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### **Processing Modes**

Data must be processed by the most suitable means. It can be transferred to one or more computer system for more processing, for output or for storage.

#### **Uniprocessor**

Uniprocessor designs have always assumed worst-case operating conditions to set the operating clock and hence performance. However, much more performance can be obtained under typical operating condition through experimentation; but such increased frequency operation is subject to the possibility of system failure and hence data loss/corruption. Further, mobile CPU's such as those in cell phones/internet browsers do not adapt to their current surroundings (varying temperature conditions, etc.) so as to increase or decrease operating frequency to maximize performance and/or allow operation under extreme conditions.

We present a digital hardware design technique realizing adaptive clock-frequency performance-enhancing digital hardware; the technique can be tuned to approximate performance maximization. The cost is low, and the design is straightforward. Experiments are presented evaluating such a design in a pipelined uniprocessor realized in a Field able Gate Array (FPGA).

#### **Multiprocessors**

A shared-memory multiprocessor is a computer system in which two or more CPUs share full access to a common RAM. A program running on any of the CPUs sees a normal (usually paged) virtual address space. The only unusual property this system has is that the CPU can write some value into a memory word and then read the word back and get a different value (because another CPU has changed it). When organized correctly, this property forms the basis of interprocessor communication: one CPU writes some data into memory and another one reads the data out. For the most part, multiprocessor operating systems are just regular operating systems. They handle system calls, do memory management, provide a file system, and manage I/O devices. Nevertheless, there are some areas in which they have unique features. These include process

synchronization, resource management, and scheduling. Below we will first take a brief look at multiprocessor hardware and then move on to these operating systems issues.

Computers are programmed to process data in different ways. Just like humans they can process shortest job first-SJF, First Come First Serve-FCFS or they can just Round Robin giving a time span, important/emergency jobs first-real time. Computers can also multitask or multi-programming

### **Batch Processing**

To save computational time, before the widespread use of distributed systems architecture, or even after it, stand-alone computer systems apply batch processing techniques. This is particularly useful in financial applications or where data was secure such as medical records.

Batch processing completes a range of data processes as a batch, by simplifying single commands to provide actions to multiple data sets. This is a little like the comparison of a computer spreadsheet to a calculator in some ways. A calculation can be applied with one function, that is one step, to a whole column or series of columns, giving multiple results from one action. The same concept is achieved in batch processing for data. A series of actions or results can be achieved by applying a function to a whole series of data. In this way, the computer processing time is far less.

Batch processing can complete a queue of tasks without human intervention, and data systems may program priorities to certain functions or set times when batch processing can be completed.

Banks typically use this process to execut.

### **Offline data entry**

Offline Data Entry is a Perfect match for your Data Entry Needs. Today many global businesses prefer outsourcing their Offline Data Entry Projects .Data Entry India is equipped to handle from very large volumes of Offline Data Entry projects at the best possible price. Our qualified teams of skilled data entry personnel are dedicated to deliver accurate offline data entry work to our worldwide clients at the decided turnaround time .We have the expertise to handle any kind of offline data entry projects.

Offline data entry is the work of entering a specific type of data into computer or any other electronic device using specific software. This work is done by expert data entry operators who have complete knowledge regarding data entry.

When someone wants to transform or change the format of any desired information and data, data entry work is performed and the information can be transcribed in the desired format. These formats generally include handwritten documents, spreadsheets, sequencing of numbers, computer codes, and even names and addresses. Sometimes in conversion of important information there takes place the need for highly precise skills. So, the data entry work is outsourced to experts so as to get better results.

### **Online Processing**

This data processing technique is derived from Automatic data processing. This technique is now known as immediate or irregular access handling. Under this technique, the activity by the framework is prepared at the time of operation/processing. This can be viewed easily with continuous preparing of data sets. This processing method highlights the fast contribution of exchange of data and connects directly with the databases.

### **Online data entry**

Online data entry refers to the compilation of data from internet sources and compiling it in a format suitable for online storage and accessibility. It comprises a number of processes, such as data entry, data mining, data extraction, typing, and web research, which are used to find relevant information online and arrange them in an orderly manner. The data and information are converted into a digital format and compiled for use on computers. A database is created to store and access them from any location. In many cases, latest IT technology is used to encode the useful data for machine interpretation.

### **Types of Online Data Entry**

- Website research and data compilation
- Data mining from online sources and entry to database
- Ebook, catalogue, and online image data entry
- OCR and Data capture from online sources
- Ecommerce website product and service data entry
- Captcha data entry
- Compilation and entry of online business card details
- Online image capturing and database entry
- Online data entry from questionnaires, forms, and surveys
- Mailing list creation and labeling
- Encrypted data compilation

## **Real Time Data Processing**

For commercial uses, many large data processing applications require real-time processing. That is they need to get results from data exactly as it happens. One application of this that most of us can identify with is tracking stock market and currency trends. The data needs to be updated immediately since investors buy in real time and prices update by the minute. Data on airline schedules and ticketing, and GPS tracking applications in transport services have similar needs for real-time updates.

