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Ishare

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Ishare

Editorial

We would like to wholeheartedly thank our honorable Chairman, Secretary, Executive Director and Principal for their continuous encouragement and constant support for bringing out the magazine. We profoundly thank our Head of Department for encouraging and motivating us to lead the magazine a successful one right from the beginning. Ishare serves as a platform for updating and enhancing upcoming technologies in Information and Communication. We are grateful to all the contributors to this magazine so far. The magazine has been sent to almost 60 institutions in and around Tamilnadu. So far we have received feedbacks and appreciations from various institutions.

We would be very pleased to receive your feedbacks. Please send your feed backs to ishare@ksrcas.edu

By,

Editorial Board

CONTENT

1. RFID- RADIO-FREQUENCY IDENTIFICATION

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RFID stands for **Radio-Frequency IDentification**. The acronym refers to small electronic devices that consist of a small chip and an antenna. The chip typically is capable of carrying 2,000 bytes of data or less.

The RFID device serves the same purpose as a bar code or a magnetic strip on the back of a credit card or ATM card; it provides a unique identifier for that object. And, just as a bar code or magnetic strip must be scanned to get the information, the RFID device must be scanned to retrieve the identifying information.

RFID Works Better Than Barcodes

A significant advantage of RFID devices over the others mentioned above is that the RFID device does not need to be positioned precisely relative to the scanner. We're all familiar with the difficulty that store checkout clerks sometimes have in making sure that a barcode can be read. And obviously, credit cards and ATM cards must be swiped through a special reader.

In contrast, RFID devices will work within a few feet (up to 20 feet for high-frequency devices) of the scanner. For example, you could just put all of your groceries or purchases in a bag, and set the bag on the scanner. It

would be able to query all of the RFID devices and total your purchase immediately.

RFID technology has been available for more than fifty years. It has only been recently that the ability to manufacture the RFID devices has fallen to the point where they can be used as a "throwaway" inventory or control device. Alien Technologies recently sold 500 million RFID tags to Gillette at a cost of about ten cents per tag.

One reason that it has taken so long for RFID to come into common use is the lack of standards in the industry. Most companies invested in RFID technology only use the tags to track items within their control; many of the benefits of RFID come when items are tracked from company to company or from country to country.

Advantages of RFID versus Barcodes

RFID tags and barcodes both carry information about products. However, there are important differences between these two technologies:

- Barcode readers require a direct line of sight to the printed barcode; RFID readers do not require a direct line of sight to either active RFID tags or passive RFID tags.
- RFID tags can be read at much greater distances; an RFID reader can pull information from a tag at distances up to 300 feet. The range to read a barcode is much less, typically no more than fifteen feet.
- RFID readers can interrogate, or read, RFID tags much faster; read rates of forty or more tags per second are possible. Reading barcodes

is much more time-consuming; due to the fact that a direct line of sight is required, if the items are not properly oriented to the reader it may take seconds to read an individual tag. Barcode readers usually take a half-second or more to successfully complete a read.

- Line of sight requirements also limit the **ruggedness of barcodes** as well as the **reusability of barcodes**. (Since line of sight is required for barcodes, the printed barcode must be exposed on the outside of the product, where it is subject to greater wear and tear.) RFID tags are typically more rugged, since the electronic components are better protected in a plastic cover. RFID tags can also be implanted within the product itself, guaranteeing greater ruggedness and reusability.
- Barcodes have no read/write capability; that is, you cannot add to the information written on a printed barcode. RFID tags, however, can be read/write devices; the RFID reader can communicate with the tag, and alter as much of the information as the tag design will allow.
- RFID tags are typically more expensive than barcodes, in some cases, much more so.

Passive RFID Tag (or Passive Tag)

A **passive tag** is an tag that does not contain a battery; the power is supplied by the reader. When radio waves from the reader are encountered by a passive RFID tag, the coiled antenna within the tag forms a magnetic field. The tag draws power from it, energizing the circuits in the tag. The tag then sends the information encoded in the tag's memory.

Active Tag (Active RFID Tag)

An RFID tag is an **active tag** when it is equipped with a battery that can be used as a partial or complete source of power for the tag's circuitry and antenna. Some active tags contain replaceable batteries for years of use; others are sealed units. It is also possible to connect the tag to an external power source.

How RFID Works

How does RFID work? A Radio-Frequency IDentification system has three parts:

- A scanning antenna
- A transceiver with a decoder to interpret the data
- A transponder - the RFID tag - that has been programmed with information.

The scanning antenna puts out radio-frequency signals in a relatively short range. The RF radiation does two things:

- It provides a means of communicating with the transponder (the RFID tag)
- It provides the RFID tag with the energy to communicate (in the case of passive RFID tags).

This is an absolutely key part of the technology; RFID tags do not need to contain batteries, and can therefore remain usable for very long periods of time (maybe decades).

