# Flynn’s Classification Of Computer Architectures

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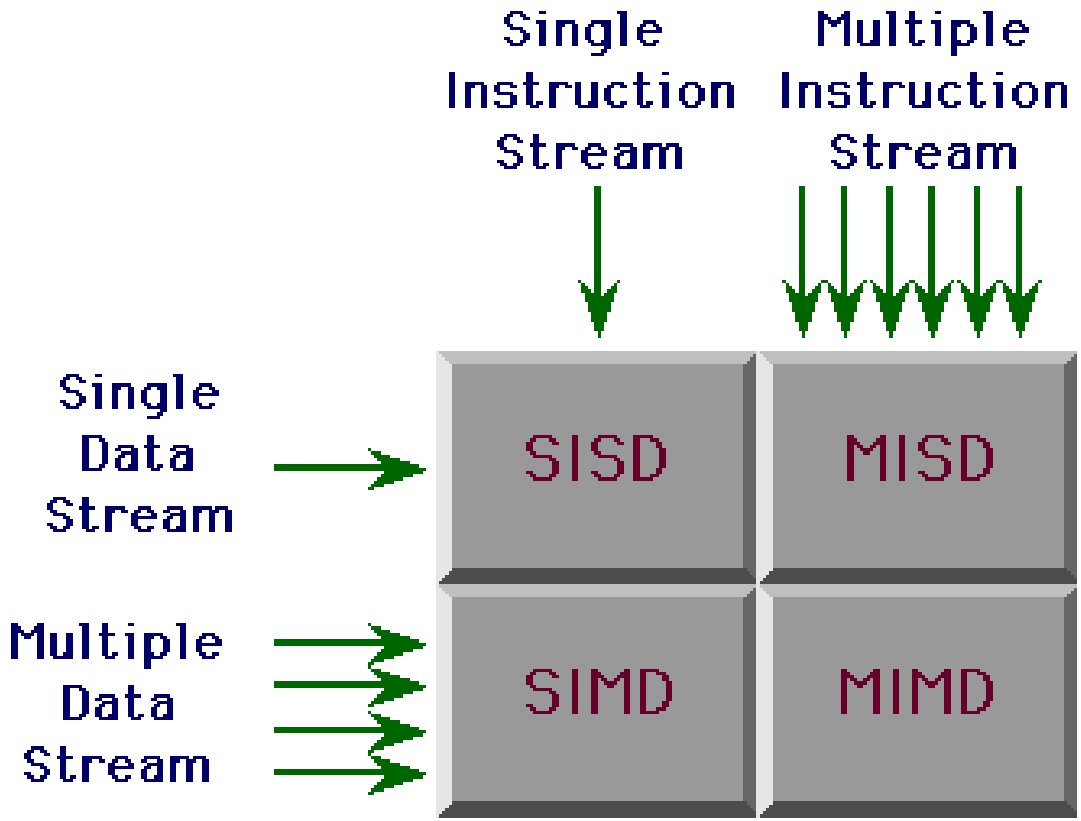


# SISD

- **SISD** (**S**inge-**I**nstruction stream, **S**inge-**D**ata stream)
- SISD corresponds to the traditional mono-processor ( von Neumann computer). A single data stream is being processed by one instruction stream
- OR
- A single-processor computer (uni-processor) in which a single stream of instructions is generated from the program.

