




**P-IDM Design-part 2**  
Navigation Patterns,  
Notation, Documentation

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**NAVIGATION PATTERNS**

## + Once pages are defined...

... it is necessary to define the dialogue flows, i.e., how the dialogue can continue from one point (page) to other points (pages)

*Dialogue flows are sequences of pages and LINKS*

### HOW are links defined?

In some cases, deterministic definition:

- e.g., when the user is in a painting page and asks about its (only) painter (N-1 relationship): 1 link

In most cases, multiple alternatives:

e.g. consider a **group of topics**

- shall the system decide where to start exploring them? Or should all possibilities be offered to the user, who decides?
- What happens when a topic has been explored and the user is interested to another one in the same group?
- ....

## + Navigation Strategies

Navigation decisions are not taken casually, but some general navigation “strategies” must be defined to define links within sets of pages

### ■ Structural strategies

- How the dialogue flows among the pages about a topic (single or of a given kind)

### ■ Transition Strategies

- how the dialogue flows from the pages about a topic and the pages of a RELATED topic

### ■ Group Strategies

- how the dialogue flows withing a group of topics, e.g., from an introductory page of a (multiple) group of topics and the pages of the topics of the group, or among the pages of the topics of the group

## + Navigation patterns

Compact specifications of some general “typical” navigation strategies

Inspired to the concept of **design patterns** (used in architecture, sw eng (see MVC), e-learning, ...)

A design pattern “... describes a *problem* which occurs over and over again in our environment, and then describes the core of the *solution* to that problem, in such a way that you can use this solution a million times over, without ever doing it the same way twice” [Alexander, 1979]. It provides a descriptive structure for integrating the analysis and the solution of a recurring problem, in a way that is sensitive to context, is informed by theory and evidence, and is *re-usable with a minimum degree of customization*. (C. Alexander, 1979)

## + Navigation Patterns

- General **Topologies** of nodes (pages) and arcs (links) that have been proved effective and usable for navigation in large hypermedia structures

3 main navigational patterns :

- GUIDED TOUR
- INDEX
- ALL-TO-ALL

- Can be intermixed and combined

- See paper

Garzotto F., Paolini P., Bolchini D., Valenti S. *Modeling-by-Patterns" of Web Applications*. In Proc. WWWCM'99 - World-Wide Web and Conceptual Modeling, ER'99 Workshop, Paris (Fr), Nov. 1999, Springer, 1999, Lecture Notes in Computer Science, 1823/1999

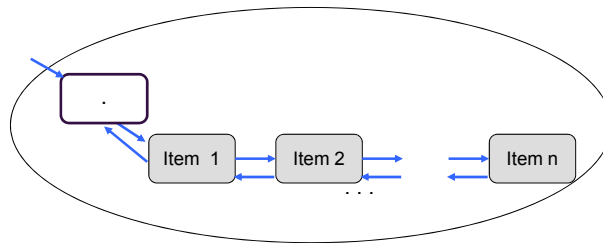
## + Guided tour pattern

Guided Tour  
(GT)

When to adopt this pattern?

**Problem:** To provide “easy-to-use” access to a small group of objects, assuming the user has no reason (or is unable) to select one of them.

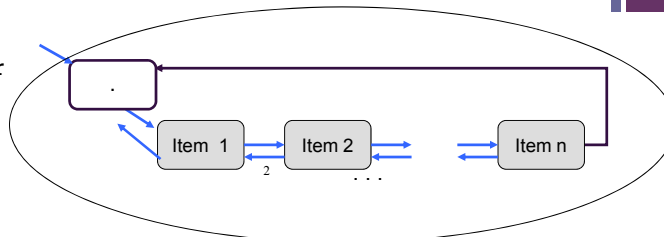
**Solution:** The solution consists of identifying an order among the group members, and creating sequential bidirectional links among them.



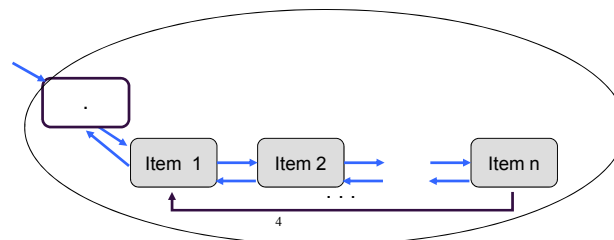
## + Guided Tour Pattern: variants

A GT variant is the circular guided tour, where the last member is linked to the first (or to the second, if the first is an introduction to the group).