The scanning antennas can be permanently affixed to a surface; handheld antennas are also available. They can take whatever shape you need; for example, you could build them into a door frame to accept data from persons or objects passing through.

When an RFID tag passes through the field of the scanning antenna, it detects the activation signal from the antenna, that "wakes up" the RFID chip, and it transmits the information on its microchip to be picked up by the scanning antenna.

In addition, the RFID tag may be of one of two types. Active RFID tags have their own power source; the advantage of these tags is that the reader can be much farther away and still get the signal. Even though some of these devices are built to have up to a 10 year life span, they have limited life spans. Passive RFID tags, however, do not require batteries, and can be much smaller and have a virtually unlimited life span.

RFID tags can be read in a wide variety of circumstances, where barcodes or other optically read technologies are useless.

- The tag need not be on the surface of the object (and is therefore not subject to wear)
- The read time is typically less than 100 milliseconds
- Large numbers of tags can be read at once rather than item by item.

How is RFID used inside a living body?

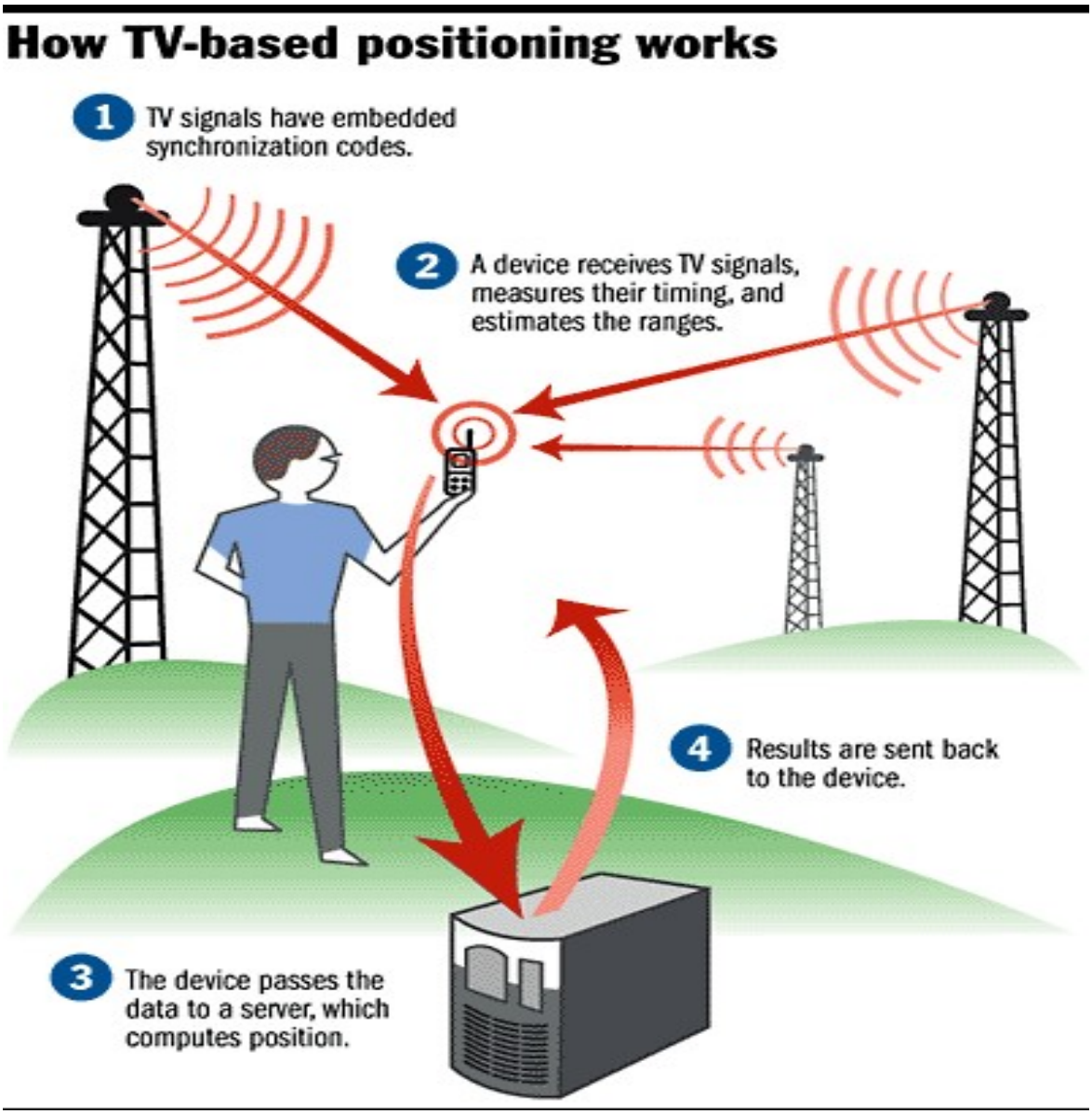
RFID devices that are intended to be implanted inside a living body (like an animal or human being) have special requirements. They need to be encased in a special kind of casing that will not irritate or react with the living tissues that they are inserted into. The casing must also be transparent to the scanning radio-frequency beam that activates the chip. Some RFID vendors have created biocompatible glass for use in these applications.

