

# THOUGHTS

Bimonthly exposure

Padmasri Dr. B. V. Raju Institute of Computer Education, Vishnupur, Bhimavaram.

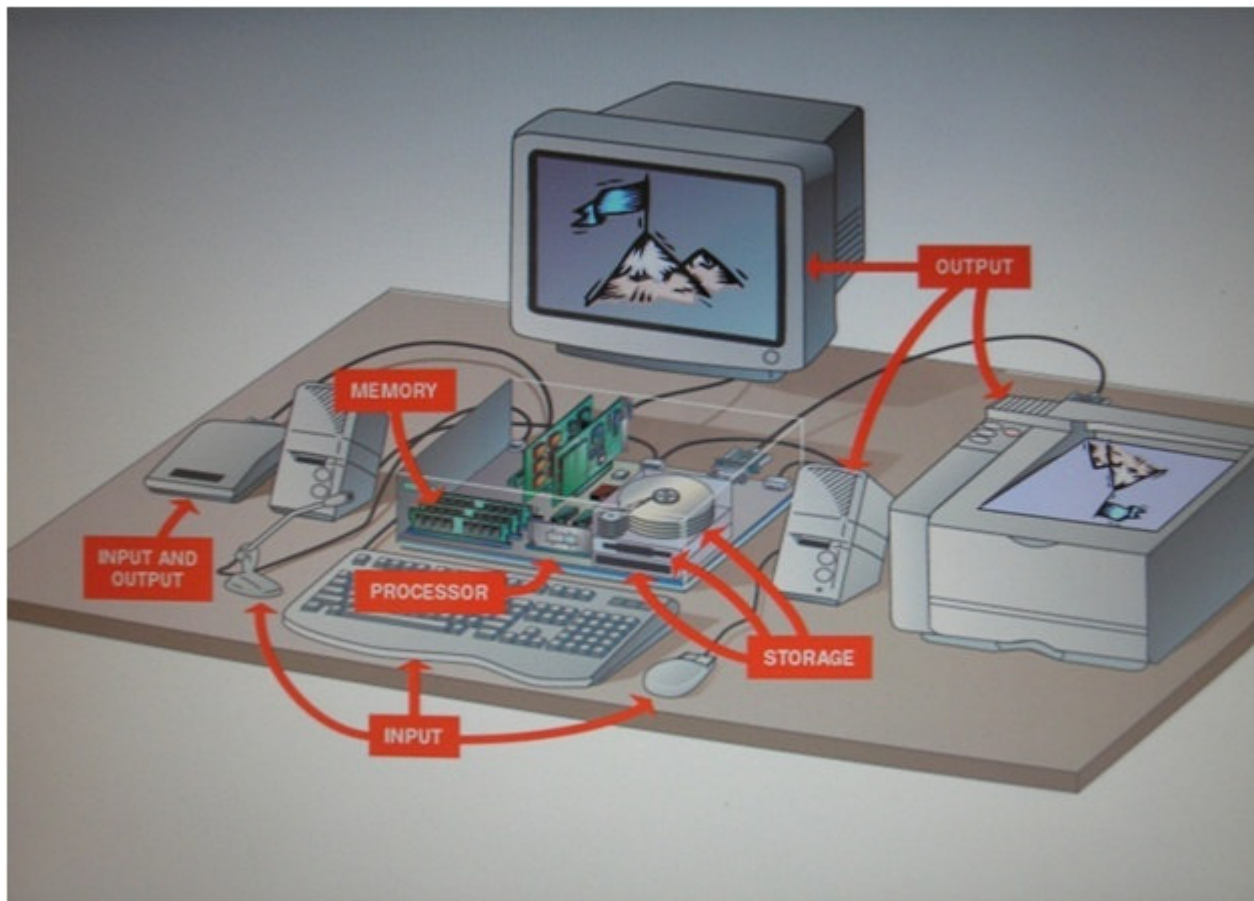


“Set your goals and dedicate yourself to achieve them through hard work “



1/4/2009  
BVRICE  
MCA students

## INAUGURAL ISSUE



Not everything that can be counted counts and not everything that counts can be counted.

