



IIT Madras
ONLINE DEGREE

Records and Lists

Record (also called struct or tuple)

Data type with multiple fields - each of which has a name and a value

MarksCard

value:

Name **Clarence**

9

Gender **M**

Date of Birth **6 Dec**

Town/City **Bengaluru**

Mathematics	63
Physics	88
Chemistry	73
TOTAL	224

Record (also called struct or tuple)

Data type with multiple fields - each of which has a name and a value

MarksCard

value:

Sanity of field values is
ensured by the data
type specifications

Name of field

Type of field

sequence no:

SeqNo

name:

Names

gender:

Gender

date of birth:

Dates

city:

City

mathsMarks:

Marks

physicsMarks:

Marks

chemistryMarks:

Marks

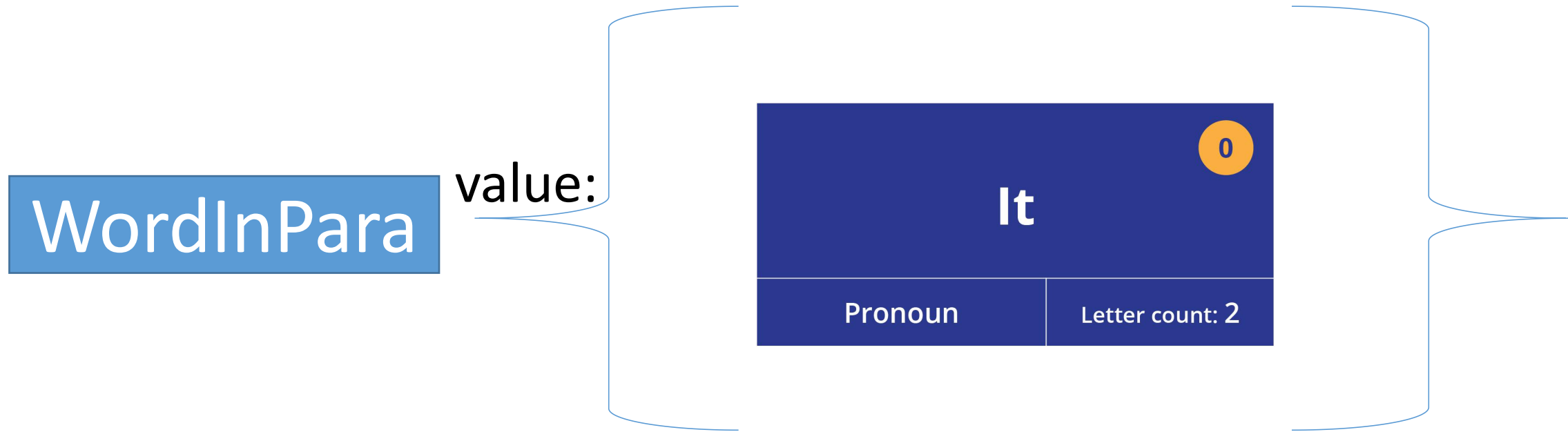
totalMarks:

TMarks

Note - Change from video: TMarks for totalMarks is the same as Marks, except range is upto 300

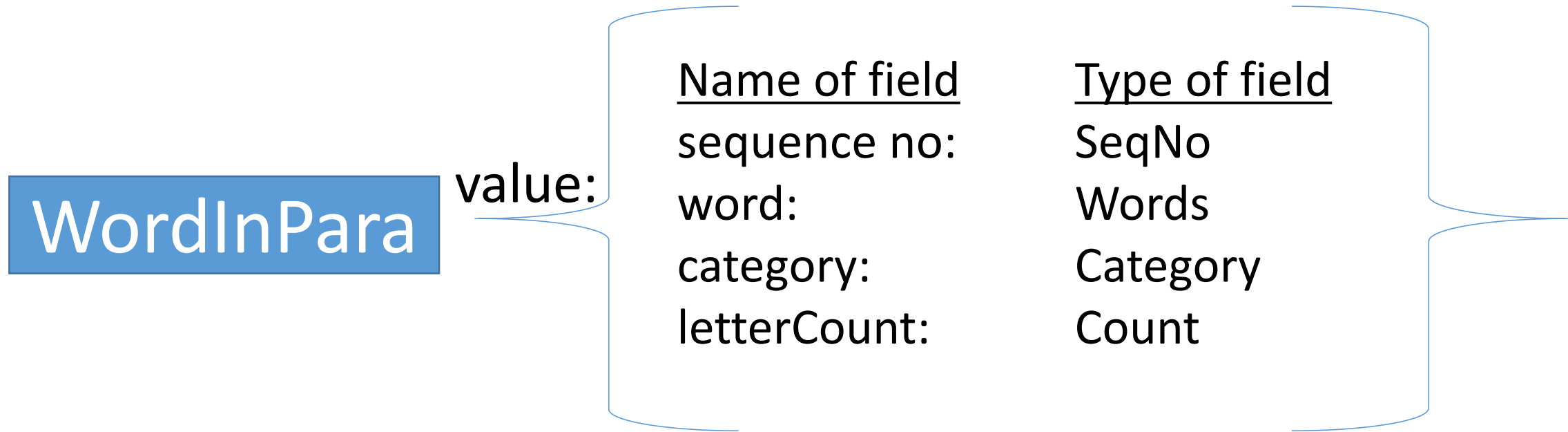
Record (also called struct or tuple)

