Visualizing Information Space:
Perspectives Image Browser Project

Graduate Design Studio I
Fall 2004
Dan Boyarski

Monica Gonzalez
Jody Lange
Laura Wright

PLANNING

LATCHing on to the idea

We began our new project by practicing ways of using Worman's "hatracks" to organize and map information by Location, Alphabet, Time, Category, and Hierarchy. Monica presented a depiction of her life through an elaborate illustrated map of the places that had been important to her throughout her life. Laura also used location to show her various moves. Jody mapped life roles and color-coded them according to whether they sapped or produced energy.

D-Day: Derthick's Dilemma

On October 13, our internal client Mark Derthick showed us the prototype browser his team had created from data that had been metatagged in Berkeley, California for the Fine Arts Museums of San Francisco. By his admission, it was imperfect. Our first impression was that the site did not show off the artworks to the best degree; the filtering system was a bit baffling, resulting in the appearance of thumbnails that were not always expected; and the tickmarks at the top of the categories, while potentially interesting to a statistician, were inexplicable to us.

Mark presented us with a challenge, and while it took a few more class sessions, we were eventually able to articulate the problem statement this way: *Create a usable front end on a database of artworks from the Fine Arts Museums of San Francisco*
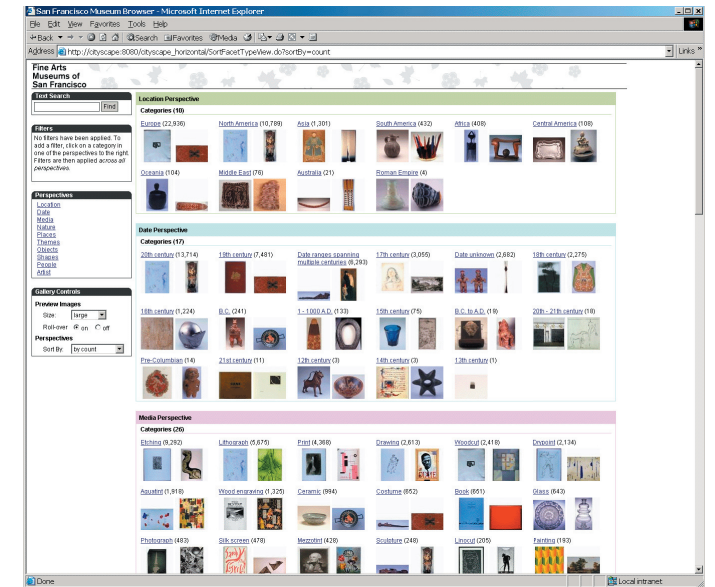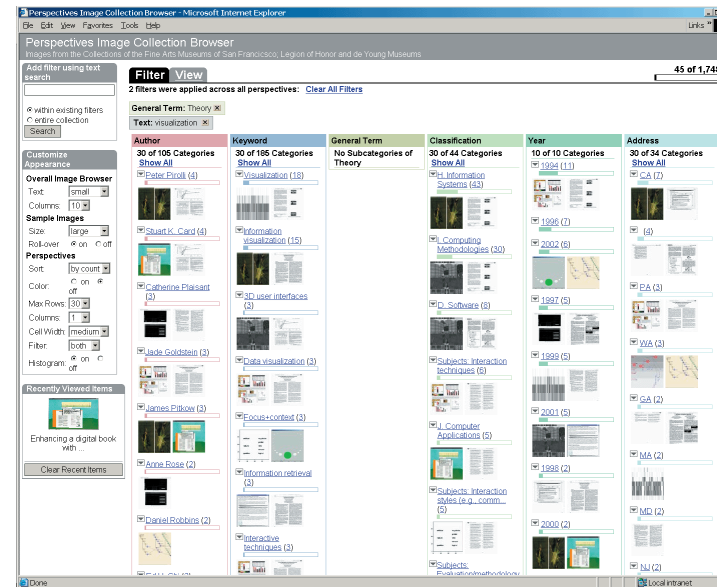
Setting Goals

The class began to develop additional ideas about what the site could and should do:

Provide a macro view of the corpus of the work as well as a microview

Be a research tool that will facilitate making contextual relationships

Have the ability to answer questions, understand what's there, and what's not

Create a platform to display the art without upstaging it or detracting from it

Support browsing and searching

In the end our goal was to provide wider access and enable more people to have contact with the works. (This would be reinforced by our later conversation with a museum curator, who articulated her mission as "sharing.")

This was the first—but certainly not the last—time we would ask ourselves: what is the real problem? Were we creating a search tool or an entire website? Agreeing on the answer to this question would plague, haunt, and torture us for weeks to come.

Museum Browsing

As a class, we began at the beginning: by conducting a scan of existing museum websites to compile a preliminary "wish" list of features that we might want to explore.
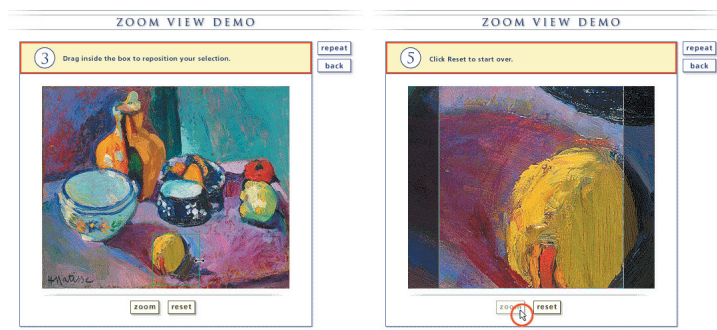
Site Seeing

Next we demonstrated for the class websites with navigational features that we admired and found particularly useful. Among these were:

Getting a picture of the whole, allowing people to layer iin

Selecting what you want, and what you don't

Predicting what questions someone might ask, and having a way to answer them

We also displayed websites that were just plain graphically impactful and fun.