One potential problem with being placed within a living organism is that the tiny RFID device may move around under the skin. This can be avoided by using special materials that actually let the surrounding tissue grow up to the casing and bond with it.

Because the radio-frequency waves that activate the microchip containing the identification number are only useful within a few feet (or less), the RFID chip is typically inserted very close to the surface of the skin.

The placement of the device is usually done with a hypodermics-type needle. This method of insertion also dictates the shape and size of the device; implantable RFID devices are typically the size and diameter of a grain of rice. For dogs, the device is usually implanted between the shoulder blades.

RFID tags have been placed inside cows; some discussion of having all cows implanted with RFID devices has resulted from the recent scare with mad cow disease. Dog owners have used RFID tags to identify their pets rather than tattoos (the more traditional method).



2. Maximite Microcomputer

S. Neelaveni
Assistant Professor

Maximite Microcomputer is a Microchip PIC32 microcontroller-based microcomputer. Originally designed as a hobby kit, the Maximite was introduced in a three-part article in Silicon Chip magazine in autumn of 2011 by Australian designer Geoff Graham.

The project consists of two main components — a main circuit board and the MMBasic Interpreter, styled after GW-BASIC.

Versions

Maximite version 2.7 is still an open source project; several hobbyists have produced their own custom versions, often using commercially available prototyping circuit boards.

Clones

Several Maximite clones were designed and released in the months following its introduction. Some, such as the Maximite SM1, and Geoff Graham's latest version, the Mini-Maximite, are hardware- and software-compatible with the original design, but use a different form factor.

Others, like the DuinoMite, from the Bulgarian company Olimex, have altered the hardware by adding Arduino headers to make the board more flexible, but need custom versions of the firmware to accommodate the differences. Some of these changes have been incorporated in the official version as it gets updated.

Australian Distributor Dontronics and United States programmer Ken Segler have been active in adapting the software to run on the different versions of the hardware. Geoff Graham has also released an altered version of MMBasic for the UBW32 development Board.

Maximite clones made by US producer CircuitGizmos remain compatible with the original Maximite design and include a very small CGMMSTICK1 that can be used with solder less breadboards, and a Colour Maximite compatible CGCOLORMAX1.

MMBasic

MMBasic 3.x has support for user defined subroutines and modern Line-numberless structure. This MMBasic 3.x has been released in several versions including support for the Olimex Duinomite, UBW32 and CGMMStick variants.

While the versions of MMBasic prior to 3.x were available as free and open-source software distributed under the GNU General Public License, for the 3.x versions the license was changed to a proprietary one, with the source code available free of charge for personal use.

ICeemite

On 11 May 2013, an IC-style version named DTX2-4105C (later given the name "ICeemite"), entirely designed for inclusion into embedded systems was announced by the Australian company Dimitech. This new revision of the original Maximite brings a real-time clock and a microSD card connector on board and fits into a PLCC-68 socket. As of the day of announcement it was the world's smallest full Maximite system. ICeemite offers custom built firmware with additional extras used in embedded systems such as multitasking and power management, but does not support colour graphics.

Colour Maximite

Color Maximite (CircuitGizmos CGCOLORMAX1) showing all of the graphics modes. A new version of the Maximite was featured in the September Issue of Silicon Chip Magazine.

New features in the Colour Maximite are.

- 100pin Version PIC32
- Colour VGA with eight colours (black, red, green, blue, cyan, yellow, purple and white).
- Synthesised stereo music and sound effects.

- Battery backed real time clock (optional).
- Arduino compatible connector with an additional 20 I/O lines that are independent of the original 20 I/Os.
- 2 channel PWM analog output.
- Special commands for animated games.

- Version 4.0 of MMBasic which has extra commands to access and utilize the additional features.

Several software and hardware projects have been utilizing the Maximite.

3. ANDROID LOLLIPOP

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Assistant Professor

Android 5.0 "Lollipop" is the latest version of the Android mobile operating system developed by Google. Unveiled on June 25, 2014 during Google I/O, it became available through official over-the-air (OTA) updates on November 12, 2014, for select devices that run distributions of Android serviced by Google (such as Nexus and Google Play edition devices). Its source code was made available on November 3, 2014.

One of the most prominent changes in the Lollipop release is a redesigned user interface built around a design language referred to as "material design". Other changes include improvements to the notifications, which can be accessed from the lock screen and displayed within applications as top-of-the-screen banners. Google also made internal changes to the platform, with the Android Runtime (ART) officially replacing Dalvik for improved application performance, and with changes intended to improve and optimize battery usage, known internally as Project Volta.

