Wikispam, Wikispam, Wikispam PmWiki

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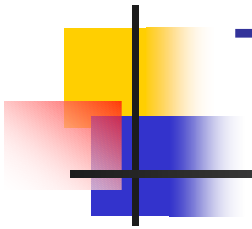
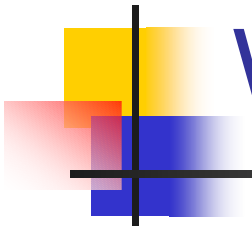
Google Search | I'm Feeling Oppressed



Talk Outline

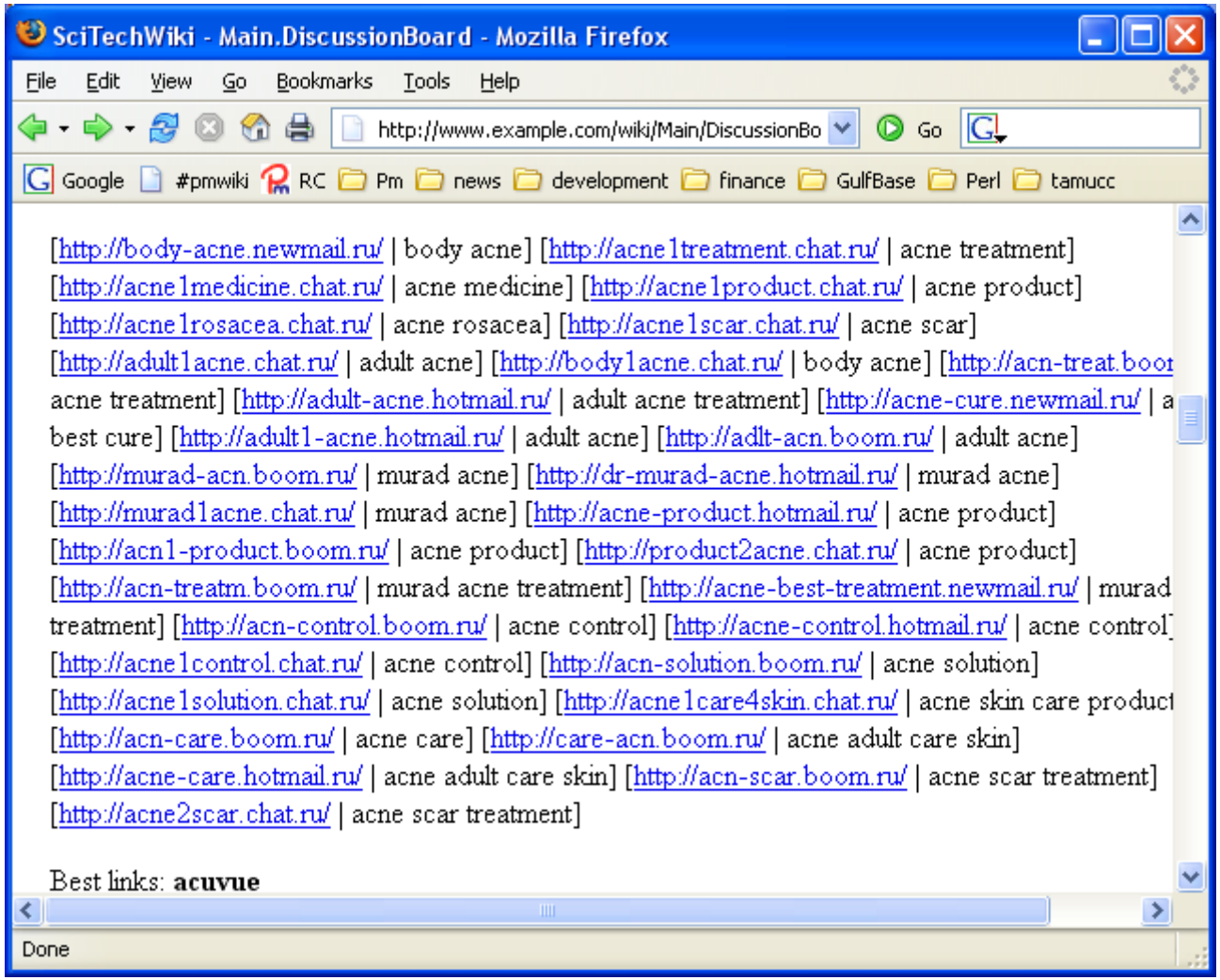
- What is wikispam?
- Know thy opponent(s)
- Countermeasures
- PmWiki security options



What is Wikispam?