Scenario Setting

We also made some assumptions about the kinds of users who might come to our site. The class felt that Mark's user definition of an art historian conducting research was too narrow. We used big sheets to list the different kinds of users and their potential needs.

From secondary research, we came to the conclusion that, in general, people visit museum websites for these reasons:

To explore a personal or scholarly interest

To learn about a museum not in their locale

To have a fun and interesting experience
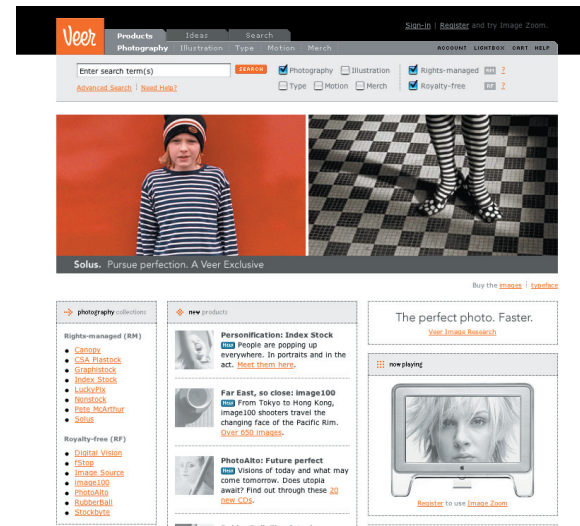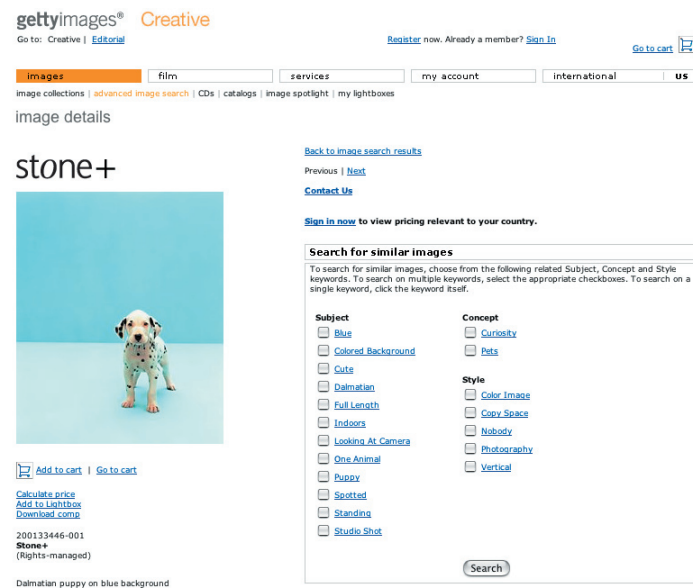
Art historians
Need for digital images and contextual information
Classify images based on their iconography
Vivid descriptive narratives
Theory drawn from narratives
Material for educational packets
Art studio instructors
Animations
Reconstructions
Other innovative ways to visualize static materials

Teachers
Teaching social studies, history, foreign languages, other subjects
Use multimedia to keep classroom focused and attentive

Students
Learning social studies, history, foreign languages, other subjects
Upload essays, research papers
Create your own museum

Visitors
Personal context is single greatest influence on their experience
Free learning
What to see
Where favorite objects are located in museum
Special events
Recent exhibits

Virtual Visitors
Particularly those with visual or hearing impairment or mobility limitations
Design web experience free from electronic accessibility barriers
Enlightening experience for all visitors

Scholars
Teachers
Students
Museum visitors
Museum staff

We created a preliminary user scenario to help us think through what kind of features we might want our site to have:

It's 8:30 p.m. and Vereaux Reynolds is searching the web for images to enhance her middle school project on sculpture through the ages. She has stumbled upon the San Francisco Museums' web site after she typed in "Rodin's Thinker" on google. It turns out that The Legion of Honor Museum in San Francisco features this sculpture. Vereaux wonders how big it actually is and where it is located in the museum. She wonders what it is made of. She wonders about Rodin's life, where he came from, where he studied, who inspired his work, and who he went on to inspire. She would like to print out a picture of the sculpture, large enough to be her project's cover. She would also like to find a picture of Rodin himself.

She wonders what other famous sculptures they have there. Do they have African sculpture? Asian? Ancient?

Is there a link between the museums' sculpture and their drawings and paintings, in terms of themes that were popular during certain periods, perhaps?

