



جامعة المستقبل  
AL MUSTAQBAL UNIVERSITY

## كلية العلوم قسم علوم الذكاء الاصطناعي

### المحاضرة الثامنة

المادة : *Knowledge representation*

المرحلة : الأولى

اسم الاستاذ: م.م. عبدالله فاضل شبر

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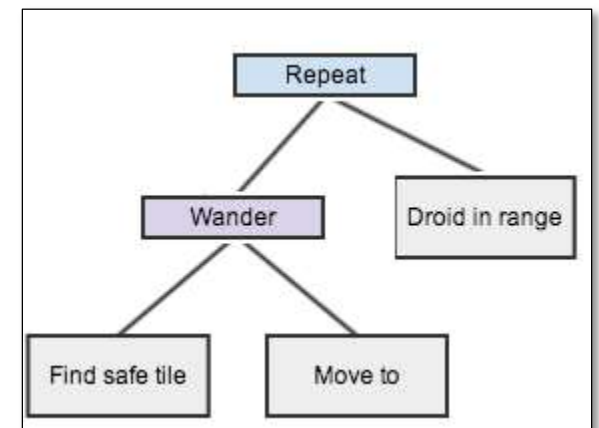
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## 5- Frame Representation

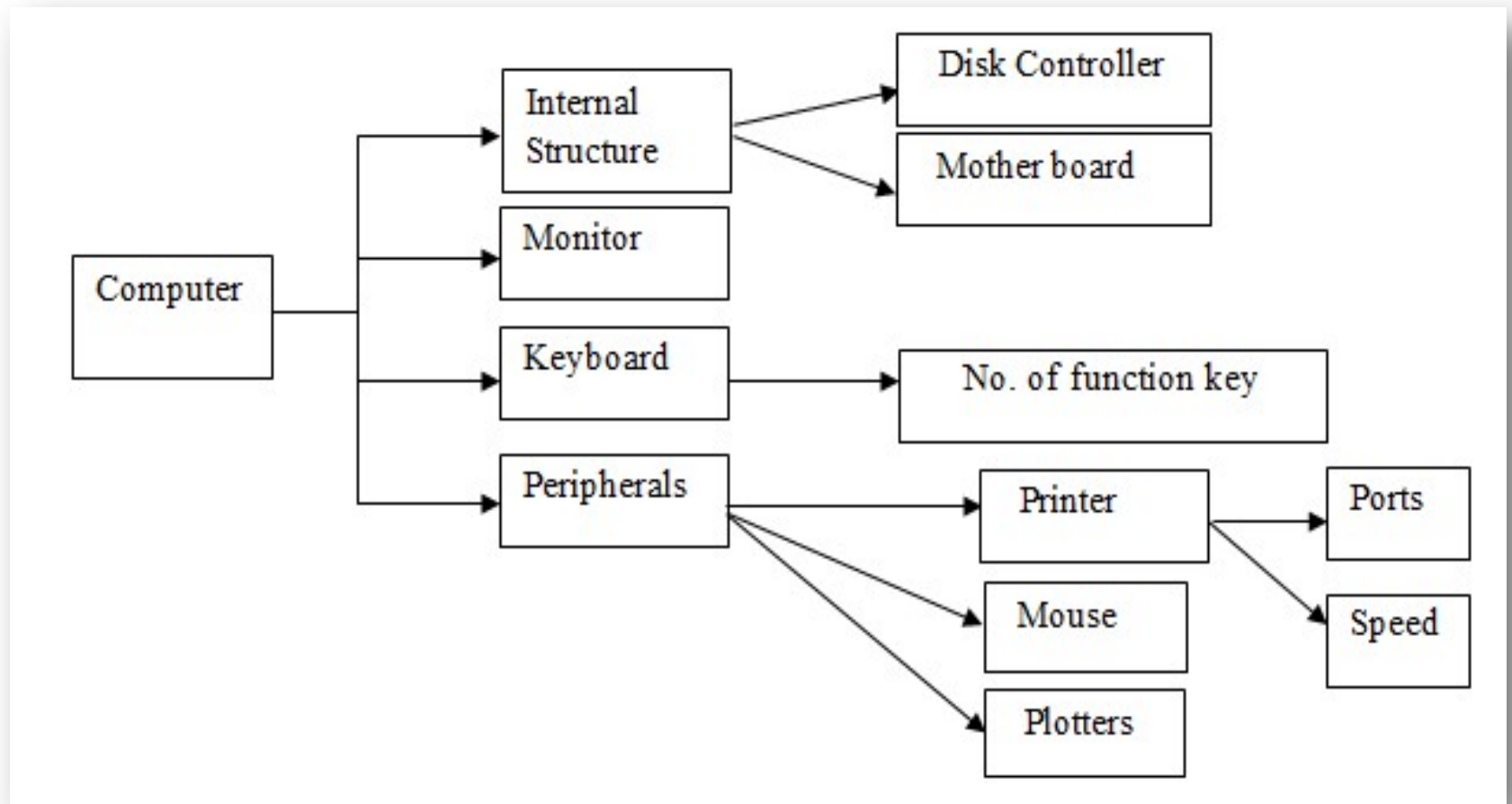
The frame representation consists of two parts:

1. Frame-list.
2. Slot-list.

- Frame-list (node-name, parent, [child]).
- Slot-list (node-name, parent).



**Example: Using the frame representation method to represent the following figure as knowledge; then illustrate, how many frame and slot in this figure?**

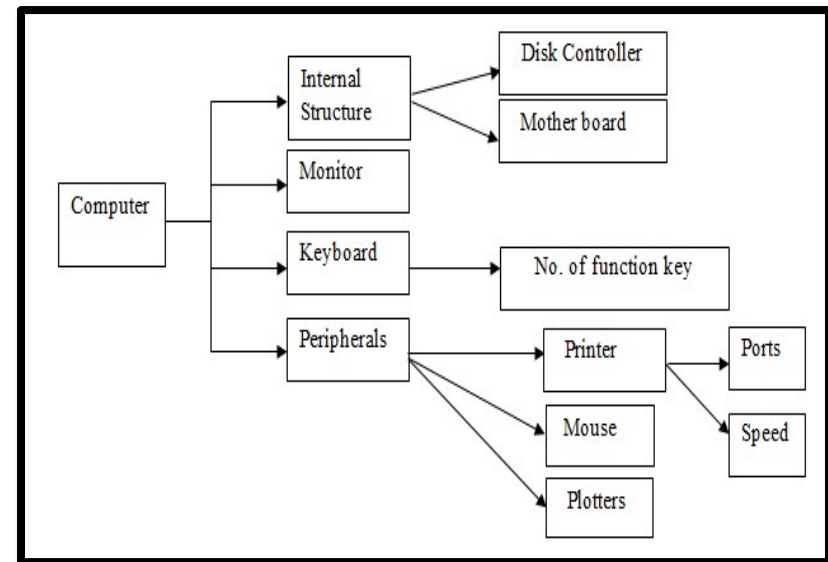


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**Frame-list (node-name, parent, [child]).**  
**Slot-list (node-name, parent).**

- Frame -list (computer,\_,[Internal structure, monitor, keyboard , Peripherals]).
- Frame-list (Internal structure, computer, [disk controller, motherboard]).
- Frame-list (keyboard, computer, [No. of function key]).
- Frame-list (peripherals, computer, [printer, mouse, plotters]).
- Frame- list (printer, peripherals, [ports, speed]).

- Slot-list (monitor, computer).
- Slot-list (Disk controller, internal structure).
- Slot-list (motherboard, internal structure).
- Slot-list (No. of function key, keyboard).
- Slot-list (mouse, peripherals).
- Slot-list (plotters, peripherals).
- Slot-list (ports, printer).
- Slot-list (speed, printer).



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**(There are 5 frames and 8 slots)**

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**Example2: you have the following facts; represent them as a tree, then using the frame representation method to represent the tree as knowledge.**

