A Summary on the Internet Archive

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Introduction

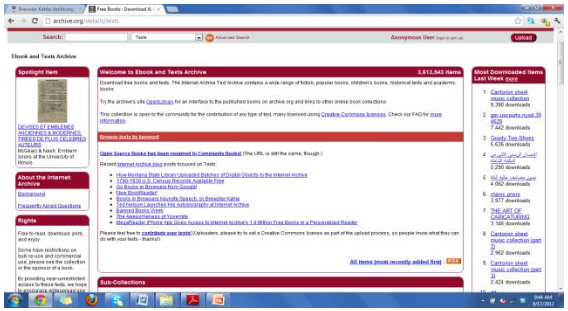
- The Internet Archive (IA) contains a collection of historical websites of the world.
- Users can access the archived websites through the Wayback Machine.
- http://www.archive.org
- Founded by Brewster Kahle and Bruce Gilliat in 1996.

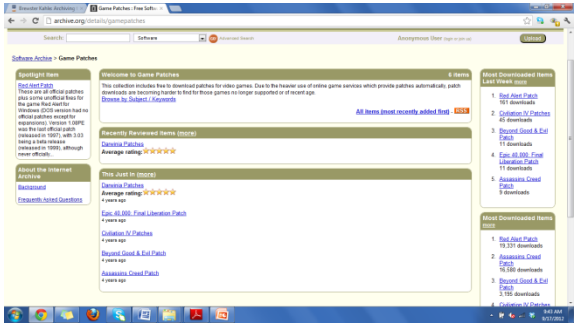
Motivation behind IA

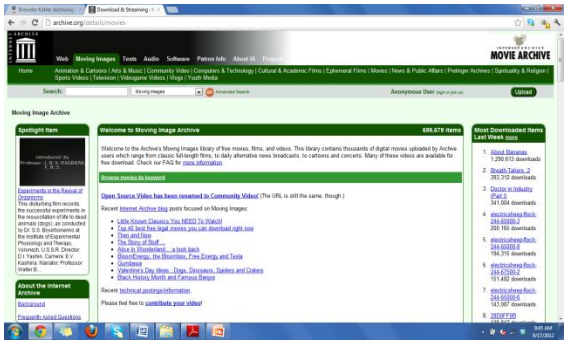
- **Preservation of Digital Information**
- The average of a document on the internet is 75 days [Kahle 96], after that it is lost. “404 Document not found”
- Digital information is easier to store and search in.
- How authentic is a document found on the internet?
- Where to go from the current document?
- **A Digital Library**

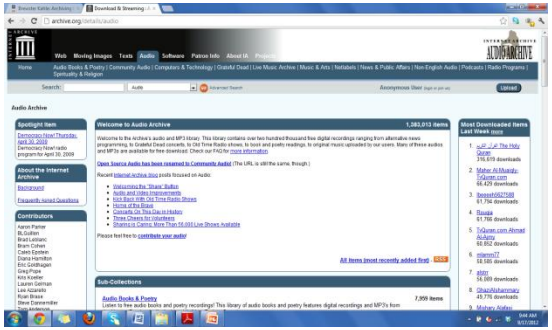
What is currently archived

- Texts
- Audios
- Videos
- Software









Founders and Contributors

- People
  - Brewster Kahle
  - Bruce Gilliat
  - Rick Prelinger
- Institutions
  - Alexa Internet
    - Gathers and analyses data on web content and web usage
    - Uses it's crawler to gather data on web content
    - Uses Alexa Toolbar for gathering data on web usage
    - Donates copies of web crawls to IA

Technology

- Capture Technology
  - The IA has developed tools for capturing web content
  - Crawler requirements:
    - Obeys the instructions given in a site's robots.txt
    - Can run on multiple machines
    - Aggregates the crawl data into large files for easier management
  - Heritrix : A Java-based open source Web Crawler

Technology

- How the crawler works
  - Finds documents (files) based on seed URLs and downloads them to the Archive's server
  - Looks for reference links and adds them to the list of files to be captured.
  - Relative paths are made absolute before being added to the list
  - The process is repeated for reference links
  - The crawler makes sure that the same page is not retrieved again.
  - Files that link frequently with other files are captured more frequently than files that rarely link to other files.

Technology

- What cannot be captured
  - Databases
  - Password protected files
  - Links found in JavaScript, Flash. May only capture homepage
  - Information restricted by the publisher
  - Successive changes made between crawls.
- IA gives the user a feel of what a page looked like at a given time but not the entire online experience.

Technology

- Storage and Preservation
  - Archive File Format (ARC, .arc extension)
  - Self identifying: No separate index required, easy integration into larger files
  - File Header: URL, size, content type, date and time of retrieval, Name of the Organization that retrieved it
  - Storage:
    - Tape used for the first 3 years
    - Petabox: Stores 1 Petabyte of data
  - Preservation:
    - Mirror sites in Alexandria (Egypt) and Amsterdam (Netherlands)

Technology

- The Wayback Machine
  - http://www.archive.org/web/web.php
  - Introduced in October 2001, allows the user to find an instance of a web page.
  - User enters URL and is taken to a results page with dates when the capture was made.
  - The user can click on the date to see the version of the page

Technology

- The Wayback Machine contd..
  - The user can browse through domain and time.
  - The Wayback machine rewrites links to refer to archived pages instead of live ones.
  - Example:
    - web.archive.org/web/**20050214202400**/http://www.google.com
    - Captured in **2005**, on **Feb 14** , at **20:24:00**
  - If the user clicks a link, he is redirected to a link that was captured at a time nearest to the home page.
  - Simulates live web environment.
  - Works across multiple domains

Other Services

- Archive-It
  - Launched in 2005
  - Has over 50 members
  - Helps organizations that do not have the infrastructure or the expertise to preserver public web content.
  - Members can manage their collection by paying an annual fee.
  - Specific versions of the Wayback machine are used
- The Bookmobile
  - Gives away paperback books based on material from the archive

References

- [Kahle 96]Kahle, Brewster. ‘Archiving the Internet’. Scientific American – March 1997 issue. Retrieved 19 August 2011.
- [Rackley 2010]Rackley, Marilyn(2010) ‘Internet Archive’, Encyclopedia of Library and Information Sciences, Third edition, 1:1, 2966-2976.