Since Vereaux lives within a day's trip of San Francisco, she wonders whether the Legion of Honor would make a good field trip for her class. She 'd like to find out what special exhibits are there now, whether the art she is interested in is currently on exhibit, and when the museum is open. She also is curious as to whether James, a boy in her class with mobility impairment that precludes travel, can join them virtually on the trip.
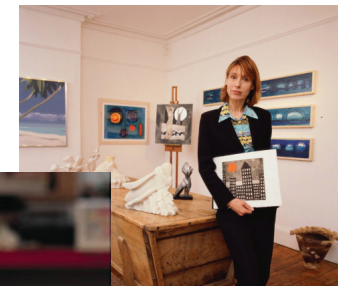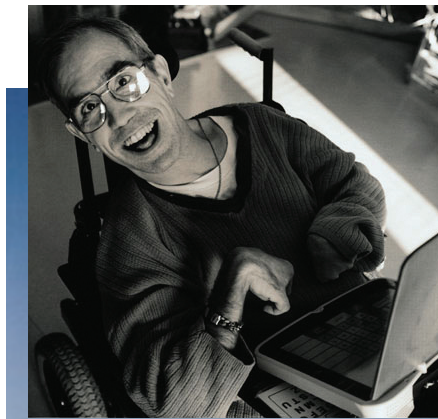
Speed Data-ing—Getting to know the data

We toiled with a way to search through the 10 metatagged categories. Further exploration revealed that they were often incomplete, unintuitive, and arbitrary. At first we were deterred by vagaries in the data. As the project proceeded, we learned to ignore or accept the limitations and move forward.

At this point we attempted to slice the 37,000 data points in various ways to discover what was important, what could be related to each other, and what we would do without. We made preliminary sketches to display our conclusions.

At this point, Monica was delving into the category of medium (how a piece is made); Laura was investigating physical attributes; and Jody was grappling with content. Among our interesting discoveries:

287 references in the data set to "vinegar"

a pair of cream-colored shoes classified as food

more items not categorized than categorized

Banding Together

Our most serendipitous discovery was the fact that our individual areas of exploration seemed to converge. We also shared something else: the tendency to step away from the data and ask "So what?" We hoped that this was a healthy skepticism that would eventually lead to a meaningful and relevant user experience.

It was Monica who suggested we combine efforts, and thus The Three Amigos design team was born.

We made preliminary sketches to display our conclusions about the relationships within and between the data sets.

Predicting Questions

One of the most troubling areas for our team was discerning the likely questions that our web visitors might ask of the data and how that would lead to a next question and another.

Surely, we thought, there were "typical questions" from museum visitors that would occur in a logical flow. We attempted to contact two Carnegie Museum of Art curators for their thoughts, leaving each a voicemail in an attempt to articulate what we were after.
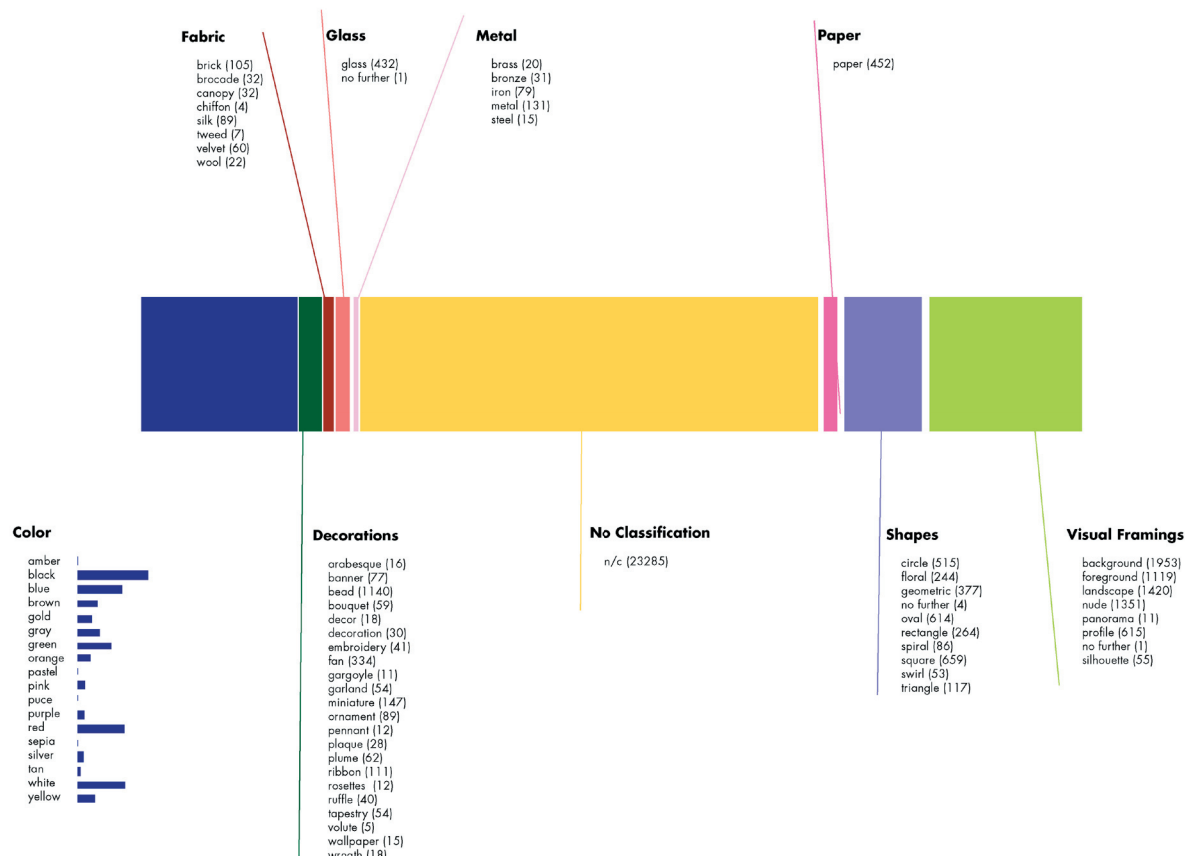
Meanwhile, our professor was able to arrange a field trip to the museum, to be hosted by one of the curators. (A funny aside, the second curator returned our call—three weeks later! Learning point: museum curators are busy people. And they don't often talk to each other!)