- Wikispam, or "comment spam", refers to unwanted external links in publicly writable web pages
  - Wikis
  - Blogs
  - Other

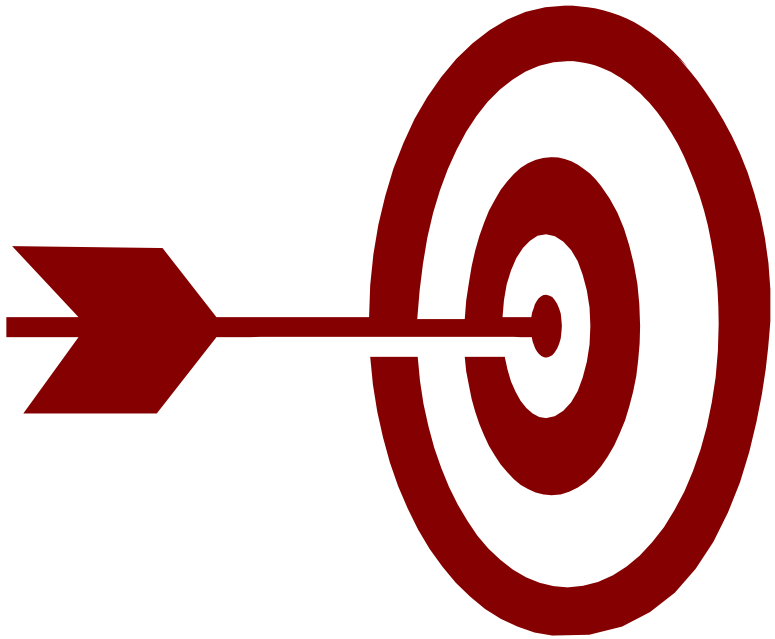
What is Wikispam?