Development

Android 5.0 was first unveiled under the codename "Android L" on June 25, 2014 during a keynote presentation at the Google I/O developers' conference. Alongside Lollipop, the presentation focused on a number of new Android-oriented platforms and technologies, including Android TV, in-car platform Android Auto, wearable computing platform Android Wear, and health tracking platform Google Fit.

Part of the presentation was dedicated to a new cross-platform design language referred to as "material design". Expanding upon the "card" motifs first seen in Google Now, it is a design with increased use of grid-based layouts, responsive animations and transitions, padding, and depth effects such as lighting and shadows. Designer Matías Duarte explained that "unlike real paper, our digital material can expand and

reform intelligently. Material has physical surfaces and edges. Seams and shadows provide meaning about what you can touch." The material design language will not only be used on Android, but across Google's suite of web software as well, providing a consistent experience across all platforms.

Features

Android 5.0 introduces a refreshed notification system. Individual notifications are now displayed on cards to adhere to the material design language, and batches of notifications can be grouped by the app that produced them. Notifications are now displayed on the lock screen as cards, and "heads up" notifications can also be displayed as large banners across the top of the screen, along with their respective action buttons. A do-not-disturb feature is also added for notifications. The recent apps menu was redesigned to use a three-dimensional stack of cards to represent open apps. Individual apps can also display multiple cards in the recent menu, rather than only one entry per app; for example, a web browser can show all of its open tabs as individual cards.

Lollipop also contains major new platform features for developers, with over 5,000 new APIs added for use by applications. For example, there is the possibility to save photos in a raw image format. Additionally, the Dalvik virtual machine was officially replaced by Android Runtime (ART), which is a new runtime environment that was introduced as a technology preview in KitKat. ART is a cross-platform runtime which supports the x86, ARM, and MIPS architectures in both 32-bit and 64-bit

environments. Unlike Dalvik, which uses just-in-time compilation (JIT), ART compiles apps upon installation, which are then run exclusively from the compiled version from then on. This technique removes the processing overhead associated with the JIT process, improving system performance.

Lollipop also aims to improve battery consumption through a series of optimizations known as "Project Volta". Among its changes are a new battery saver mode, job scheduling APIs which can restrict certain tasks to only occur over Wi-Fi, and batching of tasks to reduce the overall amount of time that internal radios are active. The new developer tool called "Battery Historian" can be used for tracking battery consumption by apps while in use. The Android Extension Pack APIs also provide graphics functions such as new shaders, aiming to provide PC-level graphics for 3D games on Android devices.

A number of system-level, enterprise-oriented features were also introduced under the banner "Android for Work": Samsung contributed its Knox security framework for segregating personal and work-oriented data from each other on a device, along with accompanying APIs for managing the environment. Devices can also be configured so that users do not have to unlock their device with a PIN or pattern if it is within a trusted, physical location, or is in proximity to a user's Android Wear device. Device encryption will be enabled by default.

Release

A developer preview of Android L, build LPV79, was released for the Nexus 5 and 2013 Nexus 7 on June 26, 2014 in the form of flashable images. Source code for GPL-licensed components of the developer preview was released via Android Open Source Project (AOSP) in July 2014. A second developer preview build, LPV81C, was released on August 7, 2014, alongside the beta version of the Google Fit platform and SDK. As with the previous build, the second developer preview build is available only for the Nexus 5 and 2013 Nexus 7.

On October 15, 2014, Google officially announced that Android L would be known as Android 5.0 "Lollipop". The company also unveiled launch devices for Android 5.0—including Motorola's Nexus 6 and HTC's Nexus 9—for release on November 3, 2014. Google stated that Nexus (including the Nexus 4, 5, 7, and 10) and Google Play edition devices would receive updates to Lollipop "in the coming weeks"; one more developer preview build for Nexus devices and the new SDK revision for application developers would be released on October 17, 2014. Update schedules for third-party Android devices may vary by manufacturer.

The full source code of Android 5.0 was pushed to AOSP on November 3, 2014, allowing developers and OEMs to begin producing their own builds of the operating system. On December 2, 2014, factory images for Nexus smartphones and tablets were updated to the 5.0.1 version, which introduces a few bug fixes, and a serious bug that affects Nexus 4 devices and prevents the audio from working during phone calls.

A device-specific Lollipop 5.0.2 (LRX22G) version was released for the first-generation Nexus 7 on December 19, 2014. It is unknown if this update will be released to the tablet's sibling models.

Android 5.1, an updated version of Lollipop, has to be announced in February 2015 as part of the Indonesian launch of Android One, and is preloaded on Android One devices sold in Indonesia and the Philippines. Google has not yet officially elaborated on the changes it brings, nor when it will be released for existing devices, but Nexus devices have running test builds of Android 5.1 been detected through web analytics. Mo Versi, HTC's vice president of product management, stated that Google was planning a "maintenance release" of Lollipop for March 2015, which is implied to be 5.1.

4. TEXT MINING

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What is Text Mining?