# SIMD

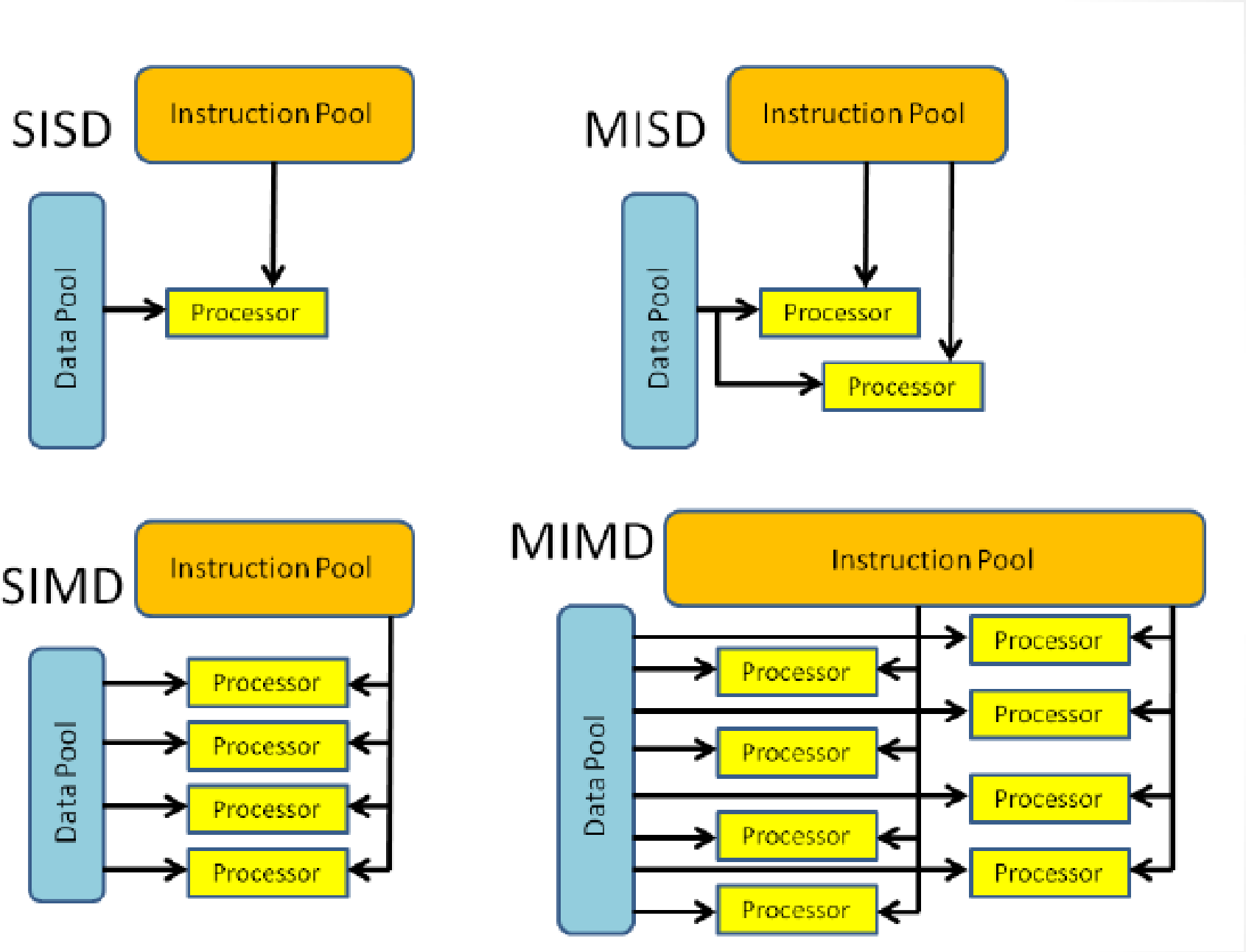
- **SIMD** (**S**ingle-**I**nstruction stream, **M**ultiple-**D**ata streams)
- Each instruction is executed on a different set of data by different processors i.e multiple processing units of the same type process on multiple-data streams.
- This group is dedicated to array processing machines.
- Sometimes,  vector processors can also be seen as a part of this group.

# MISD

- **MISD** (**M**ultiple-**I**nstruction streams, **S**inge-**D**ata stream)
- Each processor executes a different sequence of instructions.
- In case of MISD computers, multiple processing units operate on one single-data stream .
- In practice, this kind of organization has never been used

# MIMD

- **MIMD** (**M**ultiple-**I**nstruction streams, **M**ultiple-**D**ata streams)
- Each processor has a separate program.
- An instruction stream is generated from each program.
- Each instruction operates on different data.
- This last machine type builds the group for the traditional multi-processors. Several processing units operate on multiple-data streams.


