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Digital / Electronic Resources and Their File Formats

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Abstract: *Many automated libraries in the country are stepping forward to create and maintain digital libraries. The traditional functions of libraries had undergone various changes in present century and e-resources have great importance in libraries and amongst the library users, because in today's rapid changing world, information needs of learners and knowledge searchers are met through a plethora of sources. Preservation of digital information is a challenge because understanding the main activity in digital preservation i.e. 'format of the document' is difficult. This paper discusses the types of digital resources, types of digital formats. It includes brief summary on important file formats.*

Key Words: *E-Resources, E-Books, E-Journals, E-database, Consortia.*

1. INTRODUCTION:

INTERNET - The invention of computers approximately during 1950s and the developments in communication methods and their application for information processing and dissemination during last century has revolutionized the scientific and technological arena all over the World. Today computers, network, Internet and Web are the words more frequently used and discussed among people as well as in the library and information centers. Now computer became the prime necessity for literates.

Internet – terminologically it is a collection of computer networks and can be defined as a worldwide channel of communication. Internet is a large storehouse of information an information super high way. Further it is a back bone of universal network to which individual computers and networks can plug in cyber world. Internet provides an interactive environment for information handling. It enables information to be delivered to the desk top of the user through several access tools like, web browsers, search engines, HTML editors, etc. It reduces time for publishing and accessing. It also reduces pressure on collection development and dependency on libraries.

Digital Resources - The information which is incorporated in various web sites in digital / electronic formats is called as Digital / Electronic resource available on Internet. The information on Internet from these resources may be available free of cost or on payment. The commercial web site provides user identification code and Passwords against service charges for a specific period.

File Format – occupies an important role in preservation of Digital Information. It can be created and saved on any medium which is able to represent the binary digits 0 and 1. The sequence of bits with no intervening spaces and punctuation is called as a stream. A file format interprets the bit stream.

2. DIGITAL / ELECTRONIC RESOURCES:

Internet is the base for Digital / Electronic Resources such as:-

- Articles in electronic journals
- Newsletters and electronic Serials
- Electronic Books
- Preprints and Conference Papers
- Technical Papers
- Online Databases (Ex. DIALOG)
- Websites
- Self Publications in blog spots
- CD-ROMs / Diskettes and other media

The above resources are made available via web browsers, FTP, Gopher, Telnet, e-mail, and the messages posted to mailing lists and news groups, etc.

Purpose of e- journals is to provide speed publication and faster access to the academic clientele for study and research. E-journals provide latest information which can be categorized as a primary source. They are formatted approximately like journals articles in traditional printed journals. Being electronic form of articles, they contain metadata to know the details about the publisher and format of presentations while accessing the online databases.

E-book publication in electronic form contains text and images or both. E-books can be readable on computer monitor with electronic devices. Nowadays many e-books are freely available on Internet.

Many conferences and convention are being conducted by the organizations and institutions. Papers presented in the conference will be published either on CD-ROMS or linked to a website. These proceedings provide important primary information.

The various websites designed by Government or private organizations which are linked to Internet also contain electronic information. One can experience the vast coverage of topics from all the fields of knowledge. The blogs or web logs may define as websites or a portion of websites. These blogs are usually maintained by individual authors. Blogs contains regular entries of commentary, descriptions of events, graphics and videos. Most blogs are interactive and allows visitors to leave their comments sand may share messages with each other.

3. DIGITAL FILE FORMATS:

Digital or e-text documents are electronic files containing the content of text books and instructional materials in a format that can be viewed and accessed by a number of digital devices. Digital text can be increased in size, preferential colour schemes applied, and letters, words, phrases, sentences, paragraphs, and sections can be sequentially highlighted. For high quality accessibility, digital text should be appropriately tagged to identify the parts of the document including titles, headings, and alternative descriptions for images. The digital text can be read aloud by synthetic speech (text-to-speech). A particular form is used to present digital information on Internet which is called digital format. There are many versions/formats of digital text, the most common ones are:-

Text Files & Presentations

- Portable Document Format (PDF)
- Word Documents (DOC)
- Rich Text Format (RTF)

Spreadsheets

- Excel (XLS)

