Location, Path & Attribute Breadcrumbs

Keith Instone, Information Architect, ibm.com

keith@instone.org   `http://keith.instone.org/breadcrumbs/`

ABSTRACT

Three type of breadcrumbs on the web are defined, examples are given of each, and a set of research questions involving breadcrumbs are presented. Location breadcrumbs, the most common, show the single location of a page within a site. Path breadcrumbs, which are becoming more common with database-driven sites, show the particular path the user has taken within the site to the page. Attribute breadcrumbs are meta-information within the site that are represented in a breadcrumb-like fashion.

INTRODUCTION

The purpose of this poster is to define three types of breadcrumbs in order to enable information architects to discuss their design implications more intelligently. Breadcrumbs have evolved to an important navigational aspect of the web, so we need more precise concepts and terminology in order to effectively use breadcrumbs in different situations.

This poster does not advocate the use of breadcrumbs for all sites, but instead hopes to provide designers with the means to use them appropriately. More important, this poster presents a breadcrumb research agenda, a set of questions that we need answered in order to fully understand breadcrumbs' roles within the web sites and the web as a whole.

Breadcrumbs, in general, are a list of *elements* (links) separated by some character or graphic. The *separator* is most often > but : and | are common characters as well. The most common graphic is an arrow pointing to the right.

The design intent of breadcrumbs is usually stated as two-fold: to convey information to the user (about the site structure or the path they have taken), and to also give users a way to select links from the breadcrumb (in order to go "up" in the site hierarchy or to re-trace their steps).

Two generalized examples using > as the separator:

<u>First Element</u> > <u>Second Element</u> > <u>Third Element</u> >
Last Element

The First Element usually represents the site home page. Depending on the type of breadcrumb, the second and third elements can be subcategories or selections the user has made to get to the current page. The Last Element usually represents the name of the current page; sometimes this is (erroneously) a link to the current page.

<u>First Element</u> > <u>Second Element</u> > <u>Third Element</u> >

Some breadcrumbs leave off the Last Element and instead put the page title immediately below the breadcrumb.

Breadcrumbs usually go from left to right on the same line, but some go right-to-left and sometimes the elements are arranged vertically. Breadcrumbs are usually placed near the top of the page, with the most common placement being at the top of the "white space", below the top global navigation and to the right of the local navigation on the left.

LOCATION BREADCRUMBS

Location breadcrumbs convey the position of the page within the site hierarchy. This is the most common type of breadcrumb on the web today because with static pages, this is the only reasonable implementation. Users can often take several different routes to a page, but the breadcrumb will tell them "where they are."

PATH BREADCRUMBS

Path breadcrumbs represent the original metaphor of the term and show the path the user has taken within the site to get to the current page. The same content from the site can be presented with different breadcrumbs because users can take different routes. With database-driven sites where the page can be dynamic and based on user-state information, path breadcrumbs are becoming more common.

ATTRIBUTE BREADCRUMBS

Instead of having the breadcrumb represent the location of or path to the current page, some sites use breadcrumb-like navigational features as meta-information to describe components of the site. The most common examples are e-commerce sites that use breadcrumbs as a type of extended keyword to convey product meta-information, such as subject, price, category, style, and brand.

RESEARCH AGENDA

These are just some of the questions about breadcrumbs that could drive research to help us understand them better.

- Most users describe breadcrumbs as a way to go back to where they have been. Does this path breadcrumb mental model cause problems with the majority of location breadcrumbs that exists on the web today?
- What syntax should be used for breadcrumbs? Where should they be placed on the page?
- When do users not "get" breadcrumbs; are they something that must be learned from Yahoo! first?
- When should a site use location breadcrumbs vs. path? And what are attribute breadcrumbs good for?
- Should only the browser be in charge of the user's path?