We also uncovered a white paper published in 1995 by the Consortium for the Computer Interchange of Museum Information (CIMI). In it the authors presented a preliminary attribute set for retrieval of museum information, including the most common logical data groups that users request.

The paper also described requests that users make but do not overtly ask for, which they termed "implied questions" that "float" along with the asked question. An example of an implied question is: Is the image on display and how can I see it? Other questioners were described as simply "fishing" for information without knowing exactly what they were seeking.

We determined that we must address all three kinds of questioners: the common; the implied; and the fisherman.

Fabric
brick (105)
brocade (32)
canopy (32)
chiffon (4)
silk (89)
tweed (7)
velvet (60)
wool (22)

Glass
glass (432)
no further (1)

Metal
brass (20)
bronze (31)
iron (79)
metal (131)
steel (15)

Paper
paper (452)

Color
amber
black
blue
brown
gold
gray
green
orange
pastel
pink
puce
purple
red
sepia
silver
tan
white
yellow

Decorations
arabesque (16)
banner (77)
bead (1140)
bouquet (59)
decor (18)
decoration (30)
embroidery (41)
fan (334)
gargoyle (11)
garland (54)
miniature (147)
ornament (89)
pennant (12)
plaque (28)
plume (62)
ribbon (111)
rosettes (12)
ruffle (40)
tapestry (54)
volute (5)
wallpaper (15)
wreath (18)

No Classification
n/c (23285)

Shapes
circle (515)
floral (244)
geometric (377)
no further (4)
oval (614)
rectangle (264)
spiral (86)
square (659)
swirl (53)
triangle (117)

Visual Framings
background (1953)
foreground (1119)
landscape (1420)
nude (1351)
panorama (11)
profile (615)
no further (1)
silhouette (55)

Standard Pairing of Data Groups

Creator/Title
Subject/Date
Classification/Date
Material/Object/Style
Subject/Place
Object/Place
Classification/Style

Probing the Mind of a Curator

Our curator reinforced many of the class assumptions about what basic information should be included in the "tombstone" text. But the big aha! for our team was her summation: visitors and researchers want the basics—the who, what, when, where, how—and as much of the why (or back story) as can be provided. That thought, and her language, stuck with us.

A second, smaller aha! was her simple description of a museum's mission: to share the work.
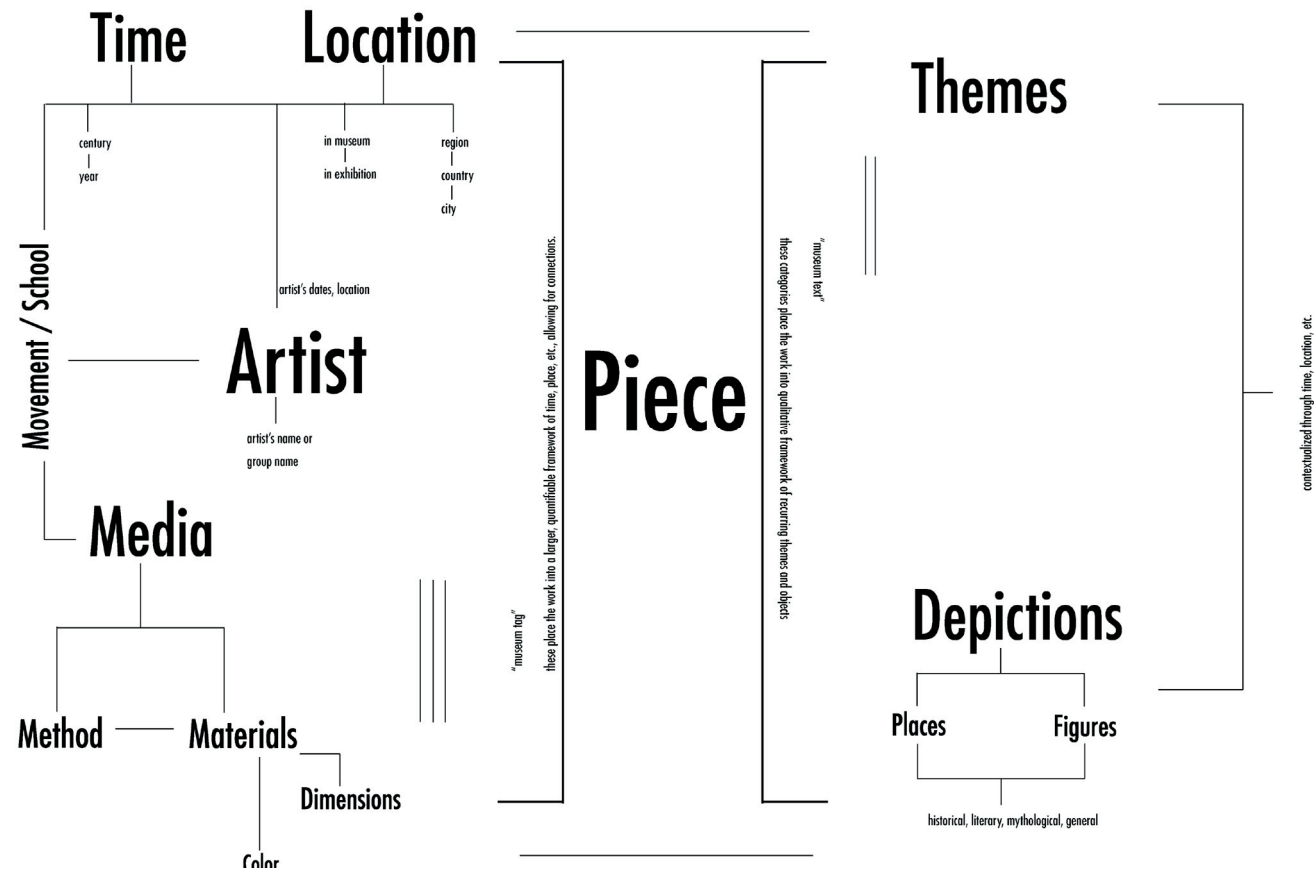
The final aha! was her suggestion of the "one-hour highlights tour" for visitors who want maximum impact with limited time. With this inspiration in mind, we had one final area to explore—the art itself.