– Albert Einstein

## CHAIRMAN'S MESSAGE

I am happy to see the enthusiasm of Padmasri Dr. B. V. Raju institute of Computer Education MCA students to bring out a bimonthly exposure, "THOUGHTS" to express their hidden potential and technical ideas. The efforts put by the college in encouraging the ideas of the students are appreciable. I wish all the student community the best in the Endeavour.

Sri K. V. Vishnu Raju

Chairman

## SECRETARY'S MESSAGE

I am extremely pleased to note that BVRICE MCA students are launching the inaugural issue of "THOUGHTS", a bimonthly exposure which is of its own kind to put before us their technical skills. I thank all the students and the personalities who encouraged them from behind the screen. Best wishes to one and all.

Sri P. Krishna Ganga Raju

Secretary

## PRINCIPAL'S MESSAGE

I am pleased to see that “THOUGHTS”, a bimonthly exposure of MCA students, initiated in our college is going to be a reality. Congratulations to all the students, the committed faculty and staff but for whose constant effort to bring out the “THOUGHTS” is not possible. This innovative idea is also useful for the students to train themselves in many areas of technology.

We are consistent in getting good results in many fields and it is not the end of the journey in the competitive world of academics. We have to do a lot still. I have confidence that we achieve the goal.

Always remember the founder chairman who spent all his time in bringing up the society in his capacity and the support from our present young visionary and dynamic Chairman. The college can march ahead in his able leadership. Once again thanking all our beloved students and the persons involved in bringing out “THOUGHTS” successfully.

Dr. P. Venkata Rao

Principal

## ISLE OF MAN 50 PENCE COIN 1989



## Web Design Principles

N. Mrudula & R. Sujitha

2/3 MCA II Sem

**Primary audience:** The areas in which to be put on the web page. Consider your audience and your goals. You should have a clear sense of who will be using your site .what kind of experience you are hoping to provide. You can make a hierarchical outline. Either way, it is essential to organize your information and lay out the architecture of your site before attempting to implement your vision.

- Computer equipment (special software requirements, available memory, speed/MHz)
- Technology level of audience
- Needs
- Interests

**Purpose for the site:** The types of organizations want to expose. This should be part of your site's home page, and should explain the scope and purpose of the site. Once users have noticed your title and followed a link to your site, they will expect quickly to find a further elaboration of your title, a brief paragraph or two describing what the site is all about and what makes it interesting.

- Educational
- Entertainment
- Profit earning business
- Non-profit organization

**Types of content:** - The type of format we want to organize the web page information.

Better to use combination of brief text with graphic icons for fast accessing. It also helps to drag the user attention to the things.

- Text
- Graphics
- Video
- Applets

- Sound
- Forms or survey0s for users to fill out

**Location of the site:** - To launch web site we have to select a service provider. It is compulsory to register the domain name and also select the suitable service provider for your site.

- Organization server
- Personal server
- Commercial Internet service provider (ISP)
- Educational institution server

**Information provided on the "home" page:** - The things to be appeared on our Home page. The most important things are categorized into different columns and put them in the home page. A home page should give the user an overview of the site.

- A "who we are" or "who I am" message
- A mission or purpose statement
- Contact information \*
- Update notice
- Copyright notice
- Disclaimer (for ex: Though we try to keep the information up-to-date, some information may not be the most current. OR "This list does not constitute an endorsement of any one or more of the products.")

\* If the site is for a business or organization, it is important to include an address, phone number and email contact. If the site is a personal site, disclosing an address or phone number is not advised because of privacy issues.

**Content:** - The key information we want to place in the web page. The content to be place on the web site should be grammatically correct and it is accepted by all kinds of users who use it.