SISD
Instruction Pool
Data Pool
Processor
MISD
Instruction Pool
Data Pool
Processor
Processor
SIMD
Instruction Pool
Data Pool
Processor
Processor
Processor
Processor
MIMD
Instruction Pool
Data Pool
Processor
Processor
Processor
Processor
Processor
Processor
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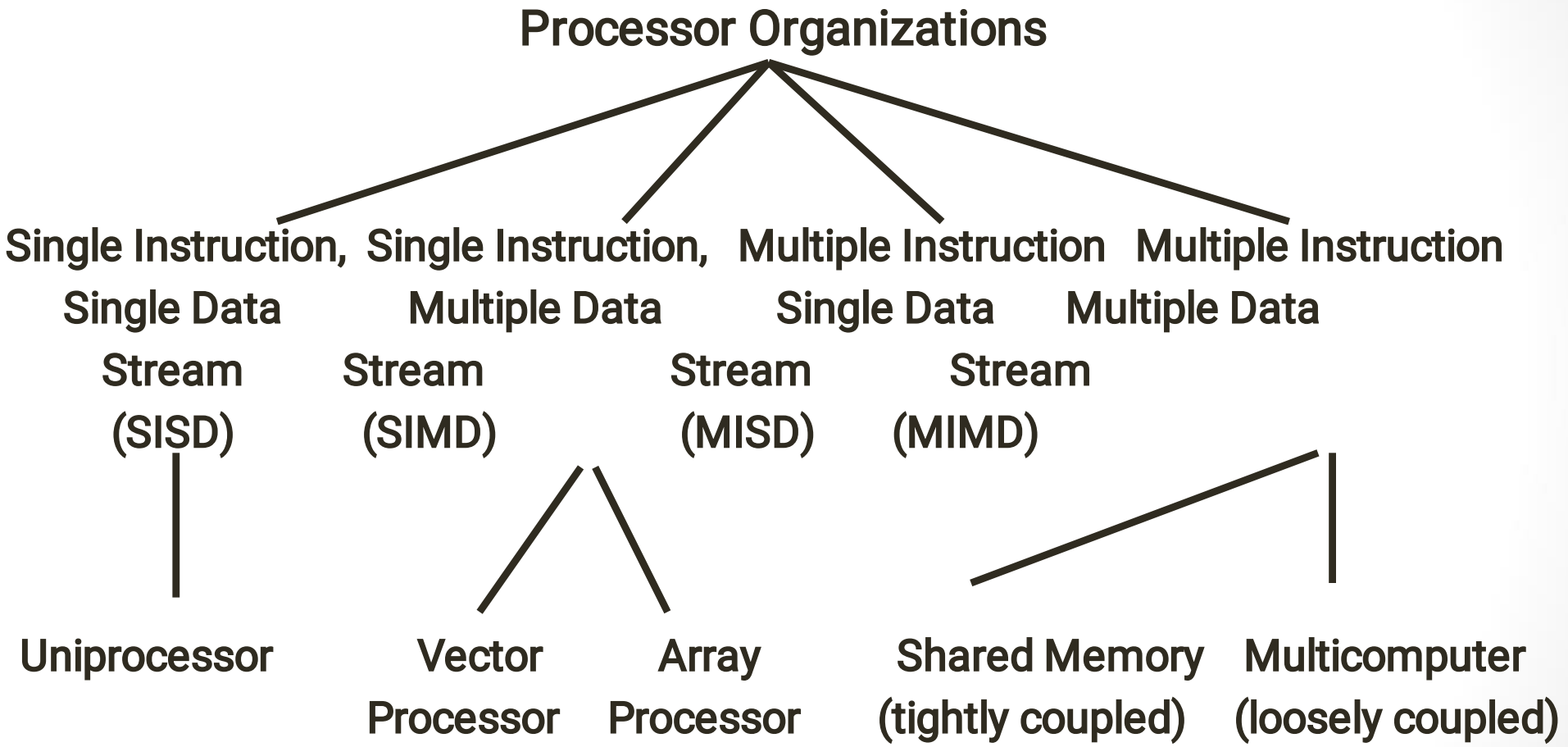
Processor

# Computer Architecture Classifications