Introduction

1. Variant Record

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Variant Record

A record may often use to represent the similar but different data objects.For example an employee may be paid either hourly or monthly as per requirement.We may conclude that a record may be vary in nature or may be fixed.like a Pascal declaration:

Type paytype = (salaried,hourly)

Var employee : record

Id: integer

Dept: array[1..3] of char;

Age: integer:

Implementation of Variant Record

- The implementation is quite easy as total required memory locations is determined at the translation time

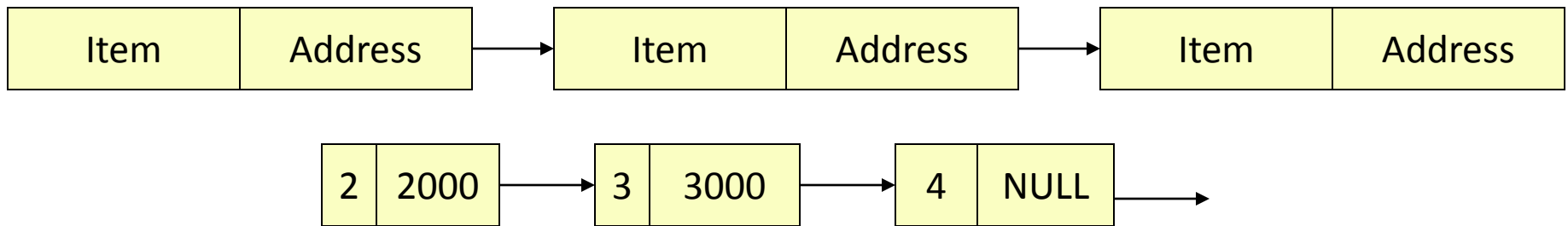| ID	
Dept.	
Name	
Pay Class	
Monthly rate	Hourly Rate
Start Date	Reg
	Over Timer

List

A data structure composed of an order set
sequence of data structure is term as list .

Vector	List
Always homogenous	Components may be homogenous but usually heterogeneous
Fixed length	Variable length

Storage Representation of List
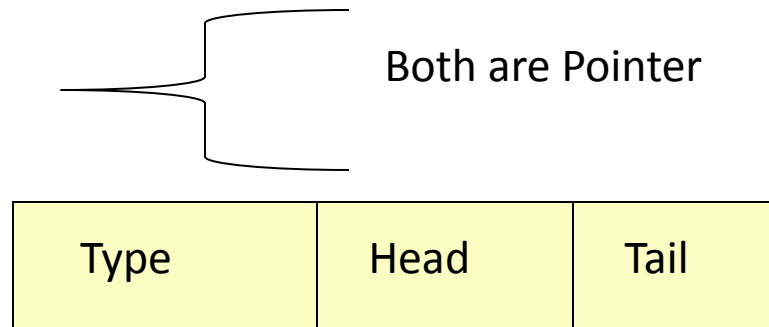
There are two method :

1.   Homogenous way

| Item | Address | → | Item | Address | → | Item | Address |

| 2 | 2000 | → | 3 | 3000 | → | 4 | NULL | → |

2. Heterogeneous way

| List | Address | — | List | Address | — | Float | NULL |

| List | Address | — | char | NULL |

| int | Address | — | char | NULL |
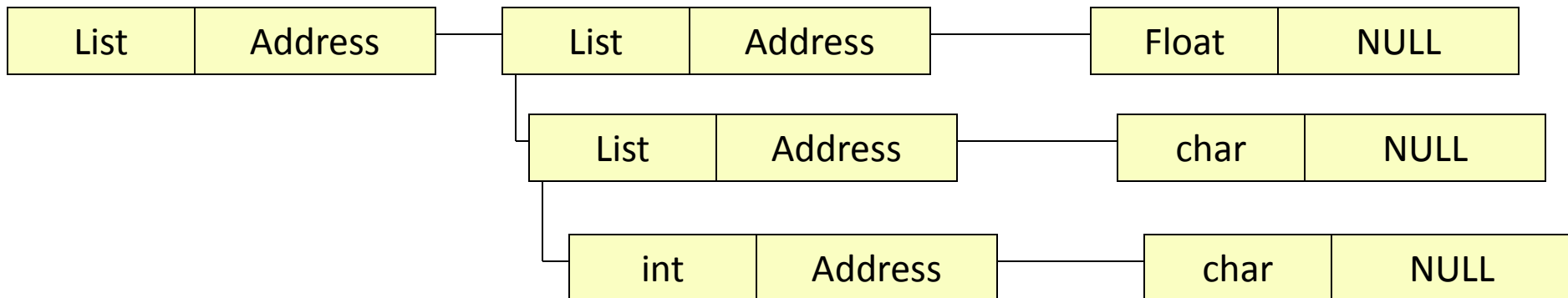
Storage Representation of List