*Facts:*

*Hardware( computer, internal structure).*

*Hardware( computer, monitor).*

*Hardware( computer, keyboard).*

*Hardware( computer, peripherals).*

*Hardware(internal structure, disk controller).*

*Hardware(internal structure, motherboard).*

*Hardware(keyboard, No. of function key).*

*Hardware(peripherals, printer).*

*Hardware(peripherals, mouse).*

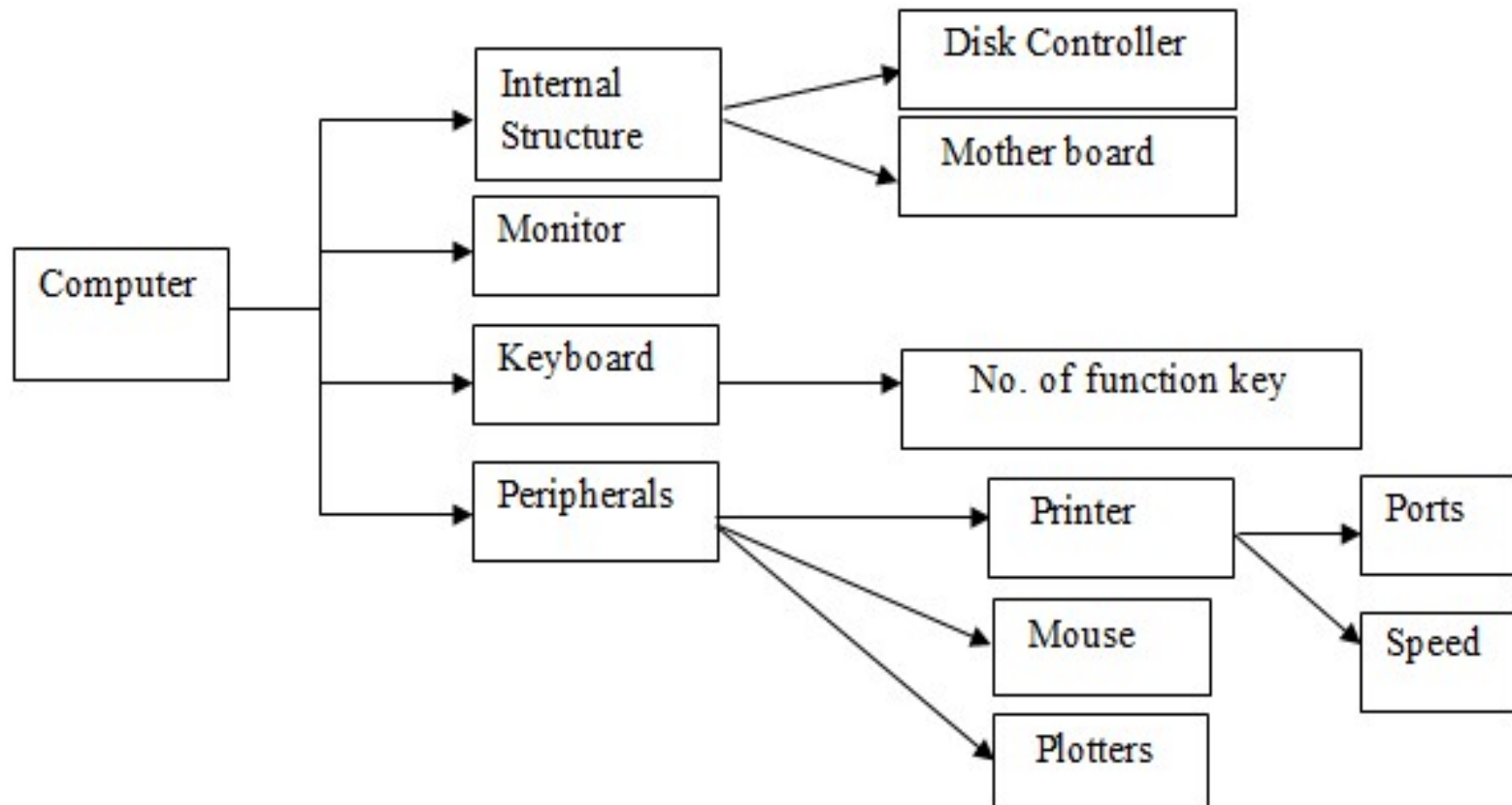
*Hardware(peripherals, plotters).*

*Hardware(printer, ports).*

*Hardware(printer, speed).*

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- Frame -list (computer,\_,[Internal structure, monitor, keyboard , Peripherals]).
  - Frame-list (Internal structure, computer, [disk controller, motherboard]).
  - Frame-list (keyboard, computer, [No. of function key]).
  - Frame-list (peripherals, computer, [printer, mouse, plotters]).
  - Frame- list (printer, peripherals, [ports, speed]).
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- Slot-list (monitor, computer).
  - Slot-list (Disk controller, internal structure).
  - Slot-list (motherboard, internal structure).
  - Slot-list (No. of function key, keyboard).
  - Slot-list (mouse, peripheral).
  - Slot-list (plotters, peripheral).
  - Slot-list (ports, printer).
  - Slot-list (speed, printer).
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