Location, Path & Attribute Breadcrumbs

Poster

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Keith Instone

keith@instone.org

http://keith.instone.org/breadcrumbs/

About Breadcrumbs in General

- Use these definitions and examples to talk more intelligently about breadcrumbs

- Element (links) and Separators (characters)

- <u>First Element</u> > <u>Second Element</u> > <u>Third Element</u> > Last Element

- Last element (optional): Unlinked, title of the page

About the 3 Types of Breadcrumbs

The term "breadcrumb" is used for several different concepts – causing confusion during design discussions

- Location Breadcrumb – "You are here", static
- Path Breadcrumb – how you got here, dynamic
- Attribute Breadcrumb – meta-information

(When you go home, start using these terms!)

Attendee Comment

- What do clients think this means? One of our clients thinks breadcrumbs are the footer links.
- Reply: Give them these definitions and tell them that if they do not start using them, I will come over there and give them 40 lashes with a wet noodle.

About the Research Agenda

- There still are a lot of questions we need answers to re: breadcrumbs
- These definitions do not provide any answers, only more questions
- Ask these question before using breadcrumbs on your site
- If you are a student and want to do your thesis on breadcrumbs, contact me!

Definition of Location Breadcrumbs

- The single location of this page within the site's hierarchy
- Hard coded – best choice for static sites
- Tells users "you are here" - not how they got here
- Gives them a way to go "up" to higher sections of the site

Attendee Comment

- We used to call location breadcrumbs "depth maps" to distinguish them from real (path) breadcrumbs that are more computationally expensive
- Reply: What other terms have people used for the various types of breadcrumbs?

Yahoo Directory: Everyone's first exposure to breadcrumbs?

Yahoo Directory: @ means Transport

Home > Computers and Internet > Internet >

World Wide Web

- ActiveX@
- Beginner's Guides *(37)*
- Books@
- Browsers@
- Caching *(12)*
- Chat *(167)*
- Conferences *(24)*
- Cookies *(15)*
- Databases and Searching *(12)*
- Evaluation *(8)*
- Gateways *(23)*
- History *(9)*
- HTML@
- HTTP *(53)*
- Imagemaps *(16)*
- Java@
- JavaScript@

Home > Business and Economy > Shopping and Services > Books > Booksellers > Computers > Internet > Titles >

World Wide Web

Yahoo! uses the @ for a **transport** link (does not go deeper in the site hierarchy and leads to a completely new breadcrumb)

Location Examples

useit.com → Papers and Essays → Heuristic Evaluation → List of Heuristics

Ten Usability Heuristics

Visibility of system status
The system should always keep users informed about what is going on, through appro

Match between system and the real world
The system should speak the users' language, with words, phrases and concepts famil

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Waffle Recipes   New! Submit a Site

You are here: Lifestyle > Hobbies > Cooking > Recipes > Breads & Grains > Breakfast Breads > Waffles

Waffle Boy's Domain of the Waffle
Ultimate resource for waffle lovers features a collection of recipes and a historical overview.

Waffle Page
Waffle aficionado gives the history of his favorite breakfast food along with a selection of recipes. Check out the humorous trivia section.

Location Examples: Left-Right, Top-Down, Right-Left

Attendee Comment (Matt from the BBC)

- The old BBC vertical bradcrumbs were NOT useful to people
  - Inconsistently created and named because they were manually entered
  - Located in a blindspot on the page
- Biggest result from testing was that horizontal breadcrumbs were "something all websites have, but I do not really pay attention to".

Research Agenda: What syntax / layouts are "standard"?

useit.com → Alertbox → June 2001 PDF

Top left, arrows

Jakob Nielsen's Alertbox, June 10, 2001:

Avoid PDF for On-Sc

NN/g   NN/g   useit.com   jnd.org   AskTog
Nielsen **Norman** Group
Strategies to enhance the user experience
Home   People   Services   Publications   Events   About NN/g
NN/g Home > Publications > Locator Usability Report

Right side, >, under Global navigation

NN/g Home → AskTog → Basics → Maximizing Human Performance

Arrows

Don Norman Home Page | Publications | The Perils of Home Theater

Vertical bars

Course Catalog: E-Commerce: Internet User Experience Suite

Colons

Attendee Comment

- Do you include the page you are on in the breadcrumb (unlinked, of course)?
- Reply: It depends, I have seen it work with and without the page title as the last element of the breadcrumb.
- It depends on the visual layout – where the actual page title falls wrt the breadcrumb. Krug says NOT to use the last element as a substitute for the page title – I tend to agree.