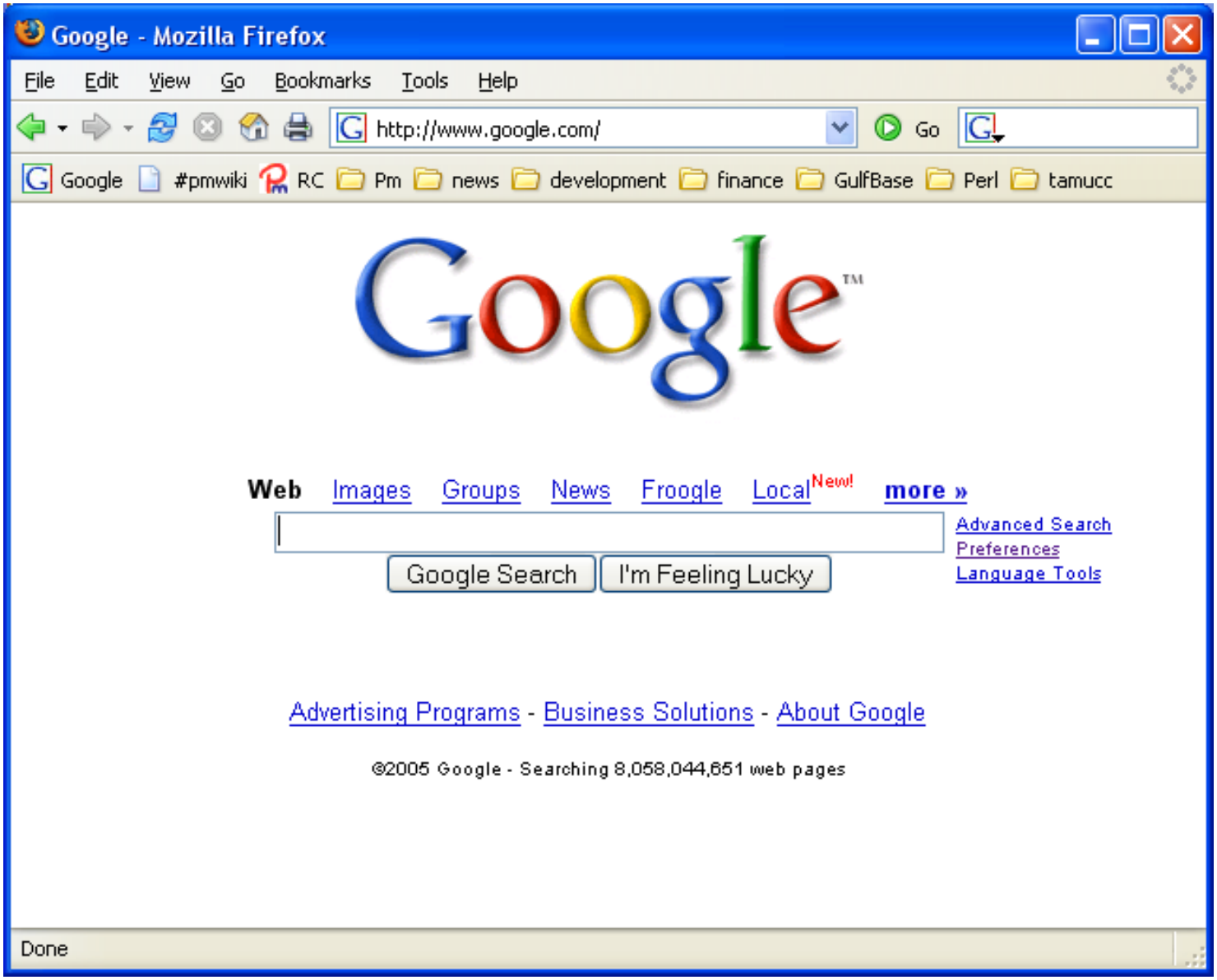


Know thy opponent(s) - 1

- Why do people spam?
  - Vandalism/malice
  - Money

Wikispam's primary target

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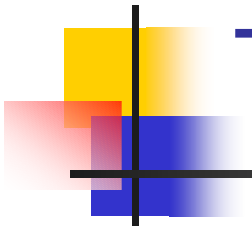


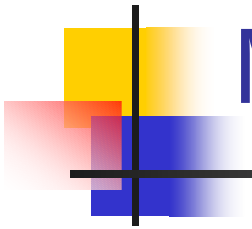
The Googlephant in the room

- Companies and organizations want high Google rankings
- Google listings are ordered according to "PageRank"
  - Each link from page A to page B is counted as a "vote for B"
  - In general, the more pages that vote for B, the higher B's rank
- So, for a high page rank, get lots of pages to link to your site, then Google will list you first

There's names for this...

GoogleBombs

"Search Engine Optimization"