Images

- Joint Photographers Expert Group (JPEG)
- Graphics Interchange Format (GIF)
- Tagged Image File Format (TIFF)
- Portable Network Graphics (PNG)
- Bitmap (BMP)
- Encapsulated Postscript (EPS)

Audio

- Motion Pictures Expert Group layer 3 (MPEG)
- Musical Instrument Digital Interface (MIDI)
- Ave (WAV)

Video

- Audio Video Interleave (AVI)

Languages

- Standard General Mark up Language (SGML)
- Hyper Text Mark up Language (HTML)
- Extended Mark up Language(XML)

Data Compression

- Zone Information Protocol (ZIP)

Few important file formats are briefly discussed in the below paragraphs:-

Portable Document Format (PDF): PDF is a universal panel format developed by Adobe Systems during 1993. PDF is an open standard for document exchange. PDF is used for representing documents in a manner independent of application software, hardware, and operation systems. Here independent means regardless of application and the platform used to create it. PDF specification was available for free since 2001 and was officially released as an open standard in 2008 and published by ISO.

Joint Photographers Expert Group (JPEG): This is the format of choice for nearly all photographs on the web. We can achieve excellent quality even at rather high compression settings. JPG is useful as the ultimate format for all digital photographs. Digital cameras save in a JPEG format by default. Switching to TIFF or RAW improves quality in principle, but the difference is difficult to see. Shooting in TIFF has two disadvantages compared to JPEG: fewer photos per memory card, and a longer wait between photographs as the image transfers to the card. JPEG is optimized for photographs and similar continuous tone images that contain many colours. It stores information as 24 bits colour. The degree of compression of JPEG is adjustable. Compression factors of more than 20 are o0ften quite acceptable. Better graphics programs, such as Paint Shop Pro and Photoshop, allow us to view the image quality and file size as a function of compression level, so that we can conveniently choose the balance between qualities and file size.

Graphic Interchange Format (GIF): GIF achieves compression in two ways. First, it reduces the number of colours of colour-rich images the number of bits needed for pixel,. Second, it replaces commonly occurring patterns (especially large areas of uniform colours) with a short abbreviation: instead of storing "white, white, white, white, white" it stores "5 white". It creates a table of up to 256 colours from a pool of 16 million. If the image has fewer than 256 colours, GIF can render the image exactly. When the image contains many colours, software that creates the GIF uses any of several algorithms to approximate the colour tin the image with the limited palette of 256 colours available.

Tagged Image File Format (TIFF): This is usually the best quality output from a digital camera. Digital Cameras often offer round three JPOEG quality settings plus TIFF. Since JPEG always means at least some loss of quality, TIFF provides better quality. However the file size is huge compared to even the best JPEG setting and the advantages may not be noticeable. A more important use of TIFF is as the working storage format as you edit and manipulate digital images. TIFF is a very flexible format that can be lossless or loss. The details of the image storage algorithm are included as part of the file. In practice, TIFF is used almost exclusively as a lossless image storage format that uses no compression at all. Most graphics programs that u se TIFF do not compression. Consequently, file sizes are quite big.

Portable Network Graphics (PNG):: PNG is a lossless storage format. In contrast with common TIFF usage, it looks for patterns in the image that it can use to compress file size. The compression is exactly reversible, so the image is recovered exactly.

Bitmap (BMP): BMP is an uncompressed proprietary format invented by Microsoft. This file format is capable to store 2D digital images of arbitrary width, height and resolution.

RAW: RAW is an image output option available in some digital cameras. Though lossless, it is a factor of three of four smaller than TIFF files of the same image. The disadvantage is that there is a different RAW format for each manufacturer, and so we may have to use the manufacturer's software to view the images. RAW image files are sometimes called digital negatives.

4. CONCLUSION:

Whatever may be the file format, it has to support the beautiful presentation of digital / electronic information and display on a computer monitor. It should have technical values too. Internal specification information in a file format plays an important role in the digital data preservation activities. It is necessary to use open formats while creating digital documents and adding to a repository. Standardized file format prompts quality presentation of digital content. Familiarity of Librarians and library professionals on these file formats enhances knowledge on digital resources available on Internet.

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