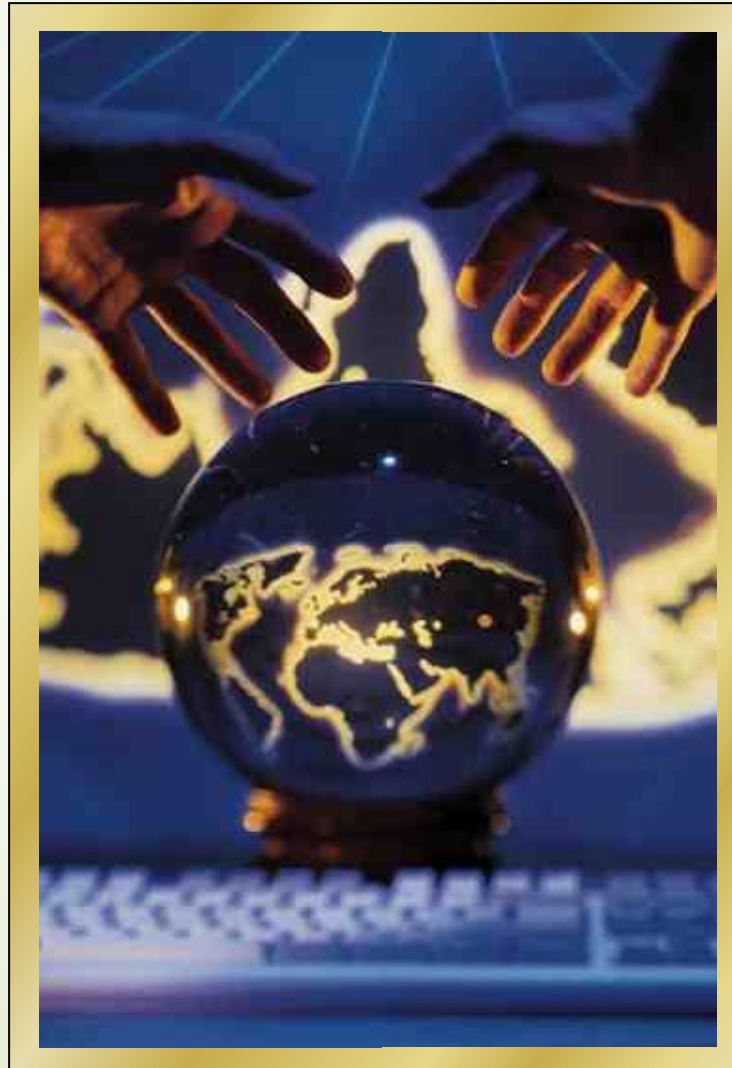# SKAA 4412
Civil Engineering Information System

Baharin Mesir
School of Civil Engineering

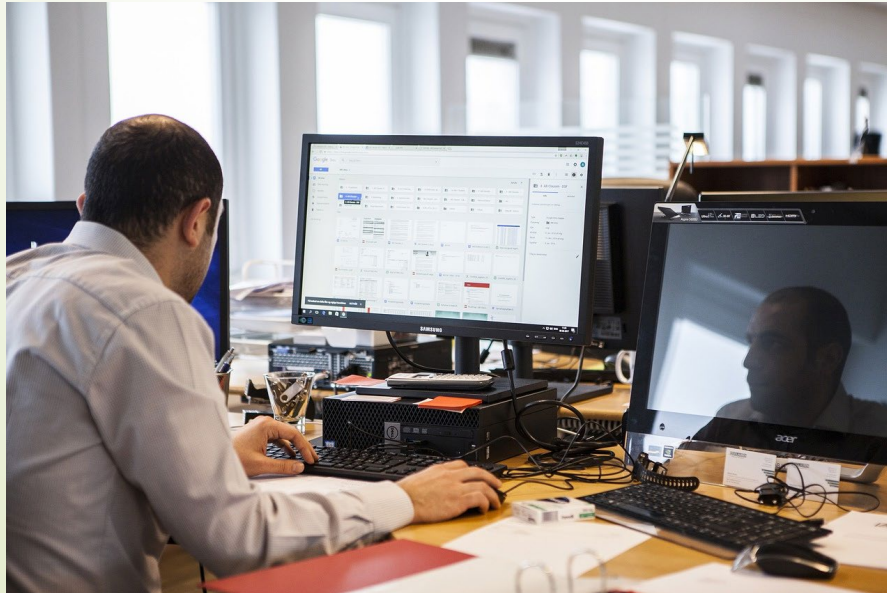# Introduction to Information Technology (IT)

Changing Times. . .

What is ICT?

Information & Communication Technology is the integration of *computing and communication technology* and *information processing*.