Circular Guided Tour  
(C-GT) – version 1



Circular Guided Tour  
(C-GT) – version 2



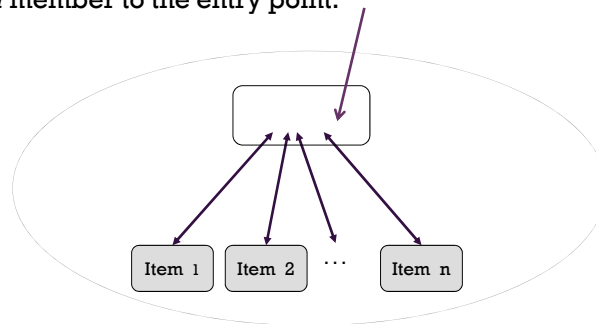
## + Index Pattern

When to adopt this pattern?

**Problem:** To provide fast access to a group of objects for users who are interested in one or more of them and are able to make a choice.

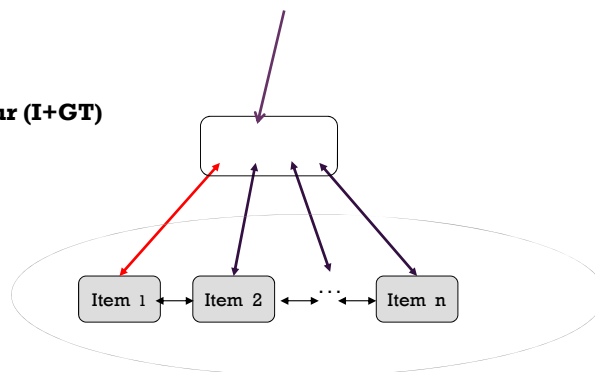
**Solution:** The core solution consists of defining links from the entry point of the group collection (the introductory page in IDM) to each member, and from each member to the entry point.

Index (I)



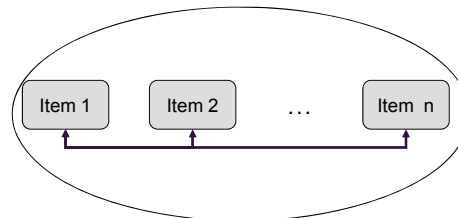
## + Combining Patterns: Index + Guided Tour Pattern

Index + Guided Tour (I+GT)



## + All-to-all Pattern

### ALL-To-ALL (A2A)



**Problem:** To speed up navigation in a group of objects, so that the user can jump directly from one member to another without returning to the collection entry point.

**Solution:** linking each member of the group to all other members of the collection,

## + How to use navigation patterns

- Navigation patterns provide an intensional, compact representation for a set of links among groups of pages
- They improve readability of documentation: by “attaching” a pattern name to a group of pages, we specify all possible navigation paths and avoid defining each link explicitly and intensionally



## Documentation & Notation



## P-Design: OUTPUT



- **Graphical + textual specification** of all pages and page types that will be implemented and generated by the application

- “Site Map” (graphical P-IDM schema) + documentation (textual)



- **“Concrete” page design**

- **Sketches** that describe each page (type) in terms of links and examples of realistic contents” + comments (e.g., categories of links, their destination, etc.)

## + P-IDM textual specification

### ■ Textual descriptions and comments:

- The detailed content of each page should be defined textually (not graphically)
  - It is derived from the dialogue acts defined in the textual documentation of L-IDM – you can make references to L-IDM or specify the act contents again in P-IDM
- The patterns associated to each group of pages should be defined both textually and graphically, associating pattern names/code (e.g., I (Index ), GT (Guided Tour), CGT (Circular Guided tour), I+GT, A2A (All-to-All) to sets of topic pages, *Introductory pages* and *Transition Pages*
- **Motivations for merging acts should be included!!**

## + P-IDM graphical notation: TOPIC PAGE and HOME page

Topic Page containing **ONE**  
Content Dialogue act



Topic Page containing **SEVERAL**  
Content Dialogue acts for the same  
topic



To put a Transition Act **INSIDE** a Topic  
Page



Example:



Home page





## + P-IDM graphical notation: TOPIC PAGE

Set of pages corresponding to all Content Dialogue Acts of a SINGLE Topic



Set of pages corresponding to all Content Dialogue Acts of a MULTIPLE Topic



Entry Point "Marker" (where navigation within a topic starts from)



## + P-IDM graphical notation: INTRODUCTORY and TRANSITION PAGE

Introductory Page corresponding to the Introductory Dialogue Act of a single group



Introductory Page corresponding to the Introductory Dialogue Act of a Multiple group

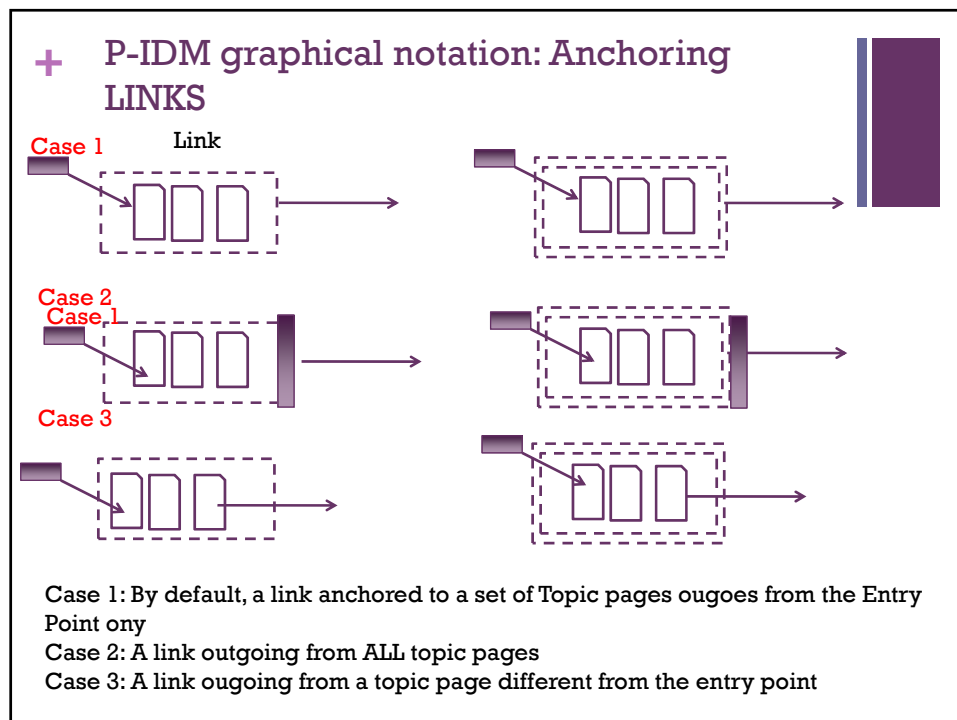
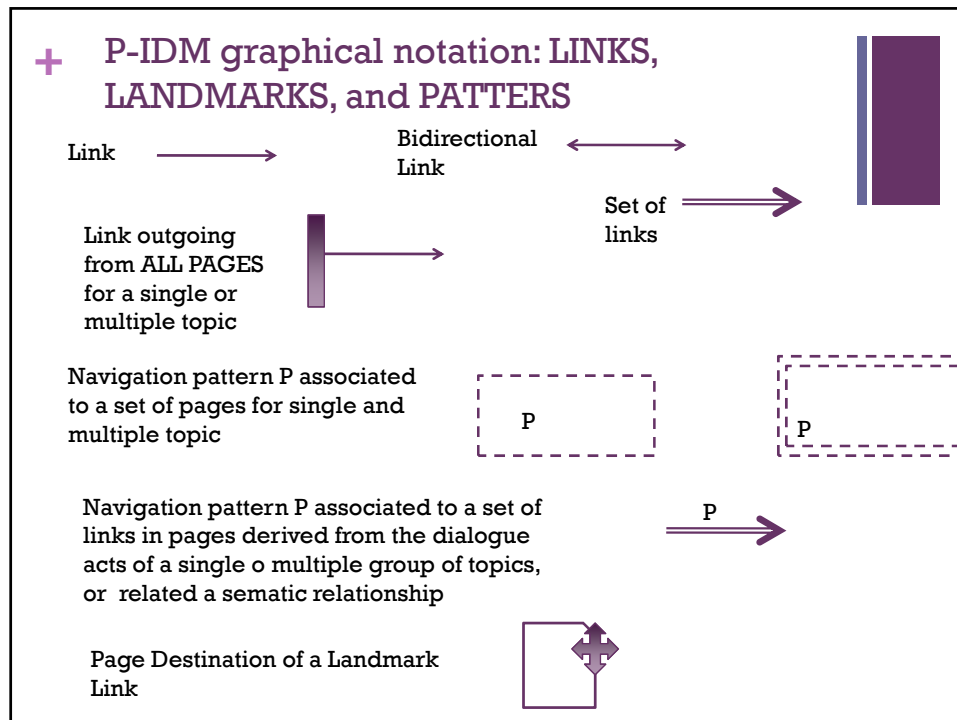