Simply put text mining is the knowledge discovery from textual data or textual data exploration to uncover useful but hidden information. However, many people have defined text mining slightly differently. The following are a few definitions:

"The objective of Text Mining is to exploit information contained in textual documents in various ways, including …discovery of patterns and trends in data, associations among entities, predictive rules, etc." (Grobelnik et al., 2001).

"Another way to view text data mining is as a process of exploratory data analysis that leads to heretofore unknown information, or to answers for questions for which the answer is not currently known." (Hearst, 1999).

Text Mining Framework Components

The different stages in the text mining framework are described below:

1. Textual Data Sources

The textual data is available in numerous internal and external data source like electronic text, call center logs, social media, corporate documents, research papers, application forms, service notes, emails, etc.

2. Preprocessing

Preprocessing tasks include methods to collect data from the disparate data sources. This is the preliminary step of identifying the textual information for mining and analysis. Preprocessing tasks apply various feature extraction methods against the data. Preprocessing tasks include different types of techniques to transform the raw, unstructured, original format data into structured, intermediate data format. Knowledge discovery operations are conducted against the structured intermediate data.

For the preparation of unstructured data into a structured data format, different techniques are needed than those of traditional data mining systems where the knowledge discovery is done against the

structured data sources. Various preprocessing techniques exist and can be used in combination to create structured data representation from raw textual data. Therefore different combinations of techniques can be used based on the type of the raw textual data.

a. Text Cleansing

Text cleansing is the process of cleansing noisy text from the textual sources. Noisy textual data can be found in SMSes, email, online chat, news articles, blogs and web pages. Such text may have spelling errors, abbreviations, non-standard terminology, missing punctuation, misleading case information, as well as false starts, repetitions, and special characters.

A few of the cleaning techniques are:

- **Removing stop words (deleting very common words like "a", "the", "and", etc.).**
- **Stemming (ways of combining words that have the same linguistic root or stem).**

b. Tokenization

Tokenization is the process of breaking piece of text into smaller pieces like words, phrases, symbols and other elements which are called tokens. Even a whole sentence can be considered as a token. During the tokenization process some characters like punctuation marks can be removed. The tokens then become an input for other processes in text mining like parsing.

Tokenization relies mostly on simple heuristics in order to separate tokens by following a few steps:

1. Tokens or words are separated by whitespace, punctuation marks or line breaks
2. White space or punctuation marks may or may not be included depending on the need
3. All characters within contiguous strings are part of the token. Tokens can be made up of all alpha characters, alphanumeric characters or numeric characters only.

c. POS tagging

Part-of-speech tagging also known as grammatical tagging or word-category disambiguation is the process of assigning a word in the text corresponding to a particular part of speech like noun, verb, pronoun, preposition, adverb, adjective or other lexical class marker to each word in a sentence. The input to a tagging algorithm is a string of words of a natural language sentence and a specified tagset (a finite list of Part-of-speech tags). The output is a single best POS tag for each word.

d. Syntactical Parsing

Syntactical parsing is the process of performing syntactical analysis on a string of words, phrase or a sentence according to certain rules of grammar. Syntactical parsing discovers structure in the text and is used to determine if a text conforms to an expected format. It involves breaking of text into different elements and identifying syntactical relationship between different elements.

e. Information Extraction

Information extraction identifies the key phrases and relationships within the textual data. This is done by a process called pattern matching which looks for predefined sequences in the text. Information extraction infers the relationships between all the identified people, places and time from the text to extract the meaningful information. For handling huge volumes of textual data Information extraction can be very useful. The meaningful information is collected and stores in the data repositories for Knowledge discovery, mining and analysis. A few of the information extraction techniques are described below:

i. Topic tracking

Topic tracking system keeps track of the users and their profiles and the documents a particular user views and thereby finds out the similar documents which may be of interest to the user. This system can be helpful in letting the users identify particular categories they may be interested in and can also identify user's interest based on their reading history.

ii. Summarization

Text summarization, as one can make out, is to create a summary of the detailed text. The most important part of summarization is to reduce the size of the text without distorting the overall meaning and without eliminating the essential points in the text. This helps in getting the useful information from only summarized portion of text.

iii. Categorization

Text Categorization also known as text classification is the task of grouping a set of free-text documents into predefined categories. This is done by identifying the main topics in the text documents. The text documents can be classified based on the subject and other attributes like document type, author, genre etc.

iv. Feature/Term Selection

A major difficulty of text categorization is high dimensionality of the feature space. The feature selection methods can be used to reduce the dimensionality of the datasets by removing the features that are not required for text categorization or classification. Feature selection is an essential part of text categorization or classification. The feature space consists of the unique terms (words or phrases) that occur in text documents. Text document collections have a lot of such unique terms, which can be tens or hundreds of thousands of terms for even moderate sized text collection. Having a lot of such terms are not considered useful for text classification. Reducing the set of terms can make classification more effective and can improve generalization error.