Technology Revolution

- How personal computers affect us today:
  - At work (mobile computing)
  - At home (Internet)
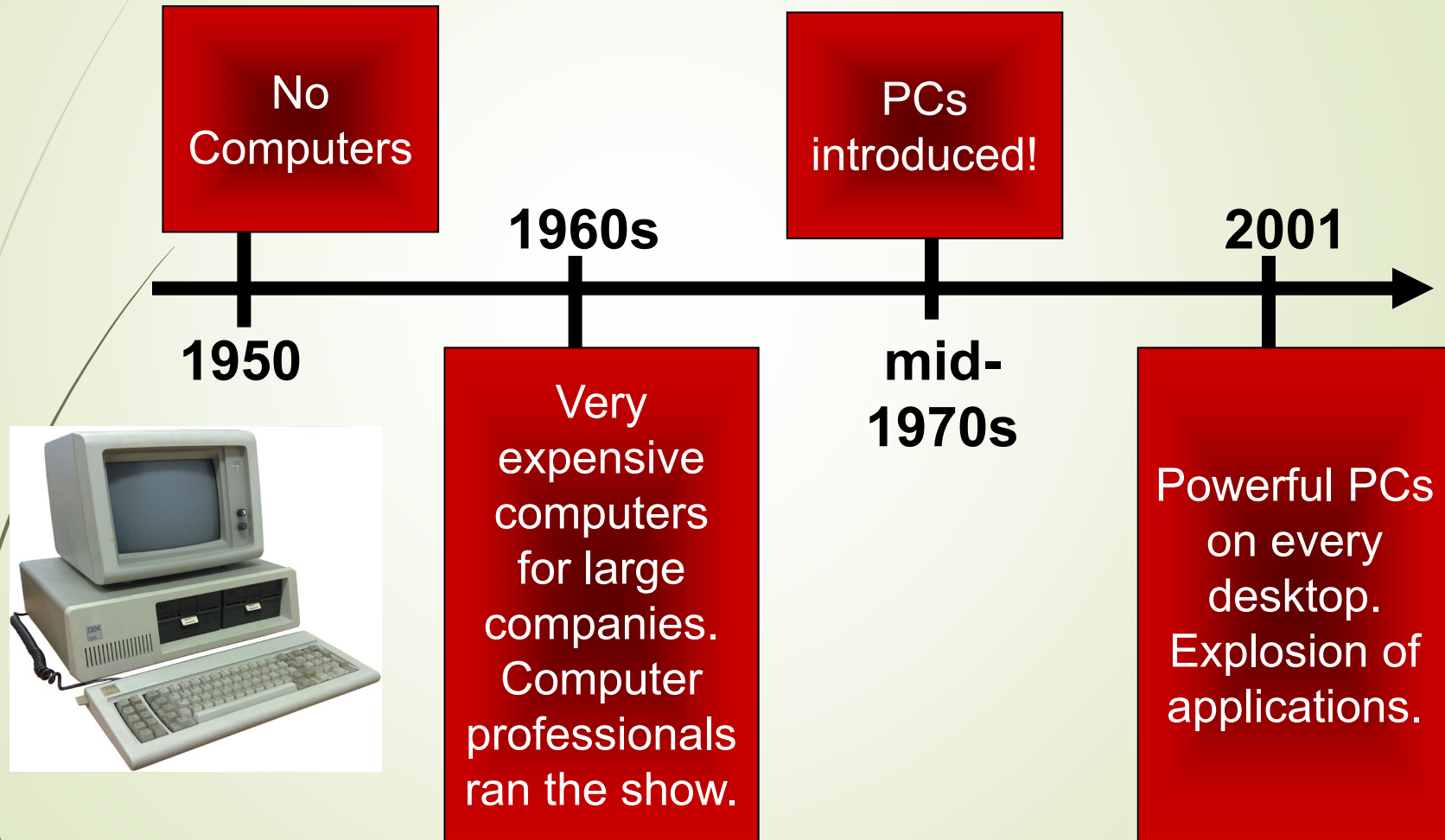 - At play (e-mail, chat, newsgroups, games)

Technology Revolution

- Virtual house tours
- On-line voting
- Telemedicine
- Cashless society
- E-commerce

Information Superhighway

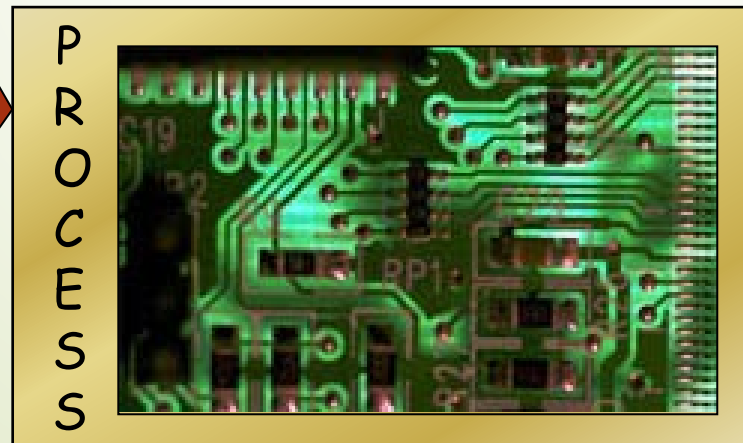# Evolution of Computing

No Computers

1950

1960s

Very expensive computers for large companies. Computer professionals ran the show.