Research Agenda: Location (2) – When do users not get breadcrumbs?

Home | Birthday | Family Birthday | For Wife

Attendee Comment

- Our user test findings: some did not get the idea of hierarchy from the breadcrumb, but some did. All understood that the breadcrumb elements were more related links that they could click on.

- Reply: Good, send me more results from other user testing, please!

Definition of Path Breadcrumbs

- Like the Hansel-and-Gretel metaphor – how you got to the current page
- Same result via different paths = different breadcrumbs
- Possible with dynamic sites that retain some aspect of the user's state

Epicurious (1): Faceted browsing

Main Ingredient

Beans, Beef, Berries, Cheese, Chocolate, Citrus, Dairy, Eggs, Fish, Fruits, Garlic, Ginger, Grains, Greens, Herbs, Lamb, Mushrooms, Mustard, Nuts, Olives, Onions, Pasta, Peppers, Pork, Potatoes, Poultry, Rice, Shellfish, Tomatoes, Vegetables

Cuisine

African, American, Asian, Caribbean, Eastern European, French, Greek, Indian, Italian, Jewish, Mediterranean, Mexican, Middle Eastern, Scandinavian, Spanish

Special Considerations: Kid-Friendly, Low Fat, Meatless

Preparation Method

Advance, Bake, Broil, Fry, Grill, Marinade, Microwave, No Cook, Poach, Quick, Roast, Saute, Slow Cook, Steam, Stir Fry

Season/Occasion

Christmas, Easter, Fall, Fourth of July, Hanukkah, New Years, Picnics, Spring, Summer, Superbowl, Thanksgiving, Valentine's Day Winter

Course/Dish

Appetizers, Bread, Breakfast, Brunch, Condiments, Cookies, Desserts, Hors d'Oeuvres, Main Dish, Salads, Sandwiches, Sauces, Side Dish, Snacks, Soup, Vegetables

- Main ingredient = Mushrooms
- Cuisine = Asian
- Course/dish = Soup

Epicurious (2): 6 breadcrumbs for the same end result

Browse > Mushrooms > Asian > Soup

1 - 3 of 3

CHINESE-STYLE SPINACH AND MUSHROOM SOUP
Bon Appétit   October 1997

HOT AND SOUR SOUP WITH GINGER
Bon Appétit   April 1994

SHIITAKE BOK CHOY SOUP WITH NOODLES
Gourmet   February 1999

Browse > Soup > Asian > Mushrooms

1 - 3 of 3

CHINESE-STYLE SPINACH AND MUSHROOM SOUP
Bon Appétit   October 1997

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Browse > Soup > Mushrooms > Asian

1 - 3 of 3

CHINESE-STYLE SPINACH AND MUSHROOM SOUP
Bon Appétit   October 1997

HOT AND SOUR SOUP WITH GINGER
Bon Appétit   April 1994
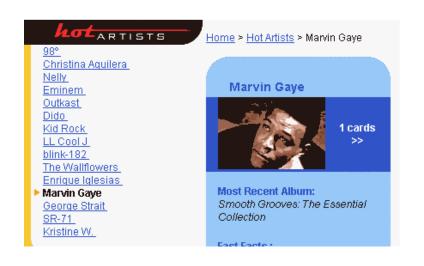
SHIITAKE BOK CHOY SOUP WITH NOODLES
Gourmet   February 1999

Browse > Asian > Soup > Mushrooms

1 - 3 of 3

CHINESE-STYLE SPINACH AND MUSHROOM SOUP
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Attendee Comment (Rashmi)

- Epicurious breadcrumbs were not confusing in a usability study we did as part of Flamenco
- See
  http://bailando.sims.berkeley.edu/flamenco.html

Path Examples (1): 3 ways to Marvin Gaye

Path Examples (2): Search vs. Browse Paths

- ## Who is responsible for the user's path: the browser or the site?

- When are path vs. location breadcrumbs appropriate?
- Does it depend on the information architecture of the site (e.g., hierarchy vs. database), user's goals, type of user, type of site, …?