Introductory Page merging several Introductory Acts



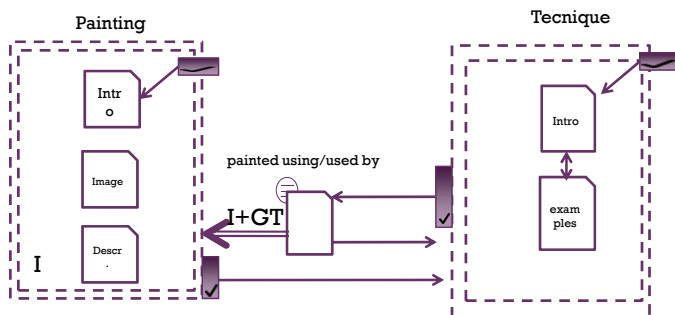
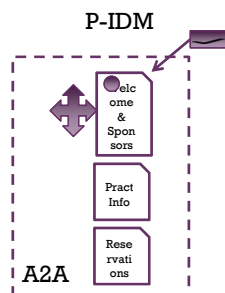
Transition Page



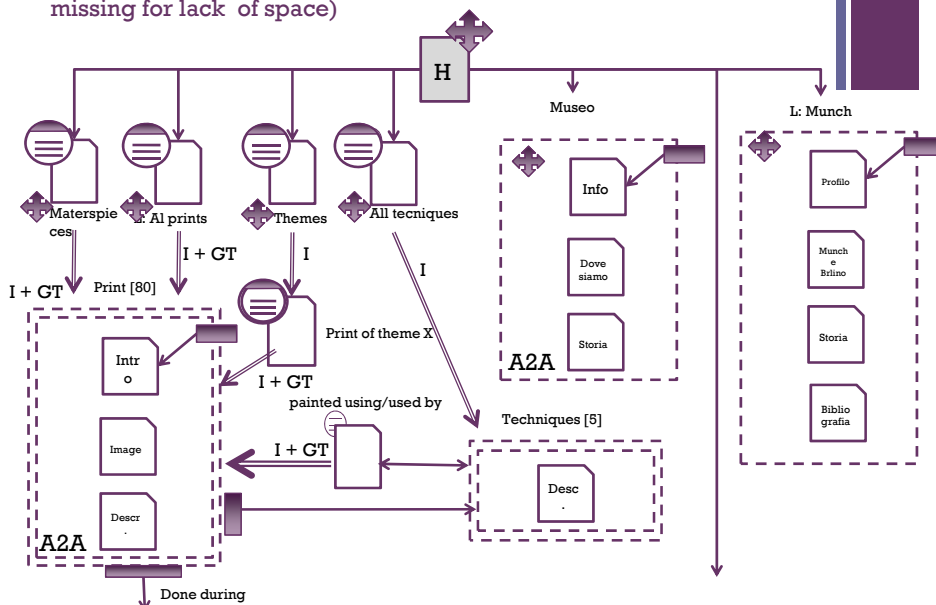


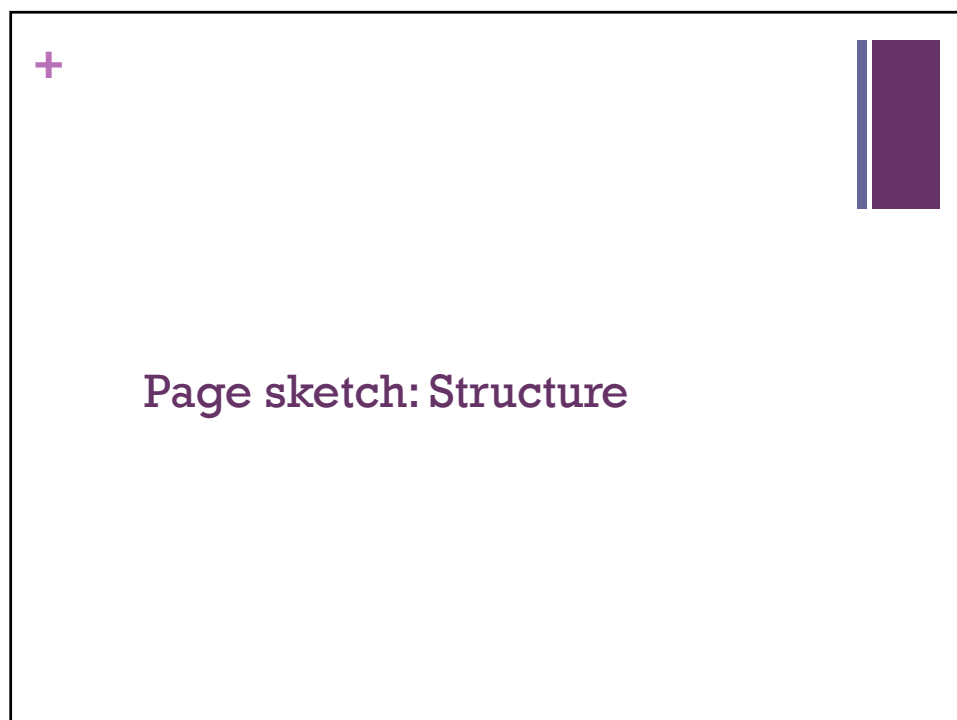
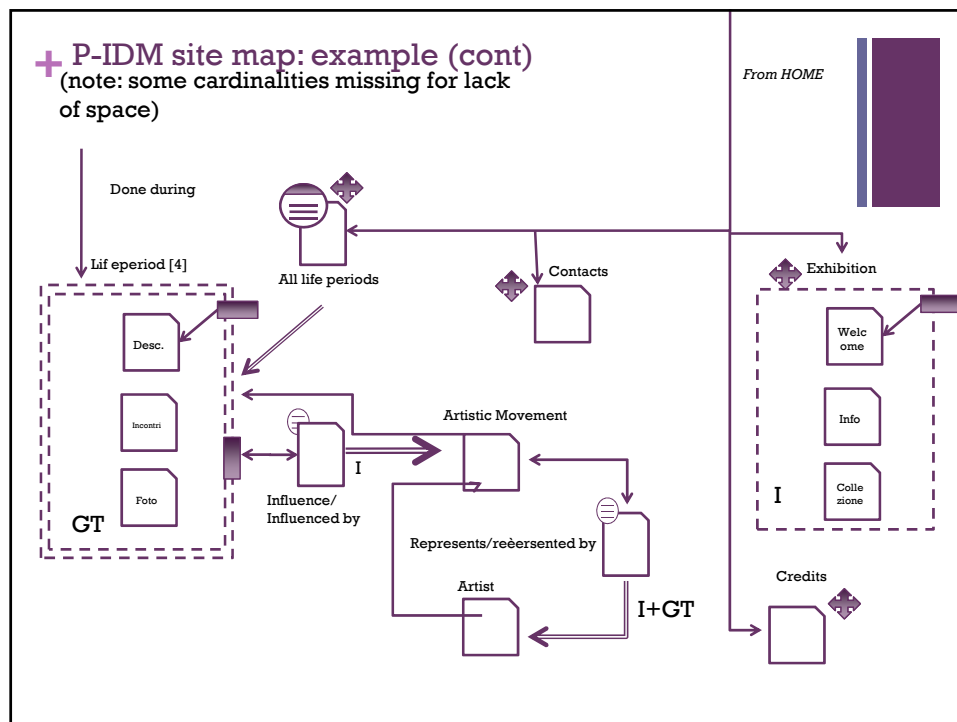
## + Examples

