CN208
Introductory Computer Programming

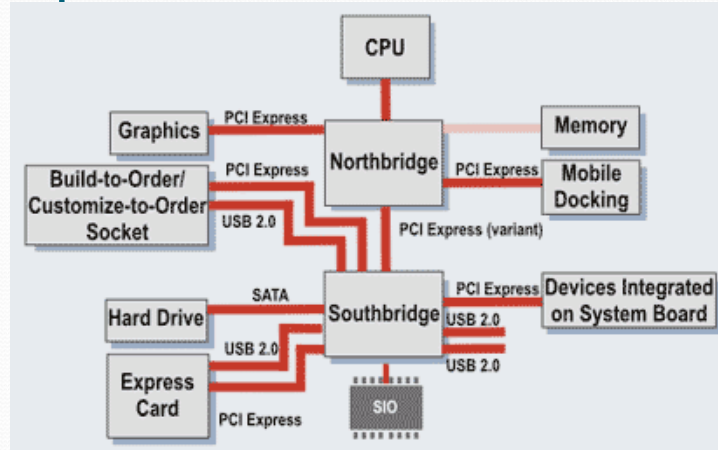## Week 2:- Computer Concept and History

By

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Computer Concept and History

- **Computer Architecture**
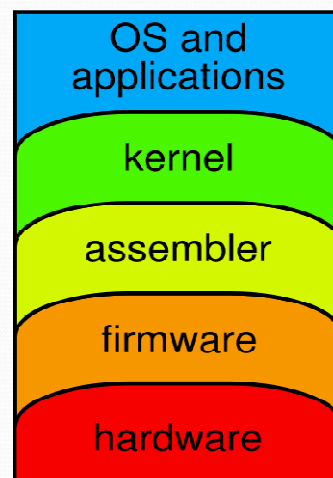- Computer History
- Programming Languages

Computer Architecture

- Hardware Architecture

Computer Architecture

- Software Architecture
  - Programming which we study is based on OS & Applications layer.

OS and applications

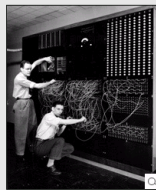kernel

assembler

firmware

hardware

Computer Concept and History

- Computer Architecture
- **Computer History**
- Programming Languages

Computer History

1944

Harvard Mark-I in use, 1944

Harvard Mark-1 is completed. Conceived by Harvard professor Howard Aiken, and designed and built by IBM, the Harvard Mark-1 was a room-sized, relay-based calculator. The machine had a fifty-foot long camshaft that synchronized the machine's thousands of component parts. The Mark-1 was used to produce mathematical tables but was soon superseded by stored program computers.

The Colossus at Work At Bletchley Park

The first Colossus is operational at Bletchley Park. Designed by British engineer Tommy Flowers, the Colossus was designed to break the complex Lorenz ciphers used by the Nazis during WWII. A total of ten Colossi were delivered to Bletchley, each using 1,500 vacuum tubes and a series of pulleys transported continuous rolls of punched paper tape containing possible solutions to a particular code. Colossus reduced the time to break Lorenz messages from weeks to hours. The machine's existence was not made public until the 1970s

Computer History

1964

IBM System/360

- IBM announced the System/360, a family of six mutually compatible computers and 40 peripherals that could work together. The initial investment of $5 billion was quickly returned as orders for the system climbed to 1,000 per month within two years. At the time IBM released the System/360, the company was making a transition from discrete transistors to integrated circuits, and its major source of revenue moved from punched-card equipment to electronic computer systems.

CDC 6600

- CDC´s 6600 supercomputer, designed by Seymour Cray, performed up to 3 million instructions per second — a processing speed three times faster than that of its closest competitor, the IBM Stretch. The 6600 retained the distinction of being the fastest computer in the world until surpassed by its successor, the CDC 7600, in 1968. Part of the speed came from the computer´s design, which had 10 small computers, known as peripheral processors, funneling data to a large central processing unit.

Computer History

1982

- The Cray XMP, first produced in this year, almost doubled the operating speed of competing machines with a parallel processing system that ran at 420 million floating-point operations per second, or megaflops. Arranging two Crays to work together on different parts of the same problem achieved the faster speed. Defense and scientific research institutes also heavily used Crays.

Early Publicity still for the Commodore 64

- Commodore introduces the Commodore 64. The C64, as it was better known, sold for $595, came with 64KB of RAM and featured impressive graphics. Thousands of software titles were released over the lifespan of the C64. By the time the C64 was discontinued in 1993, it had sold more than 22 million units and is recognized by the 2006 Guinness Book of World Records as the greatest selling single computer model of all time.

Computer History

Connection Machine

reprogramming rather than rewiring.

The machine´s system of connections and switches let processors broadcast information and requests for help to other processors in a simulation of brainlike associative recall. Using this system, the machine could work faster than any other at the time on a problem that could be parceled out among the many processors.

- IBM and MIPS released the first RISC-based workstations, the PC/RT and R2000-based systems. Reduced instruction set computers grew out of the observation that the simplest 20 percent of a computer´s instruction set does 80 percent of the work, including most base operations such as add, load from memory, and store in memory.

The IBM PC-RT had 1 megabyte of RAM, a 1.2-megabyte floppy disk drive, and a 40-megabyte hard drive. It performed 2 million instructions per second, but other RISC-based computers worked significantly faster.


Computer History

1987

IBM PS/2

- IBM introduced its PS/2 machines, which made the 3 1/2-inch floppy disk drive and video graphics array standard for IBM computers. The first IBMs to include Intel´s 80386 chip, the company had shipped more than 1 million units by the end of the year. IBM released a new operating system, OS/2, at the same time, allowing the use of a mouse with IBMs for the first time.

1988
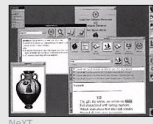
NeXT

- Apple cofounder Steve Jobs, who left Apple to form his own company, unveiled the NeXT. The computer he created failed but was recognized as an important innovation. At a base price of $6,500, the NeXT ran too slowly to be popular.

The significance of the NeXT rested in its place as the first personal computer to incorporate a drive for an optical storage disk, a built-in digital signal processor that allowed voice recognition, and object-oriented languages to simplify programming. The NeXT offered Motorola 68030 microprocessors, 8 megabytes of RAM, and a 256-megabyte read/write optical disk storage.

Computer Concept and History

- Computer Architecture
- Computer History
- **Programming Languages**

Programming Languages

- **JAVA**

```
class myfirstjavaprog
{
    public static void main(String args[])
    {
        System.out.println("Hello World!");
    }
}
```

Programming Languages

- **Visual Basic**

```
' Allow easy reference to the System namespace classes.
Imports System

' This module houses the application's entry point.
Public Module modmain
    ' Main is the application's entry point.
    Sub Main()
      ' Write text to the console.
      Console.WriteLine ("Hello World!")
    End Sub
End Module
```

Programming Languages

- **C Language**

```
/* Hello World program */
#include<stdio.h> main()
{
    printf("Hello World");
}
```

Programming Languages

- **MATLAB**

<<hello_world.m>>=
fprintf('Hello world!\n');

Programming Languages

- **MATLAB**

% Name: hellowor.m
% Purpose: Say "Hello World!" in two different ways
%
% Do it the good ol' fashioned way...command window
disp('Hello World!');
% Do it the new hip GUI way...with a message box
msgbox('Hello World!','Hello World!');

Sample Run
>> hellowor
Hello World!
>>

Reference

- http://en.wikipedia.org/wiki/Image:Computer_abstraction_layers.svg
- http://i.dell.com/images/global/topics/vectors/2004_pcie_012.gif

Q & A