Attendee Comment

- When do you STOP adding elements to the path breadcrumb? What if a user settled in for an hour's browsing though the site – the path breadcrumb could take up the entire page.

- Reply: Yep, so it is better to let the browser handle the WHOLE path – your path breadcrumb might only handle the path within a smaller part of the site.

Attendee Comments

- What if a page could live in more than one place and you can't choose a "buddha place" – all are equally valid. Example, Service A lives in 3 places and you do not want to pick 1 as the default location:
- Consulting > Services > Implementation > Service A
- Consulting > Services > Optimization > Service A
- Consulting > Services > Upgrade > Service A
- Should you cut off the breadcrumb at a higher level, like "Consulting > Services"?
- My answer….

Answer to Previous Question

- In this case, do not use LOCATION breadcrumbs – use Path or Attribute instead.
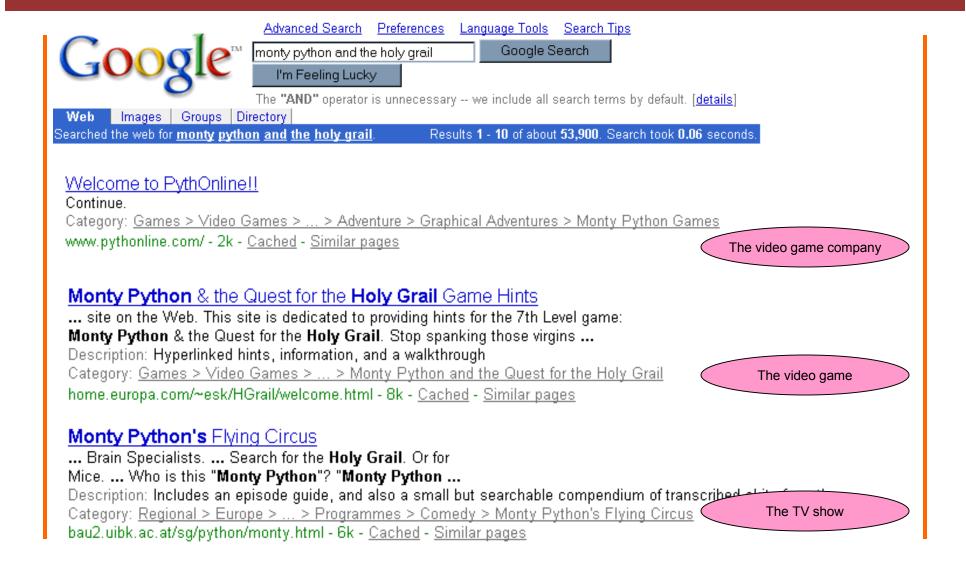
- This is exactly why we need more detailed definitions for breadcrumbs.

- And, no, do not cut off your breadcrumbs at a higher level – it makes them useless.

Definition of Attribute Breadcrumbs

- Breadcrumb does not represent the whole page, but attributes of it
- Meta-information presented in a breadcrumb-like manner (instead of as a "flat" keyword)
- Tend to be at the bottom or on the side of the page, or near the object they are describing
- Common in e-commerce sites where each product has a large set of attributes
- Could be either path or location breadcrumbs

Google (1): Search results tell you where each link exists within the ODP

Google (2)

CINEMA
CINEMA. "**Monty Python's Holy Grail**". This is english
crazy movie. Do you understand these "BAKA" scenes? **...**
Description: Lego-modeled version of stills from "**Monty Python** and the **Holy Grail**".
Category: <u>Arts</u> > <u>Movies</u> > <u>Titles</u> > <u>M</u> > <u>Monty Python and the Holy Grail</u>
www.geocities.co.jp/Hollywood/9060/holye.html - 5k - <u>Cached</u> - <u>Similar pages</u>

