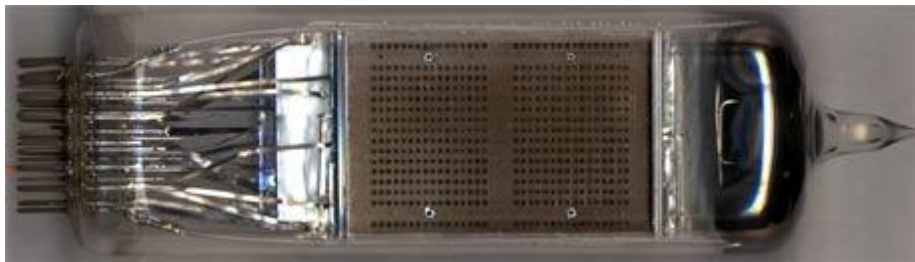# Homework – 13/12/2012

History of storing data:

The oldest form of data storage is from 1725 where a man called Basile Buchon used perforated paper loops to store patterns that were to be used on cloth. Then on the 23rd of September 1884 Herman Hollerith invented a punch card that stored settings for different machines, these punch cards were used for about 100 years. (punch card shown below.)

In 1946 RCA developed the Selectron tube it was a form of the computer memory and the largest selectron tube, it could store 4069 bytes.

In the 1950s magnetic tapes were developed. IBM was the first company to store data on a magnetic tape and these tapes could store as much data as 10,000 punch cards. It was the most popular way of storing computer data till the mid 1980s.

The compact cassette was pretty much a small magnetic tape; it was introduced by Phillips in 1963 but only became popular in the 1970s. 4500 compact cassettes would be the equivalent of 1 DVD.

The magnetic drum was a long drum that spun 12,500 revolutions per minute. IT was used to give the IBM 650 computer 10,000 characters of main memory.

In 1969 floppy disks were introduced. The first generation of floppy disks could only store 80KB of data, and then in 1973 a re-writable floppy disk that could store 256KB of data came out. Then again in the late 1990s a new floppy disk that had a 3 inch disk could store 250MB of data.

In 1956 IBM made the world's first hard drive, it was called the 305 RAMAC. The computer could store 4.4MB and the data was stored on 24inch magnetic disks. More than 1000 systems were built and production ended in 1961.

The hard drive is still being developed today. The Hitachi Deskstar 7K500 is the first disk drive that you can store 500GB of data on (120,000 times more that the IBM 305 RAMAC).

In 1958 Laserdisc technology was invented but in 1972 the first videodisc was demonstrated to the public, 6 years later it was available on the market. It wasn't possible to store data yet but it could store video and image data with higher quality than the VHS.

The compact disc originates from the laser disc but its smaller in size and stores less data. It was developed in a co-operation between SONY and Phillips in 1979 and the Compact disc was available in the market by 1982. A CD today can store about 700MB of data.

The DVD aka Digital versatile disc is a CD that uses a different type of laser technology; The DVD's laser's wavelength uses 780nm and uses infrared light whereas a standard CD uses 625nm to 650nm red light. A dual layer DVD can store 8.5 GB of data.

Similarities between a computer and a Calculator:

- Both contain microprocessors that have a sequencer, registers, arithmetic logic unit and an instruction pipeline.
- Both contain memory devices (RAM, ROM)
- Both have inputs and outputs (keyboards, displays)
- Both of them are able to perform mathematical calculations.
- Both contain firmware.
- Some calculators are programmable like most computers.
- All calculators and most computers have a man to machine interface.

Differences between a computer and a Calculator:

- A computer can be programmed but most calculators cannot.
- A calculator has a basic function a computer has many functions.
- You cannot execute programs on a calculator but you can on a computer.
- A computer can store large amount of data in it memory and reproduce that data whenever it is needed, a calculator cannot perform this.
- Computers are bigger than calculators.

Similarities of a computer and human:

- Both have physical memory.
- Both have inputs and outputs.
- Both process things.
- Both can think quickly.

Differences of a computer and a human:

- A computer processes things one at a time whereas humans process everything at once.
- A computer can extend it memory by installing higher capacity hard drives.
- The computers way of out putting information is by displaying it on a screen or printing of documents whereas humans write out information.
- Most computers require a human to operate it whereas humans operate themselves.
- A human can create thoughts whereas computers need ready thought ideas.
- A human need rest a computer can carry on working for a long period of time.
- A computer requires power to be supplied to it.
- A human speaks English, Spanish, French, Sinhala .etc whereas a computers language is binary.

Why is Robotics still not very effective?

Robots are not very effective because they are not reliable and need constant monitoring to see if they are working okay. We use robots in car manufacturing and repetitive things that humans can't be bothered to do. Also robots are very expensive and require a human to program the robot to do whatever it has to do. Intelligent robots are hard to program and take years to develop. Robots are used to do dangerous things such as bomb disposal because it means the bomb diffuser can safely diffuse the bomb without putting any lives at risk. Also robots can easily break down or be unresponsive. Robots aren't really important because humans can already do most things by themselves or if they can't they use machines therefore a robot is not needed. If there were too many robots taking over human jobs then there will be higher unemployment.

What are the useful features of mobile phones over normal computers?

Mobile phones are always available where ever you go, whenever you need it. It's always in your pocket. Smartphones always have connectivity where ever you are (GSM, GPRS, EDGE, 3G, 4G and now even LTE) whereas a computer requires you to either connect via Wi-Fi (Wireless fidelity) or Ethernet cable. Many Smartphones can act like a Wi-Fi hotspot and then pass its connectivity to a laptop or tablet. Smartphones are portable whereas desktop PCs are stationary at one place and you cannot use it on the go. A Smartphone can send and receive phone calls but computers can do that too but they require a microphone and an application such as Skype (which uses VoiceIP) and not to forget internet connectivity. A Smartphone can text as well as phone calls it faster than emails and as good as instant messengers but text messages don't require you to boot up a computer and then open a program to send your messages and phone has it all there already, also you can message anyone where ever you want.