There may be three field like

- A type field
- Head Field
- Tail Field

Both are Pointer

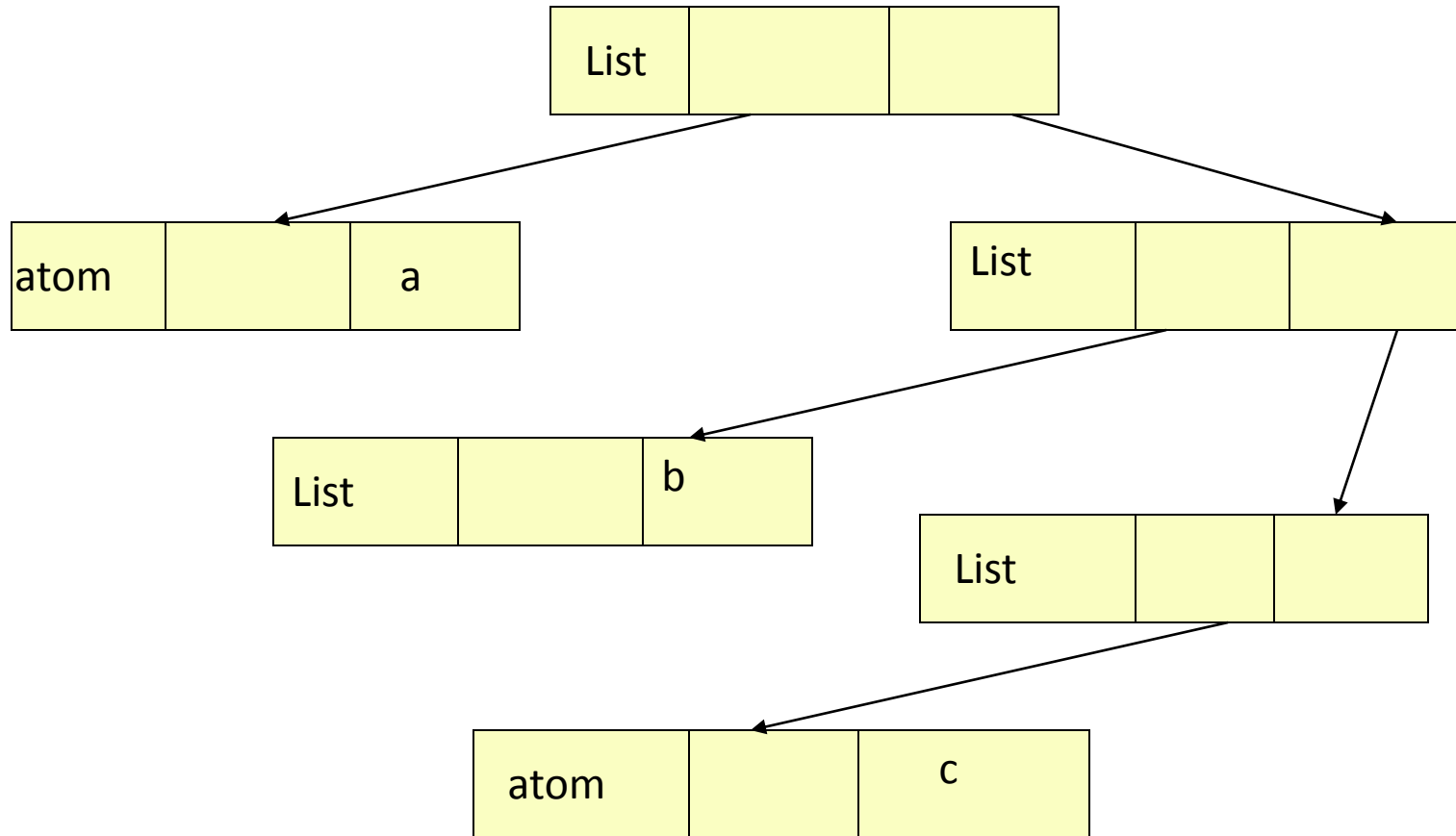| Type	Head	Tail

Implementation of List:

1. Initially (abc) is list so the type field is list

2. Them a is the atom or 1st component and (bc) again is a list

3. B is a atom or 2nd component (c) is again a list

4. C is also an atom

Continued:

abc

List		

atom		a

List		

List		b

List		

atom		c

Variations of List

Many languages provides the following variations of list:

❖ Stacks and Queues

A stack is LIFO in structure in which component selection ,insertion, deletion are restricted to one end only. Where as Queues are the FIFO in structure where component selection ,insertion are from one side where as deletion at the another end. Both sequential and linked storage representation are common for queue and stacks.

❖ Trees

A list in which component may be lists as well as elementary data objects data objects is termed as tree
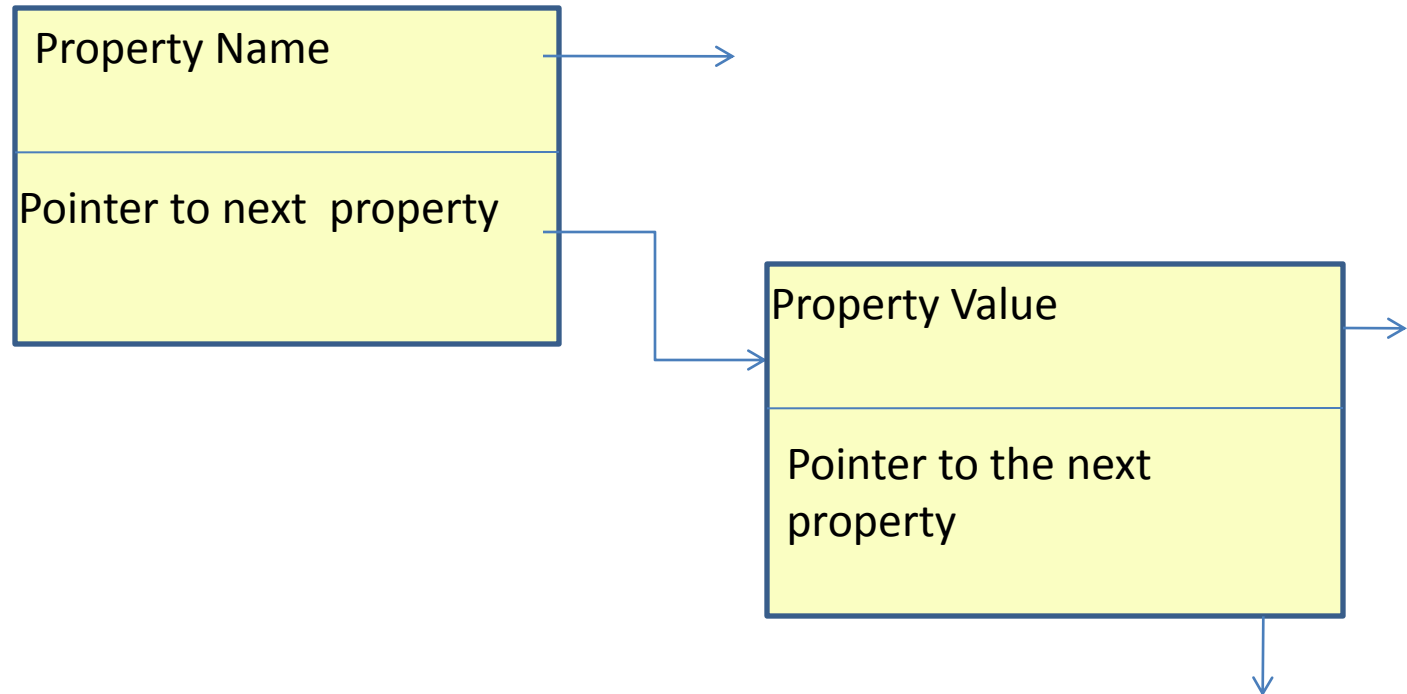
Variations of List

❖ Directed Graphs

A data structure in which the components may be linked together using some arbitrary linkage patterns

❖ Property Lists

A record with a varying number of components is usually termed as property list if the number of components may vary without restriction. In a property list both the component names(field name (and their values must be stored .

Storage Representation of Property List

Property List Structure:

Storage Representation of Property List