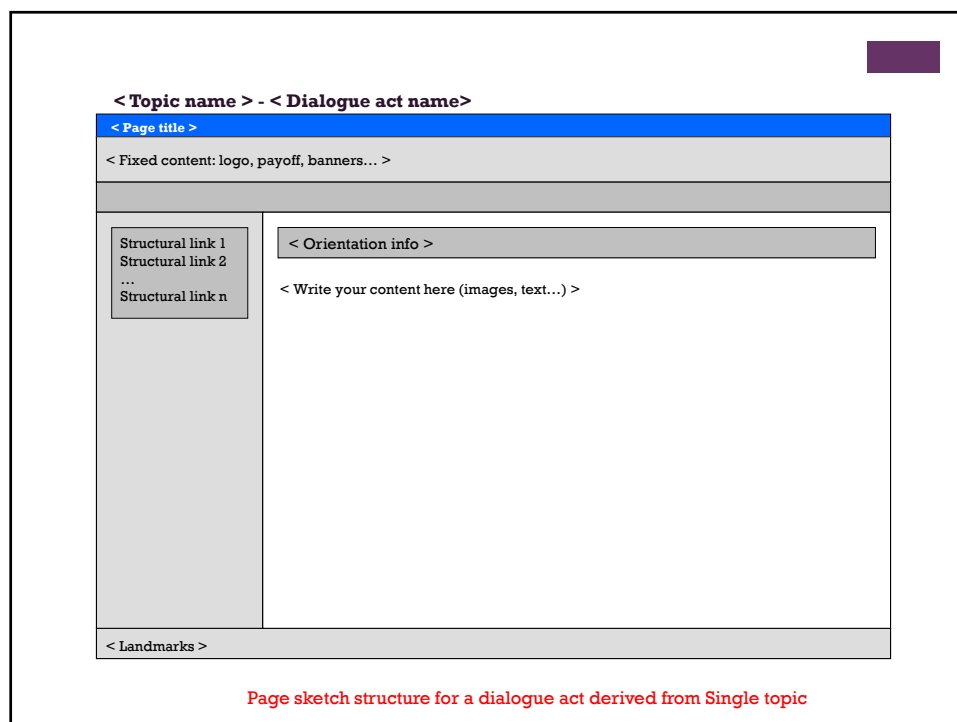
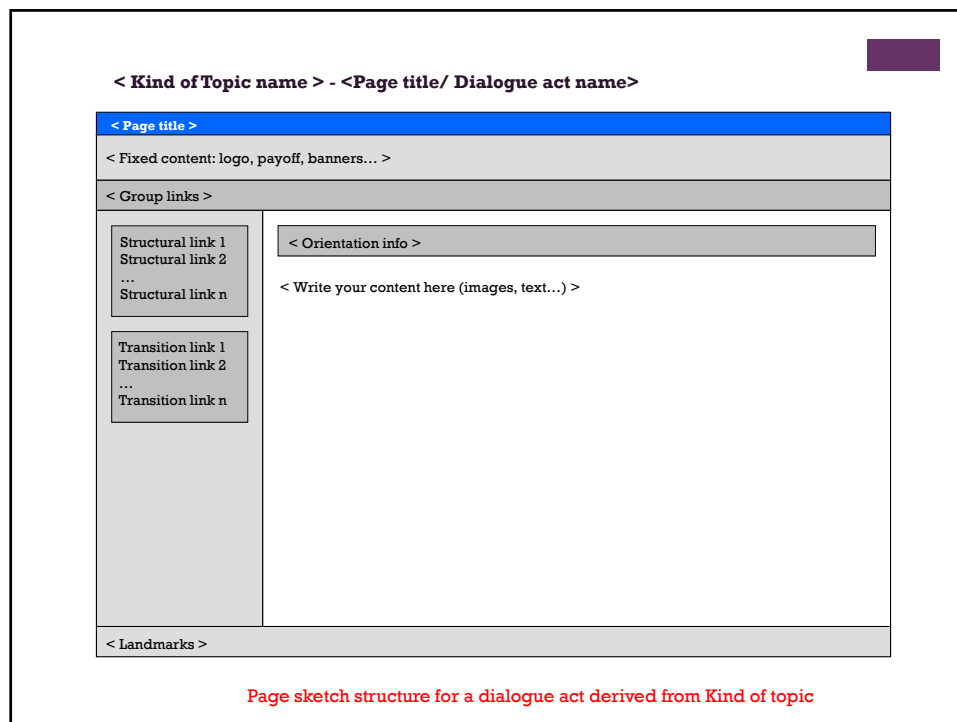
L-IDM  
Exhibition




+ P-IDM site map: example (1) (note: some cardinalities missing for lack of space)