The most common technology used in real time processing is stream processing. The data analytics are drawn directly from the stream, that is, at the source. Where data is used to draw conclusions without uploading and transforming, the process is much quicker.

Data virtualization techniques are another important development in real-time data processing, where the data remains in its source form, the only information is pulled for the data processing. The beauty of data virtualization is that where transformation is not necessary, so the error is reduced.

Data virtualization and stream processing mean that data analytics can be drawn in real time much quicker, benefiting many technical and financial applications, reducing processing times and errors.

## **Multi Processing**

This is the most commonly used data processing technique. However, it is used all over the globe where we have the computer-based setups for Data capture and processing. As the name suggests – Multiprocessing is not bound to one single CPU, With this, it has a collection of several CPU's. As the various set of processing devices are included in this method, therefore the outcome efficiency is very useful. The jobs are broken into frames and then sent to the multiprocessors for processing. The result obtained is expected to be in less time and the output is increased. The additional benefit is every processing unit is independent thus failure of any will not impact the working of other processing units.

## **Time Sharing**

This kind of Data processing is entirely based on Time. In this, one unit of processing data is used by several users. Each user is allocated with the set timings on which they need to work on the same CPU/processing Unit. Intervals are divided into segments and thus to users so there is no collapse of timings which makes it as a multi-access system. This processing technique is also widely used and mostly entertained in startups.

## **Electronic Mail**

Email (electronic mail) is a way to send and receive messages across the Internet. It's similar to traditional mail, but it also has some key differences. To get a better idea of what email is all about, take a look at the infographic below and consider how you might benefit from its use.

Email advantages

- Productivity tools: Email is usually packaged with a calendar, address book, instant messaging, and more for convenience and productivity.
- Access to web services: If you want to sign up for an account like Facebook or order products from services like Amazon, you will need an email address so you can be safely identified and contacted.
- Easy mail management: Email service providers have tools that allow you to file, label, prioritize, find, group, and filter your emails for easy management. You can even easily control spam, or junk email.
- Privacy: Your email is delivered to your own personal and private account with a password required to access and view emails.
- Communication with multiple people: You can send an email to multiple people at once, giving you the option to include as few as or as many people as you want in a conversation.
- Accessible anywhere at any time: You don't have to be at home to get your mail. You can access it from any computer or mobile device that has an Internet connection.

## **Understanding email addresses**

To receive emails, you will need an email account and an email address. Also, if you want to send emails to other people, you will need to obtain their email addresses. It's important to learn how to write email addresses correctly because if you do not enter them exactly right, your emails will not be delivered or might be delivered to the wrong person.

Email addresses are always written in a standard format that includes a user name, the @ (at) symbol, and the email provider's domain.

The user name is the name you choose to identify yourself.

## **Tele text**

Tele text is a television information retrieval service created in the United Kingdom in the early 1970's by the Philips Lead Designer for VDUs, John Adams. Tele text is a means of sending text and diagrams to a properly equipped television screen by use of one of the vertical blanking interval lines that together form the dark band dividing pictures horizontally on the television screen. It offers a range

of text-based information, typically including news, weather and TV schedules. Subtitle information is also transmitted within the television signal.

The first test transmissions were made by the BBC in 1973, known as Ceefax. After adoption in the UK the standards became international as the European Tele text standards and as the World System Tele text. The World Wide Web began to take over some of the functions of tele text from the late 1990s, and many broadcasters have ceased broadcast of tele text -CNN in 2006 and the BBC in 2012. The decline of tele text has been hastened by the introduction of digital television, though an aspects of tele text continues in closed captioning.

### **Tele conferencing**

A teleconference is a telephone meeting among two or more participants involving technology more sophisticated than a simple two-way phone connection. At its simplest, a teleconference can be an audio conference with one or both ends of the conference sharing a speaker phone. With considerably more equipment and special arrangements, a teleconference can be a conference, called a videoconference, in which the participants can see still or motion video images of each other. Because of the high bandwidth of video and the opportunity for larger and multiple display screens, a videoconference requires special telecommunication arrangements and a special room at each end.

As equipment and high-bandwidth cabling become more commonplace, it's possible that videoconferences can be held from your own computer or even in a mobile setting. One of the special projects of Internet is to explore the possibility of having teleconferences in which all participants actually appear to be in the same room together. Today's audio teleconferences are sometimes arranged over dial-up phone lines using bridging services that provide the necessary equipment for the call.