.

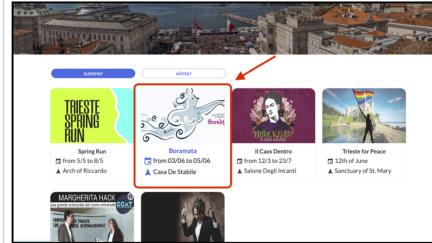


(a) Clicks on the events card on the homepage



(b) Clicks on the summer filter on the events index page

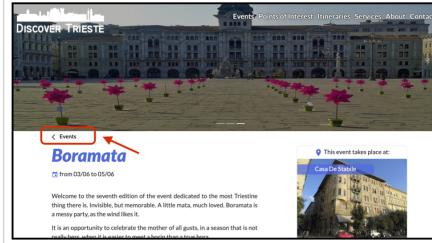
Scrolling the list they see the Boramata, it seems interesting, so they choose it.



(c) Clicks on the event card on the events index page

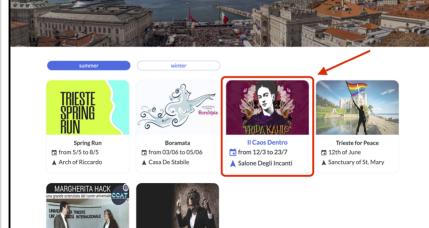
They visit the page of the event and read the description, they realize this is not interesting for their students and decide to go back.

They see a link to go back at the beginning of the page, so they scroll up and trough the link they go back to the event page.



(d) Clicks on the link to go back to the events page

They put again the filter and decide to see the Frida Kahlo event.



(e) Clicks on the event card on the events index page

This seems perfect, so they look at the tabcard to find info about the prices and discounts. They see there is a tab for prices and read it.

**Il Caos Dentro**

From 12/0 to 23/06

"Caos dentro" recounts Frida Kahlo by highlighting as much the cultural and political temperament in which the painter lived as her frailties and strengths. Above all, it aims to visitors emotionally touch with the artist, thanks to the use of modern innovative technologies that reinforce the suggestions and bring visitors closer to a woman and artist of great appeal.

The exhibition itinerary at the Salone Degli Incanti in Trieste features the original painting Pidien apercuo y les dan also de petate attributed to Frida Kahlo and 15 reproductions of famous self-portraits made between 1926 and 1949 reproduced with sophisticated midlight technology, which restores the viewer to the details of oil painting with impressive results.

Original works also include six watercolor lithographs by the artist and husband Diego Rivera, from private Mexican collections, and a hundred black-and-white and color shots by Colombian photographer Leo Matiz from the Leo Matiz Foundation in Bogotá.

Also on display are letters and diary pages, more than 40 philatelic issues (including the issue featuring the famous Self-Portrait with Necktie) (1933).



(f) Clicks on the ticket icon on the tabcard in the event page

The info they were looking for is there, but they still want to know other info about group admissions, so they decide to click on the link to the external website to the event.

**Il Caos Dentro**

From 12/0 to 23/06

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(g) Clicks on the external link on the tabcard in the event page

## 8 Effort spent

Student	Documentation	Co-work	Coding
Stefano Abatiello	2h	75h	49h
Alessandro Bianco	4h	75h	46h
Camilla Blasucci	2h	75h	45h
Stefano Taborelli	2h	75h	47h