**< Relevant Relationship/Transition act name>**

<b>&lt; Page title &gt;</b>	
<b>&lt; Fixed content: logo, payoff, banners... &gt;</b>	
	<div style="background-color: #d3d3d3; padding: 5px; margin-bottom: 10px;"><b>&lt; Orientation info &gt;</b></div> <p style="margin: 0;"><b>&lt; Write your content here (images, text...) &gt;</b></p> <p style="margin: 10px 0 0 20px;">List of <b>&lt; Semantic link (to the target of the relationship, i.e., the pages for the related topics)&gt;</b></p> <ul style="list-style-type: none"> <li>➤</li> <li>➤</li> <li>➤</li> <li>➤</li> </ul> <p style="margin: 20px 0 0 20px;">➤ <b>&lt; Semantic link (to the source of the relationship, i.e., the page from which the “relationship?” has been invoked)&gt;</b></p>
<b>&lt; Landmarks &gt;</b>	

Page sketch structure for a Transition Act



**(Multiple) group name name > - < Introductory act name>**

<b>&lt; Page title &gt;</b>	
<b>&lt; Fixed content: logo, payoff, banners... &gt;</b>	
<b>&lt; Other Group links &gt;</b>	
	<div style="text-align: right; margin-bottom: 10px;"><b>&lt; Orientation info &gt;</b></div> <p style="margin: 0;"><b>&lt; Write your introductory content here (images, text...) &gt;</b></p> <p style="margin: 10px 0 0 20px;"><b>&lt; Group links &gt;</b></p> <ul style="list-style-type: none"> <li>➤</li> <li>➤</li> <li>➤</li> <li>➤</li> </ul>
<b>&lt; Landmarks &gt;</b>	

Page sketch structure for a Introductory Act



## Page sketch: Examples

< Kind of Topic name: PRINT > - <Page title/ Dialogue act name: Intro>

< Page title: Sick Child >

< Fixed content: logo, payoff, banners... >

< Group Links: MASTERPIECES; THEME: SICKNESS AND DEATH >

<<PREVIOUS NEXT >>

Structural links:  
DESCRIPTION  
BIG IMAGE...  
Structural link n

Transition links:  
TECHNIQUE  
PERIOD OF LIFE

< Orientation info: Edward Munch Prints - You are in tour MASTERPIECES>



**Year:** 1894  
**Size:** 36,1 X 26,9 cm  
**Collection:** Berliner Kupferstichkabinett  
**Technique:** Drypoint, roulette and burnishing on copperplate  
**Theme:** Sickness and Death

**Introduction** The etching "The sick child" is an inverted reproduction of Munch's famous painting from 1885/86. Munch was coming to terms with the death of his favourite sister Sophie. She died in 1877 of tuberculosis when Munch was just 14 years old.

< Landmarks > CREDITS - EXHIBITION - CONTACTS - MUSEUM - PRINT TECHNIQUES - MUNCH'S LIFE - EDWARD MUNCH

Page sketch for a dialogue act derived from Kind of topic

See <http://www.munchundberlin.org/drawing.jsp?esce=int&section=11&coll=2&paid=6>

< Topic name: EDUARD MUNCH > - < TO START WITH >

**INTRODUCING EDWARD MUNCH**

< Fixed content: logo, payoff, banners... >

**Structural link:**

- Historical Background
- Bibliography

To start with

Löten (Norway), 12 December 1863 - Ekely (Norway), 23 January 1944

Edvard Munch was a famous painter and graphic artist. He was one of the most famous Norway and was ground breaking in European, but particularly German art development, taught by the sculptor J. Middelthun, from whom he learned figure drawing, and by Léon during his stay in Paris. In a studio community with six other artists in Kristiania (Oslo), contact with realistic painting.

Christian Krogh, one of the most important realistic painters in Norway coached this group. During his study trips to France, he got to know impressionist art. He was greatly impressed by direction, and he elaborated his own, unique style, which we can see for the first time in "Adolescence" and "The sick child". These paintings were seen by many of his contemporaries as scandalous. The main themes that always returned, sorrow and death, loneliness and love and jealousy, reflected his personal and health problems as well as the pessimistic life, and the deep fear of existence of his generation, around the turn of the century. His work "The Scream" became an allegory of expressionism.