PCs introduced!

mid-1970s

2001

Powerful PCs on every desktop. Explosion of applications.

Online resources

- **Video: What is IT? -
https://www.coursera.org/lecture/technical-support-fundamentals/what-is-it-pjqmU**

- **Video: Introduction to IT -
https://www.youtube.com/watch?v=bjgCxWHd1bs**

- **Computer hardware and software -
https://www.youtube.com/watch?v=8UyJMiYqvs4**

Data vs. Information

Knowledge

An American was travelling in Afghanistan when his Mercedes jammed. He did everything, but it didn't start. Finally, a mechanic came from the hills riding a donkey. He opened the bonnet and hit the cylinder head six times. He asked the American to start it and it did. The American asked, "How much?" The mechanic said, "$100." On being asked to itemise it, the mechanic said, 10 cent for hitting six times and $99.90 for knowing where to hit." The American paid sheepishly.
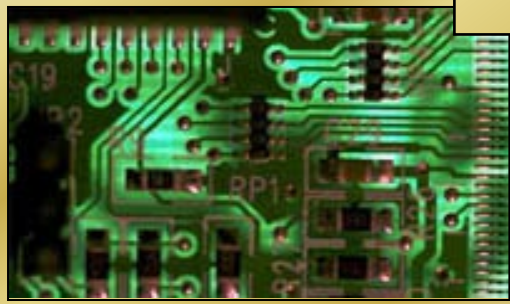
Hardware Basics

Computer System Components

INPUT
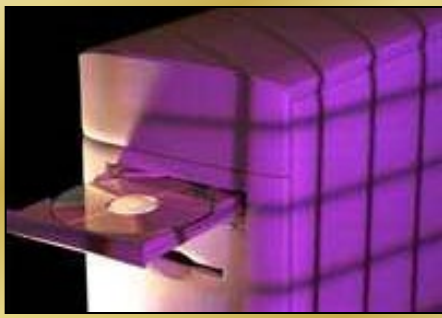
PROCESS

STORAGE

OUTPUT

Peripherals

RAM

Chips

Hardcopy

Softcopy

Software Basics

➡ **Programs**

System Software

Manage, maintain & control system resources
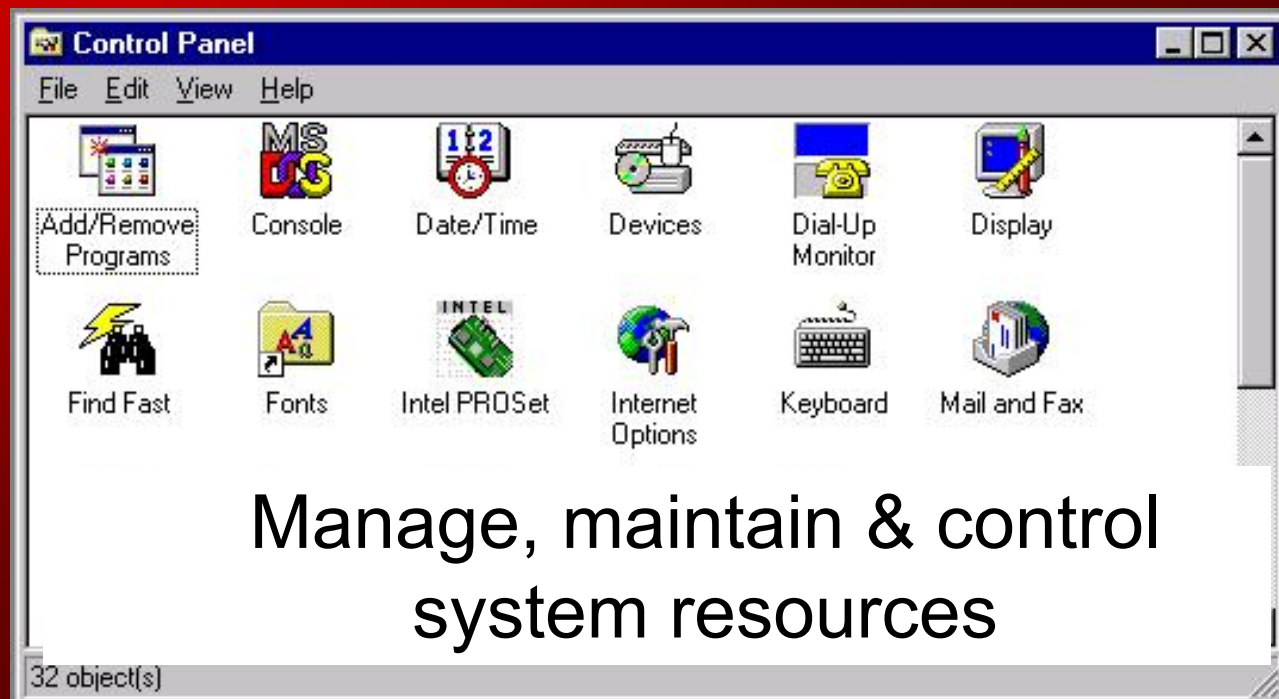
Computer Systems Basics