Glimpsing inside FAMSF

We came to the realization that, up until this point, we had been dealing with the works of art merely as data points. We needed to get a feel for the flavor of the works. We placed a call to the Legion of Honor (the de Young is being renovated) and spoke with a docent who gave us the "highlights' version of the current works on exhibit. We continued our research into what kinds of things differentiated these two museums.

"Eclectic" was the word that truly seemed to describe the combined collections. One had started out as "San Francisco's attic," featuring birds' nests, thumbscrews, and prison doors. The other had benefited from a wealthy dowager's acquaintance with a famous dancer, who introduced her to Rodin. Recent acquisitions included a 6-ft. high slice of birthday cake. We felt a movie coming on!

Time

century
year

Location

in museum
in exhibition

region
country
city

artist's dates, location

Movement / School

Artist

artist's name or group name

Media

Method — **Materials**

Dimensions

Color

"museum tag"

these place the work into a larger, quantifiable framework of time, place, etc., allowing for connections.

Piece

"museum text"

these categories place the work into qualitative framework of recurring themes and objects

Themes

contextualized through time, location, etc.

Depictions

Places **Figures**

historical, literary, mythological, general

MAKING

Thumb screws, cream shoes ....

Our first foray into execution was a storyboard and sound track
for an opening movie, skippable of course, that would give
first-time visitors a taste of FAMSF from the very start of their
experience with the site. We even made a scratch track to match
a storyboard that featured kinetic type and glimpses of the
art. But we were soon distracted by the larger task at hand.

At this point we had to talk ourselves out of the notion that the
collection was so eccentric that any sense of the corpus would
be irrelevant. We came to understand that our task was
to enable visitors to gain a sense of the collection as a whole,
acknowledging that one could not necessarily extrapolate
universal art truths from this particular collection.

We recognized that a true scholar would come to our site as
one of many. That admission somehow allowed us to move
forward.

Script

thumbscrews
cream shoes
prison door
The Dore Vase
golden tea service, Faberge
Rubens
Gainsborough
El Greco
Monet
500 rugs
The Thinker by Rodin
Fine percelain
Titian
Persian miniatures
Gauguin
birds' eggs
Byzantine cross
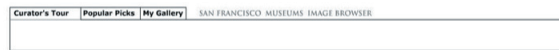Birthday cake by Claes Oldenburg
More.
Explore.

Experiencing Gridlock

In the course of thinking through how our welcome movie might resolve itself, we became intrigued by the idea of a culminating grid of artworks. That became the foundation for our first set of wireframes.

Feedback from the class was that the concept of a grid's becoming populated by various hatracks such as alphabetical had merit and also nicely foreshadowed an eventual thumbnail display. We felt we had the glimmer of the start of an idea.

			HOW										
										WHEN			
	WHO												
									WHAT				
			WHERE										

Making a Spectacle of Ourselves

For our second set of wireframes, we explored the idea of a constellation. The tool bar would be an icon to represent viewing, with our 5 questions as a constellation surrounding it, and the art would appear with a constellation of attributes around it.

We worked with the scenario of a photography enthusiast looking for Ansel Adams.

In this iteration we learned another lesson: that it's crucial to have a certain degree of finish and attention-to-detail even at this rough stage. As an example. the class was thrown off by the fact that the alphabetic grid was all As rather than the full alphabet.