v. Entity Extraction

Entity Extraction also know as Named Entity Recognition or Named Entity Extraction is a subtask of Information extraction that is used to identify and classify atomic elements in text into predefined categories like people, places, organizations and products. These are generally proper nouns and constitute 'who' and 'where'. However there may be other

named entities which can be interesting like dates, addresses, phone numbers and website url's. Ability to extract these kind of named entities can essential based on what you are trying to achieve.

vi. Concept extraction

Concepts answer the question: 'What are the important concepts that are being used? Concept is a word or a phrase contained in the text by which you can identify the context of the text collection. Identification of the concepts in the text is one of the ways of classification/ categorization. Social media, technology, business are examples of concepts which can be identified in the text. For example, you can identify a conversation in text talking about 'technology' or a collection of text discussing 'politics'. To find out whether a piece of text is actually about a particular concept or it just describes something related to that concept, concept classifiers have scores associated with them.

vii. Theme extraction

Themes are the main ideas in a document. Themes can be concrete concepts such as Oracle Corporation, jazz music, football, England, or Nelson Mandela; themes can be abstract concepts such as success, happiness, motivation, or unification. Themes can also be groupings commonly defined in the world, such as chemistry, botany, or fruit.

viii. Clustering

Clustering is defined as the process of organizing objects together into groups and the objects in each group have similarity with the other

objects in some way or the other. Therefore a cluster is a collection of objects which are similar between them and dissimilar to the objects in the other clusters. Clustering help identify a structure in a collection of unlabeled text.

Algorithms/Models for business applications

This section describes various algorithms/models used for some of the business applications.

a. Clustering algorithms

i. K-mean

ii. TwoStep

iii. Kohonen network/ self organizing maps

b. Acquisition models

c. Cross-sell and up-sell models

d. Classification algorithms

i. Neural networks

ii. Decision trees

iii. Logistic regression

iv. Bayesian networks

e. Association models

i. A priori

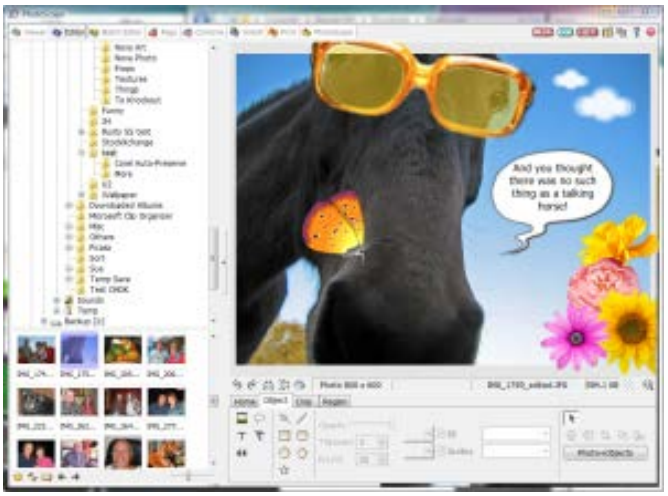
ii. Sequence models

5. TOP 11 FREE PHOTO EDITORS FOR WINDOWS

S. Latha
Assistant Professor

1. PhotoScape

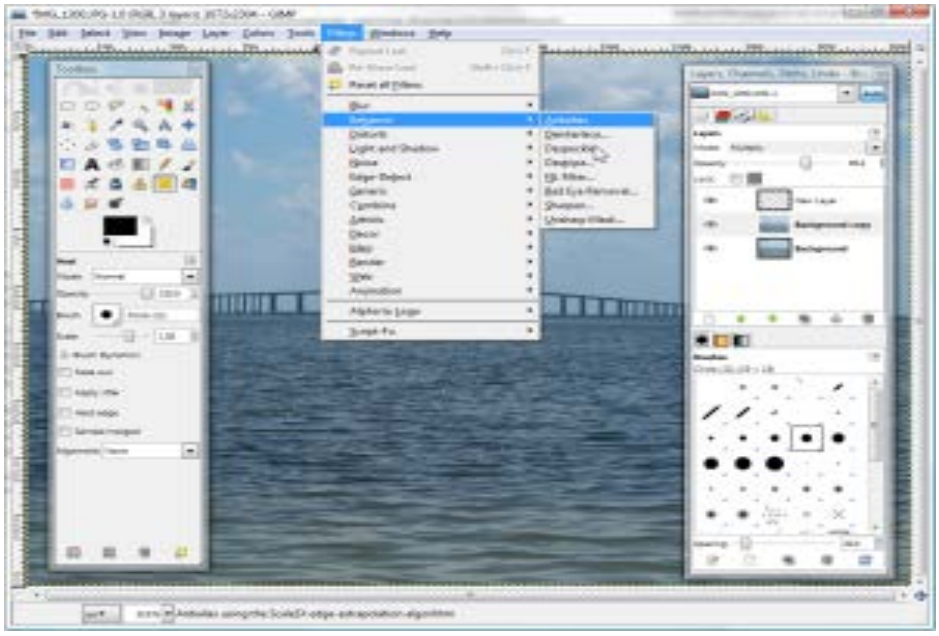
It is a free photo editor and very easy to use. Photoscape provides several modules including a viewer, editor, batch processor, Raw converter, file renamer, print layout tool, screen capture tool, color picker, and more.