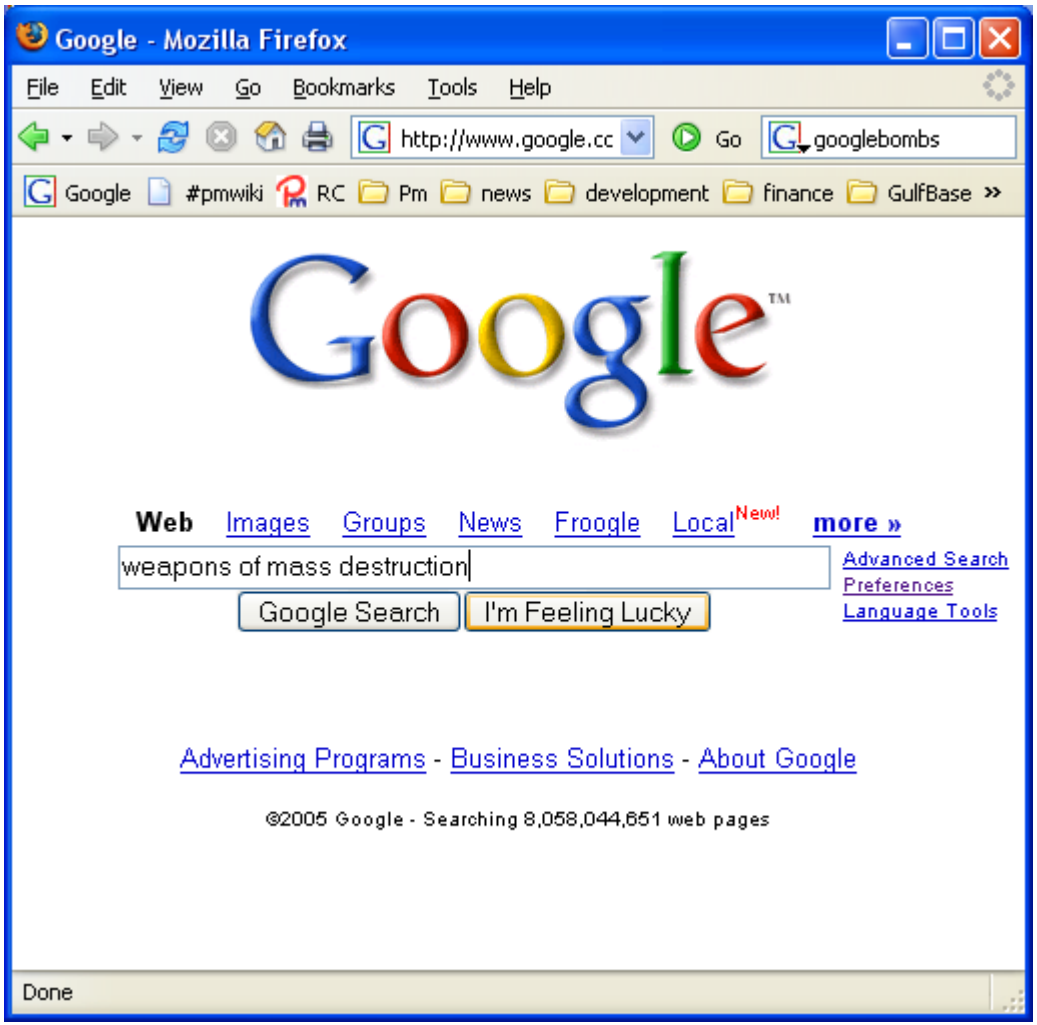


Make$Money$Fast

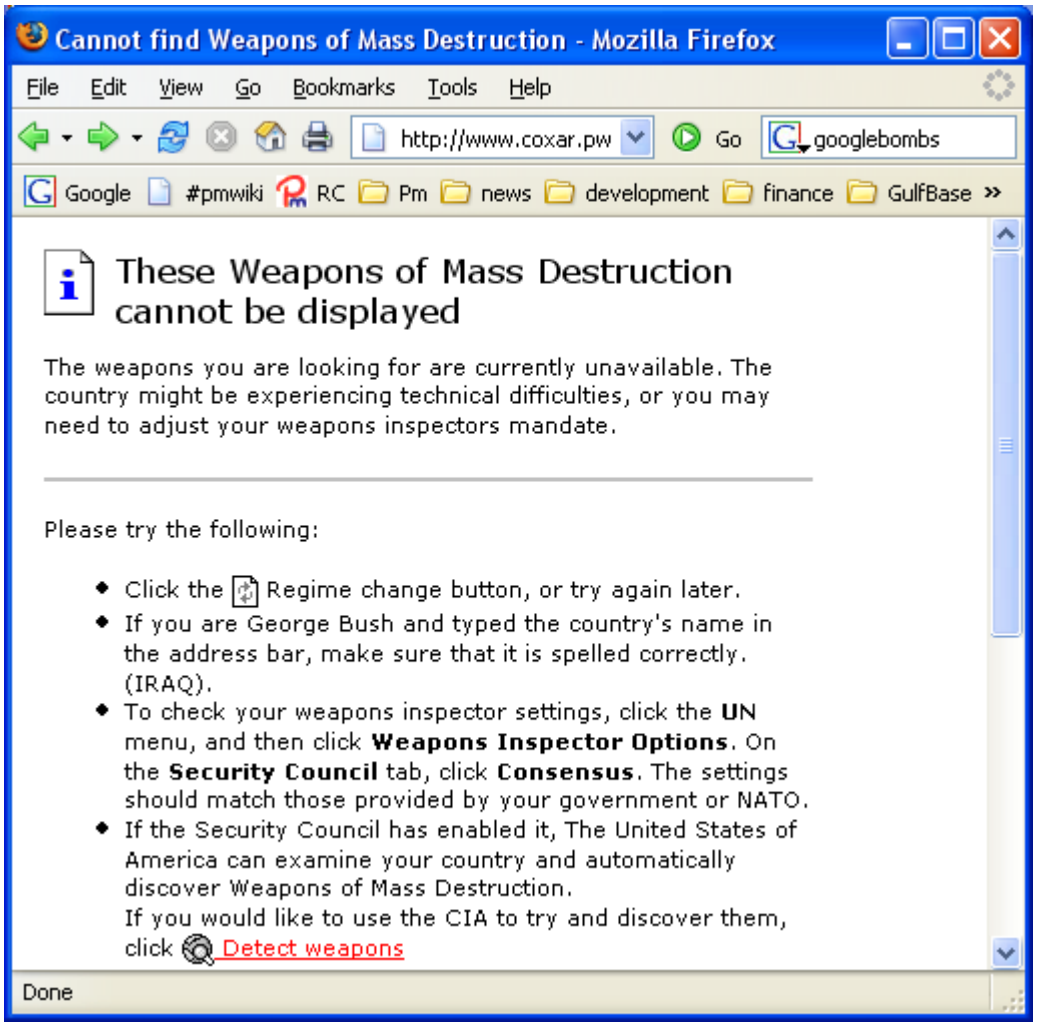
So, what's the easiest way to generate lots of links to a page...?

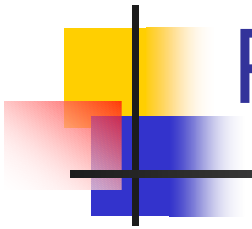
Add them to blogs, wikis, anywhere that has unsecured web content!

Links of Mass Deception



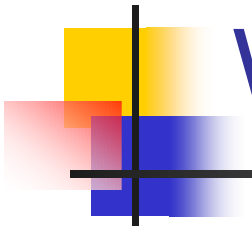
Links of Mass Deception





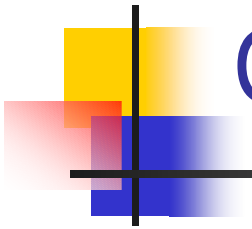
Finding spam

- Wikispammers tend to flood pages with lots of links
- They may attempt to hide links in unexpected places (periods and punctuation)
- Writing a bot to generate such links is easy



What's a wiki to do?

- Countermeasures
  - Get rid of that $!#%* wiki!
  - Open but vigilant (a.k.a. "live with it")
  - Blocklists
  - Spam filters
  - Captchas
  - Access controls
  - URL approvals
  - Learning to love Google all over again



Countermeasure 1 - Elimination

aka "Whose stupid idea was this, anyway?"

- Pros: No more wikispam
- Cons: No more wiki

Countermeasure 2 - Openness

aka "Maybe we can outrun the bots!"

- Rely on openness of wiki to enable lots of people to correct spam when its found
- Pro: wiki makes it simple to undo spam when it's found
- Con: people get tired of cleaning up other's messes
- Wikipedia takes this approach

Countermeasure 3 - Blocklists

aka "They don't work for email,
might as well try them here!"