We felt somewhat confident, however, that our 5 basic questions and some of the navigation we were testing held up.
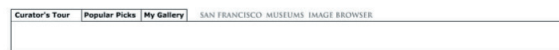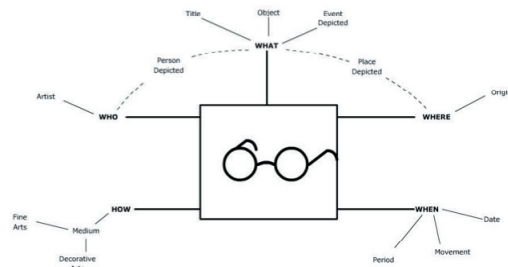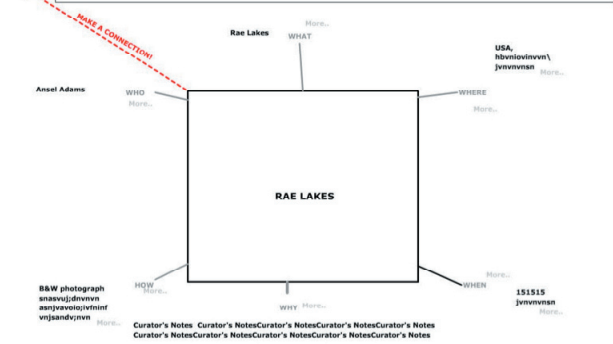
Building a Cityscape of Rectangles

Our next iteration had the first inkling of a "skin," and that made a real difference. We were inspired by a piece of scrap artwork to create a "cityscape" of data by stacking rectangles within a color palette to indicate weight within the collection. That posed a labelling issue, however, because some of the rectangles were too small to hold a label.

We tried labelling the rectangles via hairlines that led to the label. Feedback was that this visualization was not working; the order of the labelling seemed arbitrary to our viewers.

It was suggested that we try 2-D instead—essentially stripes versus rectangles—to provide enough real estate to label.

We also has further work to do on our palettes. Some of the darker tones read as negative space to the class.

Tightening our Scenario

Our professor constantly reinforced the utility of having a well-developed user scenario to drive our work. But it was only after a series of false starts that we truly understood what he meant.

By concocting Sven Ario for our scen-ario, and fully predicting his every move of the mouse, we were able to build a prototype snippet that demonstrated key features of our interface design.

Here is the scenario:

Our goal was to use an existing bank of images and data to create a front end that will stimulate inquiry and discovery, answer specific questions, and provide a platform to display museum art that enhances rather than distracts from its presentation.

We wanted to give the visitor the ability to have a macroview of the collection as well as be able to delve in to answer specific questions.
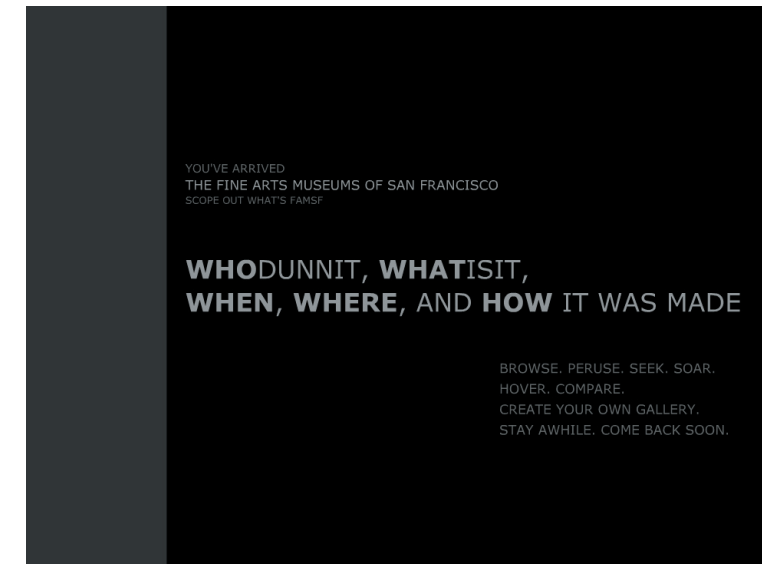
Upon landing on our welcome page, here are the elements one would encounter:

> *A welcome message that provokes the user experience and provides a hint at the interface design CLICK THROUGH TO*
>
> *The opportunity to take a Curator's Tour*
>
> *The opportunity to check out the most visited artifacts*
>
> *Foreshadowing a personal gallery feature*

YOU'VE ARRIVED
THE FINE ARTS MUSEUMS OF SAN FRANCISCO
SCOPE OUT WHAT'S FAMSF

WHODUNNIT, **WHAT**ISIT,
WHEN, **WHERE**, AND **HOW** IT WAS MADE

BROWSE. PERUSE. SEEK. SOAR.
HOVER. COMPARE.
CREATE YOUR OWN GALLERY.
STAY AWHILE. COME BACK SOON.

A "quick search" for visitors who have a very specific defined query

The tool bar invites the user to explore artifacts via 5 key chunks, which comprise the 10 meta-tagged data sets in a simple, intuitive way:

WHO – the artist (Picasso) or subject (Mona Lisa)
WHEN – the date
WHERE – the origin of the artifact or place depicted (Waterloo)
WHAT – the title; theme or subject depicted; or the "thing" (tea service, goblet)

HOW – the medium (etching; gold)

By mousing over the 5 key chunks, their explanations are revealed.

The nice thing about these chunks is that, arranged by various hatracks, they include from 9 to a high of 26 (alphabetic) or 27 items.