2. GIMP for Windows

GIMP is a popular open-source image editor originally developed for Unix/Linux. Often lauded as the "free Photoshop," it does have an interface and features similar to Photoshop, but with a steep learning curve to match. Because its volunteer-developed beta software, stability and frequency of updates could be an issue; however, many happy users report using GIMP for Windows without significant problems.

- GIMP is an acronym for GNU Image Manipulation Program. It is a freely distributed program for such tasks as photo retouching, image composition and image authoring.
- It has many capabilities. It can be used as a simple paint program, an expert quality photo retouching program, an online batch processing system, a mass production image renderer, an image format converter, etc.
- GIMP is expandable and extensible. It is designed to be augmented with plug-ins and extensions to do just about anything. The advanced scripting interface allows everything from the simplest task to the most complex image manipulation procedures to be easily scripted.
- GIMP is written and developed under X11 on UNIX platforms. But basically the same code also runs on MS Windows and Mac OS X.



3. Paint.NET

Paint.NET is a free image and photo manipulation software for Windows 2000, XP, Vista, or Server 2003. Paint.NET started development at Washington State University with additional help from Microsoft, and continues to be updated and maintained by some of the alumni that originally worked on it. Paint.NET features layers, painting and drawing tools, special effects, unlimited undo history, and levels adjustments. Paint.NET is completely free, and the source code is also available for free.

4. LazPaint for Windows and Linux

LazPaint is an open source and free to download raster image editor aimed at users who are looking for an application that is more easily accessible than GIMP. LazPaint presents its users with a pretty clear and easily understood user interface that is similar to Paint.NET. For image

editor newbies who aren't looking for an overly powerful package or to enhance their photos, LazPaint is worth looking at.

5. Serif PhotoPlus

For a long time, Serif has given away previous versions of their software to entice users to purchase the current version. Recently, the company has changed that tactic, and now offer a free limited version of the photo-editing software PhotoPlus SE. PhotoPlus SE features an export optimizer, editable text, layer effects, layer masks, a red-eye removal tool, special effects, versatile brushes, and photo enhancement tools. PhotoPlus SE can be upgraded to the full version of PhotoPlus, with many more features, for a modest price.

6. Photo Pos Pro

Photo Pos Pro is a free photo editor with advanced features and a well-designed interface. From the developer: "Though the Photo Pos Pro software is a powerful program, it contains an extremely user-friendly interface enabling you to work intuitively. If you are a beginner you can easily begin to use the program in an intuitive fashion. With the Help system, you can turn from a beginner to a professional user.

7. Pixia

Pixia is the English version of a popular free painting and retouching software that originated in Japan. It features custom brush tips, multiple layers, masking, vector- and bitmap-based drawing tools, color, tone, and lighting adjustments, and multiple undo/redo. Like many freeware editors, there is no support for saving GIF format. Pixia is also available for many other languages. Pixia works with Windows 2000, XP, Vista and 7.

8. VCW VicMan's Photo Editor

This award-winning graphic editor offers a variety of painting and editing tools and features including a text tool, gradients, selections by color or region, color replacement, editing in any scale, special effects and so on. The free version used to be an enticement to upgrade to the Pro version, but as of December 2006, the Pro version is free. While it hasn't been updated since 2007, it's still a worthwhile option for those looking for a simple free editor.

9. PhotoFiltre

PhotoFiltre offers a simple, but elegant user interface and a lot of one-click image adjustments, filters, and effects. There is a built in image explorer panel for visually navigating your file system, basic drawing, painting, retouching and selection tools, and batch processing capabilities. PhotoFiltre is free for private, non commercial or educational use (including non-profit organizations).

10. Ultimate Paint

Ultimate Paint is available in both shareware and freeware versions for image creation, viewing, and manipulation. It has been designed to be fast and compact, and if you're familiar with the old Deluxe Paint program from Electronic Arts, Ultimate Paint is said to be very similar. The free version is an older release of the full-featured shareware product.

11. Picasa

Picasa is a free digital photo organizer and editor which have improved considerably since its first release. Picasa is excellent for beginners and casual digital shooters who want to find all their pictures, sort them into albums, do quick edits, and share with friends and family.

6. SCOM Tool

R. Sangeetha
Assistant Professor

Introduction

System Center Operations Manager (SCOM) is a cross-platform data center management system for operating systems and hyper visor. Its uses a single interface that shows state, health and performance information of computer systems. It also provides alerts generated according to some availability, performance, configuration or security situation being identified. It works with Microsoft Windows Server and Unix-based hosts.

