# PARALLEL COMPUTING SYSTEMS

A parallel computing system is a computer with more than one processor for parallel processing. In the past, each processor of a multiprocessing system always came in **its** own processor packaging, but recently introduced multicore processors contain multiple logical processors in a single package.

There are many different kinds of parallel computers. **They** are distinguished by the kind of interconnection between processors (known as "processing elements" or PEs) and memory.

One major way to classify parallel computers is based on **their** memory architectures. Shared memory parallel computers have multiple processors accessing all available memory as global address space. **They** can be further divided into two main classes based on memory access times: Uniform memory access (UMA), **in which** access times to all parts of memory are equal, or Non-Uniform memory access (NUMA), in which they are not. Distributed memory parallel computers also have multiple processors, but each of the processors can only access its own local memory; no global memory address space exists across **them**.

***EJERCICIO 1***

**Traduzca las frases nominales subrayadas en el texto.**

a. .............................................................................................................................................................

b. .............................................................................................................................................................

c. .............................................................................................................................................................

d. .............................................................................................................................................................

e. .............................................................................................................................................................

f. ..............................................................................................................................................................

g. ..............................................................................................................................................................

h. ...............................................................................................................................................................

***EJERCICIO 2***

**Indique a qué refieren las siguientes palabras resaltadas en el texto. Transcriba su antecedente.**

**its**  (L. 2) ..............................................

**They**  (L. 4) ..............................................

**their**  (L. 6) ..............................................

**They** (L. 8) ..............................................

**in which**  (L. 9) ..............................................

**them** (L. 12) ..............................................

***EJERCICIO 3***

**Responda las siguientes preguntas en español.**

a. How have parallel processors evolved?

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1. How are parallel computers classified?

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***EJERCICIO 4***

**Traduzca el siguiente texto.**

Parallel computing systems can also be categorized by the numbers of processors in them. Systems with thousands of such processors are known as massively parallel. Subsequently there are what are referred to as "Large scale" Vs "Small scale" parallel processors. This depends on the size of the processor, e.g. a PC based parallel system would generally be considered a small scale system.

Parallel processor machines are also divided into symmetric and asymmetric multiprocessors, depending on whether all the processors are the same or not.

A variety of architectures have been developed for parallel processing. For example a Ring architecture has processors linked by a ring structure. Other architectures include Hypercubes, Fat trees, systolic arrays, and so on**.**

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