Now meet our user: "Sven Ario." He's the curator of a museum far from San Francisco. His purpose in perusing the site is:

to gain an overview of the FAMSF holdings

to glean inspiration for potential exhibits, which could include FAMSF holdings

He is both a browser requiring the macro view and a searcher requiring the capability of burrowing into the information for a microview.

His first query is to parse the collection by time. He mouses over WHEN/DATE and the screen configures into a palette of stripes representing the weight of each time period within the collection. The absolute number of the pieces is also shown.
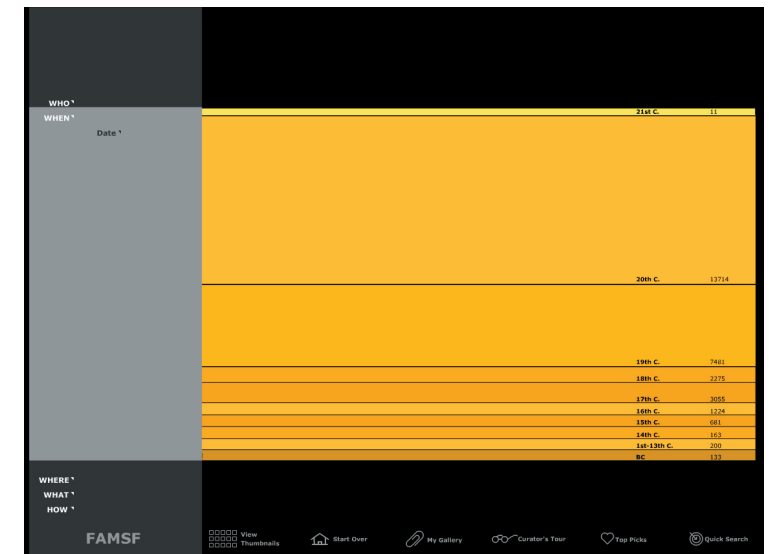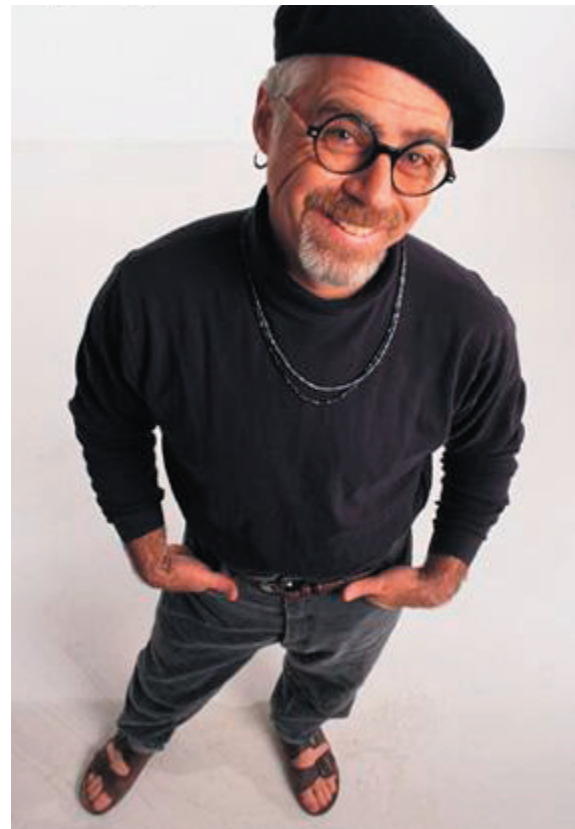
Sven notes that the collection is heavily 19th/20th century.

Next he looks to see what medium types are featured within the collection. He clicks on HOW/MEDIUM and the screen reconfigures to a new color palette of stripes. He notes the prevalence of etchings.

Next Sven checks what the make-up of the collection is according to artifact origin. He clicks on WHERE. The screen morphs into a new palette indicating a preponderance of European and North American art.

With this overview in mind, Sven decides to delve into the North American holdings, by clicking on that stripe. North America becomes his new "universe" and he chooses to parse it by time period. He activates the WHEN feature and now sees how the galleries' North American holdings are distributed across time. Note the breadcrumb trail of his searches, which is also reprised at the top.

He chooses the 19th century to explore, by clicking on it. A new universe appears, which he now chooses to parse by medium (HOW). With these 3 criteria, he clicks the button to

VIEW THUMBNAILS.

At this point, 104 thumbnails fill the screen, representing the universe of 19th century photographs from North America. As he mouses across them, they magnify. One catches his eye, and he clicks on it to learn more.