The artistic work of Munch can be divided in two main periods: The "dark" period until his breakdown in 1908, and the time after. After his stay in a mental institution, the themes were distinctly more optimistic than before and also his colours became brighter.

Munch's painting is connected with the French SYNTHETISTEN and the FAUVISTEN. Also, the abandonment of the natural colours and the simplification and stylisation of the motives.

< Landmarks > CREDITS - EXHIBITION - CONTACTS - MUSEUM - PRINT TECHNIQUES - MUNCH'S LIFE - EDWARD MUNCH

Page sketch for a dialogue act derived from Single topic  
<http://www.munchundberlin.org/munch.jsp?esce=int&section=F1>


< Relevant Relationship: Print created using technique >

**< Index of Prints created using DRYPOINT technique >**


< Fixed content: logo, payoff, banners... >

< Orientation info: from DRYPOINT to Prints using this technique >


You are viewing all the Prints of this technique, but I can also show you only the Prints you have already seen or only those you've already visited



Richard Mengelberg  
1894



Portrait of a Young Woman (The American Girl)  
1894



Death and the Woman (Death and the Woman)  
1894

>> Semantic link (to the source of the relationship):  
**RETURN TO DRYPOINT TECHNIQUE**

< Landmarks > CREDITS - EXHIBITION - CONTACTS - MUSEUM - PRINT TECHNIQUES - MUNCH'S LIFE - EDWARD MUNCH

Page sketch structure for a Transition Act  
[http://www.munchundberlin.org/draw\\_of\\_tech.jsp?techid=5#begin](http://www.munchundberlin.org/draw_of_tech.jsp?techid=5#begin)



**Group name : Munch' Life**

< Page title >

< Fixed content: logo, payoff, banners... >

< Other Group links >

< Orientation info >

Munch's life

Edvard Munch (1863-1944)

You are viewing all the periods of Life, but I can also show you only the periods you haven't seen or only those you've already visited

< Group links > →

- Childhood and youth in Norway 1863 - 1880
- The beginning of his artistic career 1881 - 1884
- Stays in Paris and first exhibition 1885 - 1891
- Berlin period 1892 - 1895
- Success and crisis 1896 - 1907
- Return to Norway 1908 - 1944

< Landmarks > CREDITS - EXHIBITION - CONTACTS - MUSEUM - PRINT TECHNIQUES - MUNCH'S LIFE - EDWARD MUNCH

Page sketch for an Introductory Act  
[http://www.munchundberlin.org/all\\_pol.jsp?section=Q1#begin](http://www.munchundberlin.org/all_pol.jsp?section=Q1#begin)

**Group name : Thematic Tour**

< Page title >

< Fixed content: logo, payoff, banners... >

Thematic tour

Munch dealt with the same themes again and again in his works: illness, fear, death, love, jealousy, despair, loneliness and melancholy. The decisive and formative influences in his youth were the death of his mother and of his sister Sophie after a long illness. He overcame these traumatic experiences with his drawings "The sick child" and "Death in the sickroom". The other important subject area for Munch was love and its consequences. From the "growth" of the first love to nearness, fulfilment, failure, separation, jealousy and melancholy he repeatedly dealt with the single phases of a love affair. During an interval due to his momentary psychological state of health, he constantly revised versions of his paintings or prints. In the field of graphic art, he already treated existing print plates to make new variants. Often, he spent decades with one particular motive. Only through the repeated treatment in different pictorial representations was he able to present all the different facets that it contained. With the combination of all of the variants, the theme became complete.

< Group links > →

Begin the tour of all the themes or select a theme:

- Fight between the Sexes: Love and Jealousy
- Sickness and Death
- Loneliness and Fear of Existence
- Portraits
- Self Portraits

< Landmarks > CREDITS - EXHIBITION - CONTACTS - MUSEUM - PRINT TECHNIQUES - MUNCH'S LIFE - EDWARD MUNCH

Page sketch for an Introductory Act  
[http://www.munchundberlin.org/them\\_tour.jsp?esce=Techniques&null](http://www.munchundberlin.org/them_tour.jsp?esce=Techniques&null)

## + Exercises

- Perform reverse design of <http://www.yoox.com> and create
  - C-IDM map
  - L-IDM map
  - P-IDM map
  - Discover patterns in
    - <http://www.nga.gov>
    - <http://www.rijksmuseum.nl/>
    - <http://amazon.com>



Garzotto-Paolini-Bruna