Handheld Computers

Notebook PCs

Desktop PCs

Thin Client Computers

Workstations

Server Computers

Supercomputers

Computing Power is the key!

Notebook PCs (Laptops)

Desktop PCs

- **System unit**
  - **Tower**
  - **Footprint**
- **Multimedia applications**

- Configuration
  - Motherboard
  - Keyboard
  - Point-and-draw device
  - Monitor
  - Printer
  - Hard disk
  - Floppy disk drive
  - Optical disk drive
  - Microphone
  - Speakers

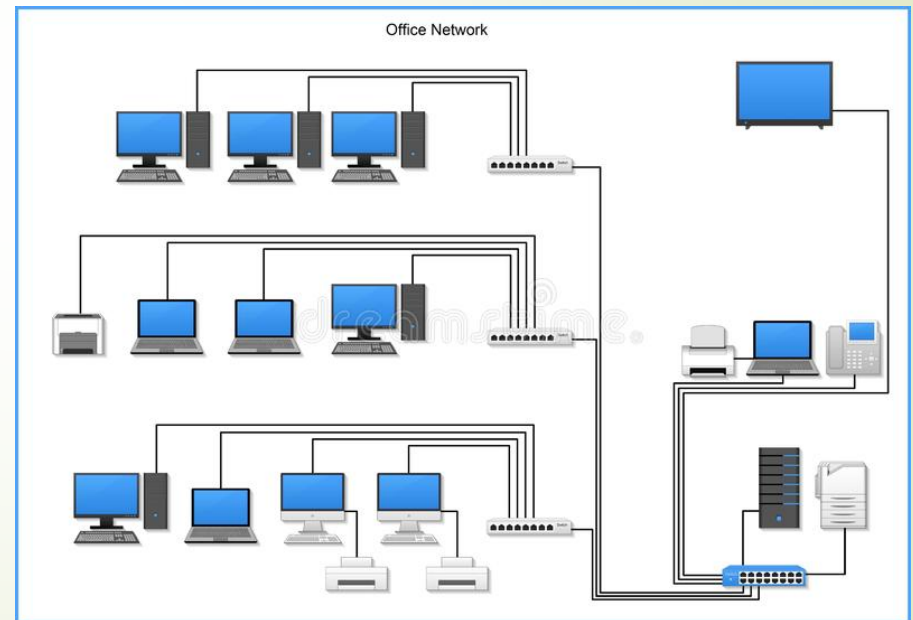# Handheld Computers

- **Palmtop PC**
- **Personal digital assistants (PDAs)**
- **Pen-based computers (UPS)**
- **Connected organizers**
- **Personal communicators**
- **Mobile phones**
- **Smart phones**

How Thin Clients Differ From PCs

- Smaller processor
- Less RAM
- No hard disk
- Less expensive
- Depends on server

Office Network

Workstations

"Souped-up PCs" for "Power Users"

CAD

Client/Server Computing

- **Server**
  - **From PC to Supercomputer**
  - **Data storage and applications software**
- **Client**
  - **PC, workstation or thin client**
  - **Requests processing or support from server**
- **Applications Software**
- **Proxy server computer**

Supercomputers

- **Processor-bound applications**
- **100 times faster than typical server**
- **Used for**
  - Scientific simulations and forecasting
  - Medicine
  - Advanced graphics

Why Use Computers?

- Speed
- Accuracy
- Consistency
- Reliability
- Communications
- Memory

Other references

- **Introduction to IT -**
  https://www.lifewire.com/introduction-information-technology-817815

- **IT Courses** -
  https://www.odysseyware.com/courses/introduction-information-technology

- **Information Technology** -
  https://www.coursera.org/lecture/technical-support-fundamentals/course-introduction-YgIkl

- **Information Technology -**
  https://www.pearson.com/us/higher-education/professional---career/information-technology.html

Introduction to IT

The End