- Keep track of spammers IP address, then block posts from that IP address
- Er, IP address *range*, that is
- Pro: simple to implement
- Cons:
  - Maintaining lists of IPs to block
  - Sometimes block legitimate IPs
  - Spammers know how to jump IPs

Countermeasure 4 - Spamfilters

aka "What doesn't work for email
is good enough for us!"

- Filter based on keywords and page analysis
- Bayesian networks
- Pros: could be effective
- Cons: never is effective
  - Too much effort to train filters
  - Hard to classify spam/non-spam
  - Spammers know how to adapt to filters

Countermeasure 5 - Captchas

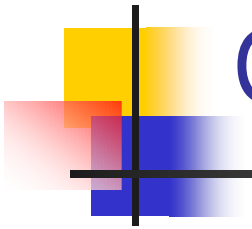
"The bot can't hurt what it can't see!"

- Captcha - telling computers and humans apart automatically

- Theory: image (and character) recognition is hard for computers, easy for humans
- Thus, a simple test can distinguish the two and filter bots
- Used by many commercial sites

Captchas may not work

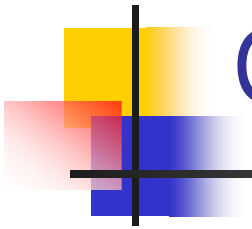
- Inconvenient for editing - new captcha required for each post
- Bots can solve captchas
  - Captcha is much simpler than OCR
  - Many captcha systems have been broken
- Spammers can enlist humans to solve captchas on their behalf
- Some humans cannot solve them
- Reduces web accessibility



Countermeasure 6 - access ctrls

When "open" is just too much of a good thing.

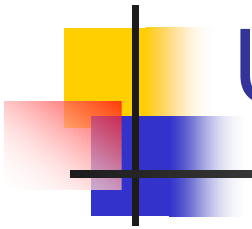
- Add passwords or other access controls to wiki pages
- Pros: Well known, works well
- Cons:
  - Increased administrative overhead
  - Loses the "open nature" of the wiki
  - Annoying



Countermeasure 7 - url approvals

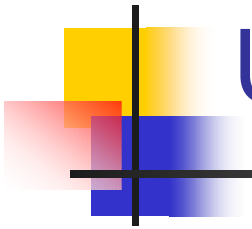
aka "Getting to the source of the problem"

- Block spammers ability to create links
- Known domains and urls are "approved"
- Any urls not in the approved list are not converted to links
- Provide an easy mechanism to approve urls



Url approvals

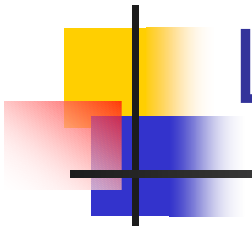
- Pros:
  - denies spammers reward for effort
  - allows open editing
- Cons:
  - doesn't prevent spam -- still has to be cleaned up
  - maintenance of "approved urls" list



Url approvals + blocking

"Prevention is the best defense."

- Wikispammers tend to post lots of unapproved links
- Authors generally have only a few
- Solution: Block posts that have more than a given number of unapproved external links
- Pros: Prevents spam from appearing
- Cons: May temporarily inconvenience authors wanting to post lots of links
- Since implementing on pmwiki.org in Dec 2004, spam hasn't been a problem



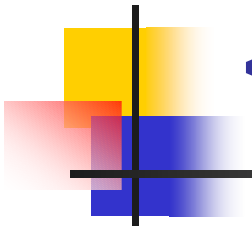
Learning to love Google again

- Google and other search engine companies recognized that they were a big part of the problem
- Decided to become part of the solution
- Sites can designate links that should not count for search-engine ranking with

<a href='...' rel='nofollow'>

<a href='...' rel='nofollow'>

- Despite the term 'nofollow', only means that search engines do not count the link as a vote (the links can still be followed)
- Used only on links to external sites where the validity of the link is unknown
- Pros: cuts benefit of spamming off at source
- Cons:
  - may take some time for spammers to notice (or care)
  - takes time for sites to upgrade



<a href='...' rel='nofollow'>

- PmWiki and other engines have quickly adopted this convention
- PmWiki allows rel='nofollow' only on unapproved links

More about PmWiki security