- Should match the purpose
- Should be well organized
- Should be spell checked

- Should observe correct English (or the appropriate language). Some sites have information in more than one language, depending upon the possible audiences.
- Should be current information
- Should be appropriate for the audience

#### **Level of Web technology to best suit the purpose:**

- Minimal style - mostly text, little or no graphics (quick loading, does not require lots of memory or a high end graphic card)
- Medium style - some graphics to add an element of design or style, which compliments the information, but does not detract from the main purpose.
- High tech style - Lots of graphics, animation, java applets, "art" text, video clips, etc.

#### **Style to best suit the purpose**

- Professional
- Scholarly
- Casual
- Child friendly
- Teen oriented
- Artistic

#### **Page design - consistency, clarity, user friendliness:**

- Include a "back to home" link
- Use a consistent template on each page
- Create a uniform color scheme (with limited color palate)
- Be sure there is sufficient contrast between background and text
- Avoid a too large font that SHOUTS\*
- Avoid a too small font that is hard to read\*
- Place important information near the top
- Avoid long lists of links if possible.
- Categorize lists in smaller chunks and provide internal tags
- Provide a table of contents (with links to find information in a long list)
- Organize your material to too much scrolling to find content

#### **Resolution:**

- Standard for screen resolution is **800** (width) **by 600** (height). If you design for a higher resolution the user may have to scroll back and forth or up and down to view your full content.

#### **Graphics:**

- JPG image format (compressed file format for high quality images - photographs). While working on photographs, save in. tiff format, or program default, until the final quality and size is achieved, then save in .jpg. This saves the image quality.
- GIF image format (for graphics files, buttons, clip art not photographic quality). The quality does not degrade when working with .gif files.
- Animated .gif files (Use sparingly. Is animation appropriate to the theme or a distraction from your main purpose?)
- Flash animation (Provide a "turn off" option for flash). Too many "bells and whistles" can be overpowering. Does the flash compliment the site? Or is it there to say, "See what I can do?"
- Include HEIGHT and WIDTH tags to reduce loading time for graphics. Don't resize images by just changing the size tags. This increases loading time.

#### **Background and text colors:**

- Patterned backgrounds produce "noise" that interferes with reading the text.
- Provide sufficient contrast between background and text
- Limit your font colors - "Hot" colors (like bright pink and orange) are, in general less professional for business sites. (If the business is "hot" graphics, however, that caution would probably not apply.) Primary colors (red, blue, green) might be best suited for sites that appeal to children. Black backgrounds can give a "hard edge" to a site or make it seem "gloomy" or counterculture.

## Protect your privacy and reputation online:

- Don't disclose private information about yourself or others.
- Don't give out home phone numbers or home addresses.
- What you link to helps define who you are and what your organization represents.
- Avoid exaggerated claims if promoting a product or organization.
- Cite sources of information.
- Observe copyright rules.