The movie

Monty Python and the **Holy Grail** CCG homepage
... What if my local store does not stock **Monty Python** and the **Holy Grail**??? **...** Check out
what people are saying about **Monty Python** & the **Holy Grail** CCG Endorsements. **...**
Description: King Arthur, Sir Lancelot the Brave, and Sir Robin, are featured along with the rest of the outrageous...
Category: <u>Games</u> > <u>Trading Cards</u> > <u>Monty Python and the Holy Grail</u>
members.aol.com/relkin/mphgmain.htm - 6k - <u>Cached</u> - <u>Similar pages</u>

Trading cards
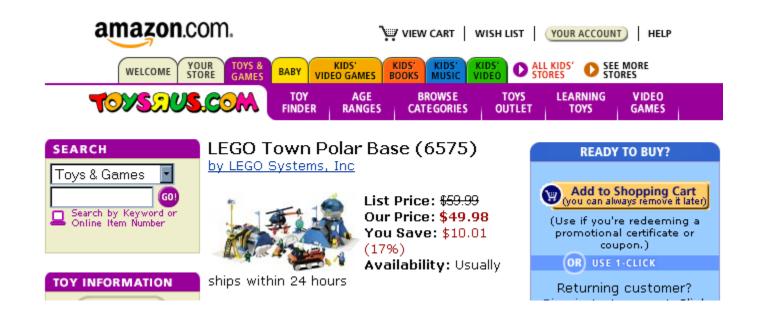
MontyPython.net The Ultimate **Monty Python** Site
... sale by the time you read this. The long-awaited special edition of **Monty Python**
and the **Holy Grail** is widely available both online and in many video and music **...**
Description: Massive script and sound site for all things **Python**.
Category: <u>Regional</u> > <u>Europe</u> > <u>...</u> > <u>Performing Arts</u> > <u>Comedy</u> > <u>Monty Python</u>
www.montypython.net/ - 18k - <u>Cached</u> - <u>Similar pages</u>

The (British) comedy troupe

<u>Regional</u> > <u>Europe</u> > <u>United Kingdom</u> > <u>Arts and Entertainment</u> > <u>Performing Arts</u> > <u>Comedy</u> > Monty Python

Amazon (1): 5 attribute breadcrumbs for a toy

Amazon (2): How useful are these sets of attribute breadcrumbs from Amazon?

Browse for Toys
- Categories > Activities & Learning > Pretend Play & Dress-Up > Fashion & Beauty > Body Arts
- Favorite Characters > Rocky & Bullwinkle

Browse for Baby items in:
- Categories > Strollers > Full-Size Strollers
- Brands > Chicco

Browse for music in:
- Styles > Children's Music > General
- Styles > Rock > Progressive > Progressive Rock
- Music Outlet > Children's Music > CDs $7 - $10
- Music Outlet > Rock > Progressive Rock > CDs $7 - $10
- Music Outlet > Children's Music > All Bargain Titles
- Music Outlet > Rock > Progressive Rock > All Bargain Titles

Attributes

• Style = General Children's Music, Progressive Rock

• Price = Bargain, $7-10

Browse for books in:
- Subjects > Religion & Spirituality > Christianity > Reference > Criticism & Interpretation > New Testament
- Christian Living > General
- Bibles > Study Guides, History & Reference > General

- ## When are simple keywords better than attribute breadcrumbs?

Look for similar books by subject:

Browse for books in:
- Subjects > Computers & Internet > Web Development > Internet Commerce > Web Site Design
- Subjects > Computers & Internet > Networking > Internet, Groupware, & Telecommunications > Internet Publishing
- Subjects > Computers & Internet > Web Development > HTML, Graphics, & Design > Interface Design
- Subjects > Computers & Internet > General

Search for books by subject:
- ☐ Web sites
- ☐ Design
- ☐ Web site development
- ☐ Desktop Publishing
- ☐ Computer Networks
- ☐ Computer Bks - Internet
- ☐ Computers
- ☐ Internet - Web Site Design
- ☐ Internet - General

Research Agenda: Link for each element?

- Should each element be a link in attribute breadcrumbs, or should it all be one link?

- Do users really need to be able to jump to *any* part of the path?

- Might be easy to do attribute breadcrumbs in Zope
- Reply: Thanks – are there any tools that support all 3 types of breadcrumbs "out of the box"?