The photograph by EJW fills the screen, along with its attributes. The curator's notes are included. While not searchable, they provide an added insight into the WHY of the piece. Sven notes that the tool bar has been populated with the data specific to the photograph he has chosen. This provides an easy
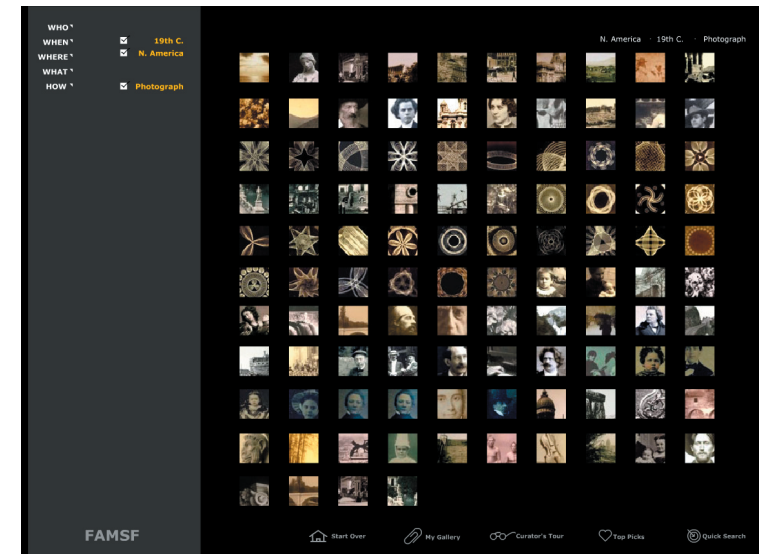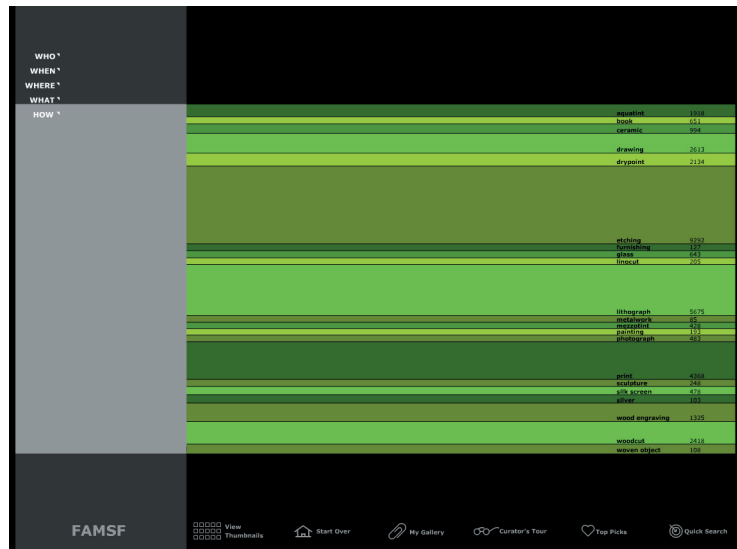
opportunity to "see more" across any of the attributes now highlighted, or to "turn off" attributes to narrow a new search. (He also always has the opportunity to wipe out all criteria and begin anew by choosing HOME.)

It also provides another "bread crumb" trail for Sven to see what his search criteria have been.

The photograph is an oddity in that it features a strange double-helix shape rather than an image of a person or thing.

Sven is intrigued by the attribute under WHAT—"geometric shapes." By pulling out the data on the tool bar as well as having it as part of the piece's attribute set, it entices the visitor to explore new connections.

A lightbulb goes off in Sven's head! What if he explored the idea of creating an exhibit built around geometric shapes—in photography, sculpture, painting, and so forth?!

He saves the EJW photograph in "My Gallery" and decides to embark on the exploration.

By turning off all the criteria except "geometric shapes" he is able to retrieve 300-odd images across all medium types. He chooses a few for his gallery, saves them, and exits the site pleased that he is off to a great start on a potential exhibit concept.

He will explore other museum sites and eventually return to ours to delve deeper into the concept.
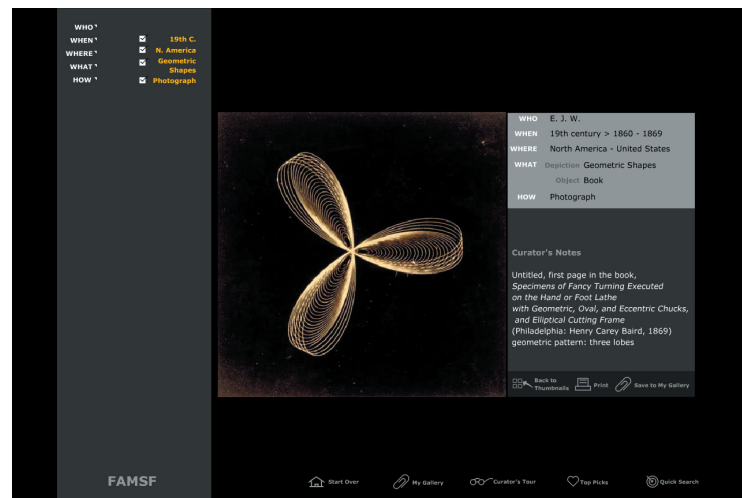
DELIVERING

D-Day: Delivery Time!

Attached is the final form that we presented to our class and guests. We had good questions from the audience about who owned the art copyright and whether students could copy at will; and about why we broke the convention of "who what when" in the order of our tool bar.

Laura said, "I am so proud of us" and indeed all three of us were proud that we had come this far, and yet we felt that there was so much more to be done.

Reflecting on the process

We had gone down many paths—some primrose. We regretted spending so much time in the thinking phase that the exploration and evolution of the actual piece felt rushed and rough.

Some things we might continue to explore:

Showing the work in some kind of context. It would be wonderful to understand a piece's size in its milieu—how big is a 22-foot circumference vase? What if I were standing next to it?

Indicating what's currently on display at the museum

Having essays available on related art topics