History

The product began as a network management system called SeNTry ELM, which was developed by the British company **Serverware Group plc**. In June 1998 the **intellectual property rights** were bought by Mission Critical Software, inc who renamed the product *Enterprise Event Manager*. Mission Critical undertook a complete rewrite of the product, naming the new version OnePoint Operations Manager (OOM). Mission Critical Software merged with **NetIQ** in early 2000, and sold the rights of the product to Microsoft in October 2000. It was renamed *Microsoft Operations Manager* (MOM) and had another release as Microsoft Operations Manager 2005. Microsoft renamed the product *System Center Operations Manager* and released System Center Operations Manager 2007. System Center Operations Manager 2007 was designed from a fresh code base, and although sharing similarities to Microsoft Operations Manager, is not an upgrade from the previous versions.

Central concepts

The basic idea is to place a piece of software, an *agent*, on the computer to be monitored. The agent watches several sources on that computer, including the Windows Event Log, for specific events or *alerts* generated by the applications executing on the monitored computer. Upon alert occurrence and detection, the agent forwards the alert to a central SCOM server. This SCOM server application maintains a database that includes a history of alerts. The SCOM server applies filtering rules to alerts as they arrive; a rule can trigger some notification to a human, such

as an e-mail or a pager message, generate a network support ticket, or trigger some other workflow intended to correct the cause of the alert in an appropriate manner.

SCOM uses the term *management pack* to refer to a set of filtering rules specific to some monitored application. While Microsoft and other software vendors make management packages available for their products, SCOM also provides for authoring custom management packs. While an administrator role is needed to install agents, configure monitored computers and create management packs, rights to simply view the list of recent alerts can be given to any valid user account.

Several SCOM servers can be aggregated together to monitor multiple networks across logical Windows domain and physical network boundaries. In previous versions of Operations Manager, a web service was employed to connect several separately-managed groups to a central location. As of Operations Manager 2007, a web service is no longer used. Rather, a direct TCP connection is used, making use of port 5723 for these communications.

Versions

Microsoft Operations Manager 2000

- Microsoft Operations Manager 2005
  - Microsoft Operations Manager 2005 Service Pack 1
- System Center Operations Manager 2007 (6.0.5000.0)

- System Center Operations Manager 2007 Service Pack 1 (6.0.6278.0)
- System Center Operations Manager 2007 R2 (6.1.7221.0)

- System Center Operations Manager 2012 (7.0.8560.0)
  - System Center Operations Manager 2012 Service Pack 1 (7.0.9538.0)
  - System Center Operations Manager 2012 R2 (7.1.10226.0)

7. GOOGLE DOODLES

D.Shyamaladevi,
Assistant Professor.

Doodles are the fun, surprising, and sometimes spontaneous changes that are made to the Google logo to celebrate holidays, anniversaries, and the lives of famous artists, pioneers, and scientists.

How did the idea for doodles originate?

In 1998, before the company was even incorporated, the concept of the doodle was born when Google founders Larry and Sergey played with the corporate logo to indicate their attendance at the Burning Man festival in the Nevada desert. They placed a stick figure drawing behind the 2nd "o" in the word, Google, and the revised logo was intended as a comical message to Google users that the founders were "out of office". While the first doodle was relatively simple, the idea of decorating the company logo to celebrate notable events was born.

Two years later in 2000, Larry and Sergey asked current webmaster Dennis Hwang, an intern at the time, to produce a doodle for Bastille Day. It was so well received by our users that Dennis was appointed Google's chief doodler and doodles started showing up more and more regularly on the Google homepage. In the beginning, the doodles mostly celebrated familiar holidays; nowadays, they highlight a wide array of events and anniversaries from the Birthday of John James Audubon to the Ice Cream Sundae.

Over time, the demand for doodles has risen in the U.S. and internationally. Creating doodles is now the responsibility of a team of talented illustrators and engineers. For them, creating doodles has become a group effort to enliven the Google homepage and bring smiles to the faces of Google users around the world.

How many doodles has Google done over the years?

The team has created over 2000 doodles for our homepages around the world.

Who chooses what doodles will be created and how do you decide which events will receive doodles?

A group of Googlers get together regularly to brainstorm and decide which events will be celebrated with a doodle. The ideas for the doodles come from numerous sources including Googlers and Google users. The doodle selection process aims to celebrate interesting events and anniversaries that reflect Google's personality and love for innovation.

Who designs the doodles?

There is a team of illustrators (we call them doodlers) and engineers that are behind each and every doodle you see.

How can Google users/the public submit ideas for doodles?

The doodle team is always excited to hear ideas from users - they can email proposals@google.com with ideas for the next Google doodle. The team receives hundreds of requests every day so we unfortunately can't respond to everyone. But rest assured that we're reading them.

New year's day 2015, Jan 1 2015

India Republic day 2015, Jan 26, 2015

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Bing

* Bing was unveiled by microsoft CEO Steve Ballmer on May 28,2009.
* Available in 40 languages
* The Bing homepage featires an image or video that changes daily.