**Reference: Education and Technology Resources by Virginia Montecino**

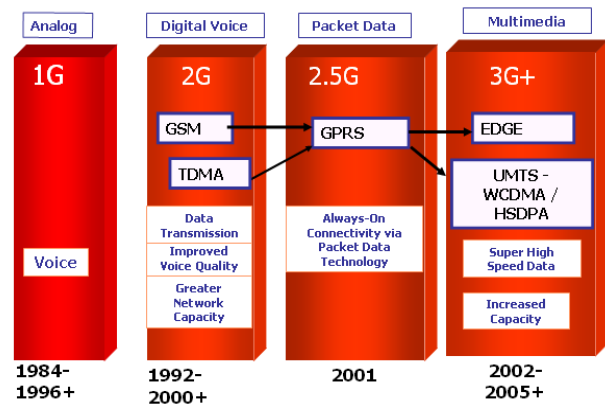
## Mobile Computing

S. K. Nasheeruddin & D. Vinod  
1/3 MCA II Sem

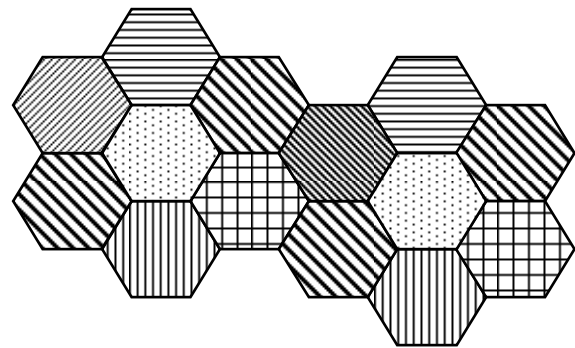
Mobile, any time, anywhere and any person computing using small portable devices and wireless communication networks is called Mobile computing. It allows transmission of data, via a computer, PDA, Smart phone, Mobile phone without having to be connected to a fixed physical link.

The term is evolved in modern usage such that it requires that the mobile computing activity be connected wirelessly to and through the Internet or to and through a private network. This connection ties the mobile device to centrally located information or application software through the use of battery powered, portable, and wireless computing and communication devices. This includes devices like laptops with wireless LAN or wireless WAN technology, smart mobile phones, wearable computers and Personal Digital Assistants (PDAs) with Bluetooth or IRDA interfaces.

## Mobile Technology Evolution:



**Analog Mobile Phone Service (AMPS):** - Geographic areas are subdivided into smaller areas, which are commonly known as "cells". Each cell has its own antenna that is set to operate at distinct transmission frequencies



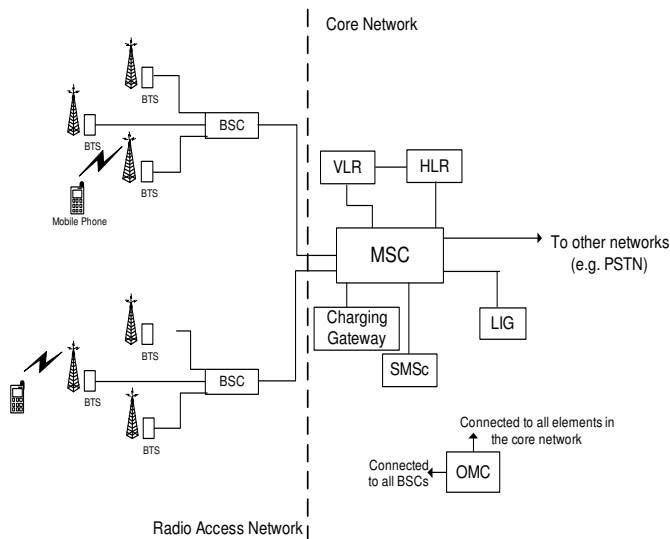
- Communications occur at a set frequency in each direction
- AMPS is still widely used today

## Global System for Mobile Communications (GSM):

- GSM developed in Europe in 1980s and became an international standard 13 years later

- Over 250 GSM Networks are presently operating in 110 countries
- Data rates: 9.6Kbps to 14.4Kbps
- The functional architecture of GSM can be broadly divided into:
  - Mobile Station
  - Base Station
  - Network Subsystem

## General Architecture of a GSM Network



### Applications of Mobile Computing:

In many fields of work, the ability to keep on the move is vital in order to utilize time efficiently. Efficient utilization of resources can mean substantial savings in transportation costs and other non-quantifiable costs such as increased customer attention, impact of on site maintenance and improved intercommunication within the business.

- For Estate Agents
- Emergency Services
- In courts
- In companies
- Stock Information Collation/Control
- Credit Card Verification
- Taxi/Truck Dispatch
- Electronic Mail/Paging

## Genetic Algorithms

N. Naga Raju & Md. Munwar Basha  
2/3 MCA II Sem

Genetic algorithms are randomized search and optimization techniques guided by the principles of evolution and natural genetics, having a large amount of implicit parallelism. GAs perform search in complex, large and multimodal landscapes, and provide near-optimal solutions for fitness function of an optimization problem. GA is useful when a sub-optimal solution is sufficient. GA has self-evolving nature and likeliness to reach a near optimal condition regardless of dimensionality.

### • Outline of the Basic Genetic Algorithm

1. [Start] Generate random population of  $n$  chromosomes (suitable solutions for the problem)
2. [Fitness] Evaluate the fitness  $f(x)$  of each chromosome  $x$  in the population
3. [New population] Create a new population by repeating following steps until the new population is complete
  - 3.1. [Selection] Select two parent chromosomes from a population according to their fitness (the better fitness, the bigger chance to be selected)
  - 3.2. [Crossover] With a crossover probability cross over the parents to form a new offspring (children). If no crossover was performed, offspring is an exact copy of parents.
  - 3.3. [Mutation] With a mutation probability mutate new offspring at each locus (position in chromosome).
  - 3.4. [Accepting] Place new offspring in a new population
4. [Replace] Use new generated population for a further run of algorithm
5. [Test] If the end condition is satisfied, stop, and return the best solution in current population
6. [Loop] Go to step 2

To obtain solutions, the problem space is initially encoded into a relevant format, suitable for evolutionary computation. The parameters of the search space are encoded in the form known as *chromosomes* and each indivisible parameter in a chromosome is called a *gene*. A collection of such chromosomes is called a *population*. Initially, a random population is created, which represents different points in the search space. A *fitness* function is associated with each chromosome that represents the degree of *goodness* of the chromosome. Based on the principle of survival of the fittest, a few of the chromosomes are reproduced and each is assigned a number of copies that go into the mating pool. Biologically inspired operators like *crossover* and *mutation* are applied on these chromosomes to yield a new generation of chromosomes. The process of reproduction, crossover and mutation continues for a fixed number of generations or till a termination condition is satisfied.

**Reproduction:-** Chromosomes from the current generation are copied into a mating pool according to the corresponding fitness values. Chromosomes with higher fitness value will likely be represented in higher numbers in the mating pool using Roulette-wheel sampling.

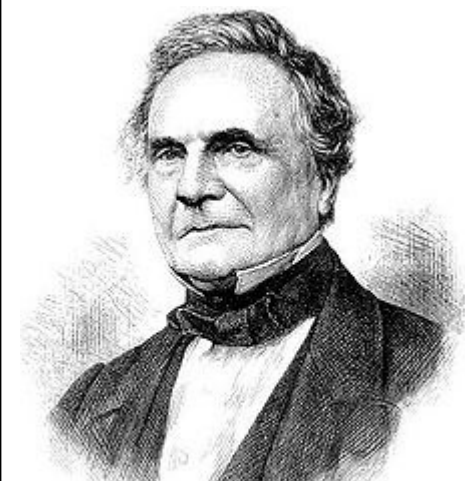
**Crossover:** - Crossover is a probabilistic process that exchanges information between two parent chromosomes in the mating pool for generating two child chromosomes, so that proper settings of parameters can be grouped together into a single child chromosome.

**Mutation:** - Mutation operation randomly picks up a gene in the generated offspring chromosomes and changes its value properly in order to escape from a local optimal to search for a global optimal.

**Population Replacement:** - It is possible that the offspring become weaker than the parents as some good genes in the parents may be lost. Therefore, elitism strategy is used by copying the best or best few parents into the next generation to replace the worst children.

**Termination criterion:** - The processes of fitness computation, selection, crossover, and mutation are executed for a maximum number of iterations. The best chromosome seen up to the last generation provides the solution to the clustering problem.

### Father of Computers – Charles Babbage



Charles Babbage was an English mathematician, philosopher, inventor and mechanical engineer who originated the concept of a programmable computer. His date of birth is 26 December 1791. He is known as "Father of Computing" for his contributions to the basic design of the computer through his Analytical machine. His previous Difference Engine was a special purpose device intended for the production of tables.

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