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List

- A sequence of data elements (for example a sequence of records)
- MarksCardList - is the data type for our data set of all marks cards
 - Each element in the sequence is of MarksCard Record data type
- ParagraphWordList - is the data type for our word data set
 - Each element in the sequence is of WordInPara Record data type
- ShoppingBillList - data type for the shopping bill data set
 - We need to define the Record data type for a shopping bill

Record (also called struct or tuple)

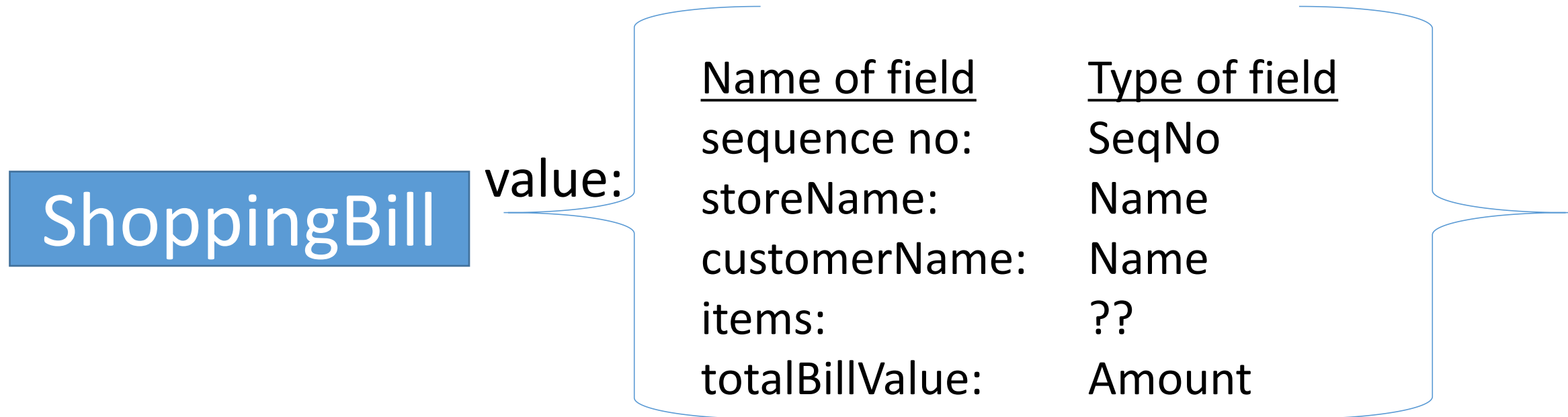
Data type with multiple fields - each of which has a name and a value

ShoppingBill

value:

SV Stores		Srivatsan 1		
Item	Category	Qty	Price	Cost
Carrots	Vegetables/Food	1.5	50	75
Soap	Toiletries	4	32	128
Tomatoes	Vegetables/Food	2	40	80
Bananas	Vegetables/Food	8	8	64
Socks	Footwear/Apparel	3	56	168
Curd	Dairy/Food	0.5	32	16
Milk	Dairy/Food	1.5	24	36
				567

Record data type for shopping bill



Record data type for shopping bill

Item

There is a list of items
in the shopping bill !

Carrots	Vegetables/Food	1.5	50	75
Soap	Toiletries	4	32	128
Tomatoes	Vegetables/Food	2	40	80
Bananas	Vegetables/Food	8	8	64
Socks	Footwear/Apparel	3	56	168
Curd	Dairy/Food	0.5	32	16
Milk	Dairy/Food	1.5	24	36

ShoppingBill

value:

Name of field

Type of field

sequence no:

SeqNo

storeName:

Name

customerName:

Name

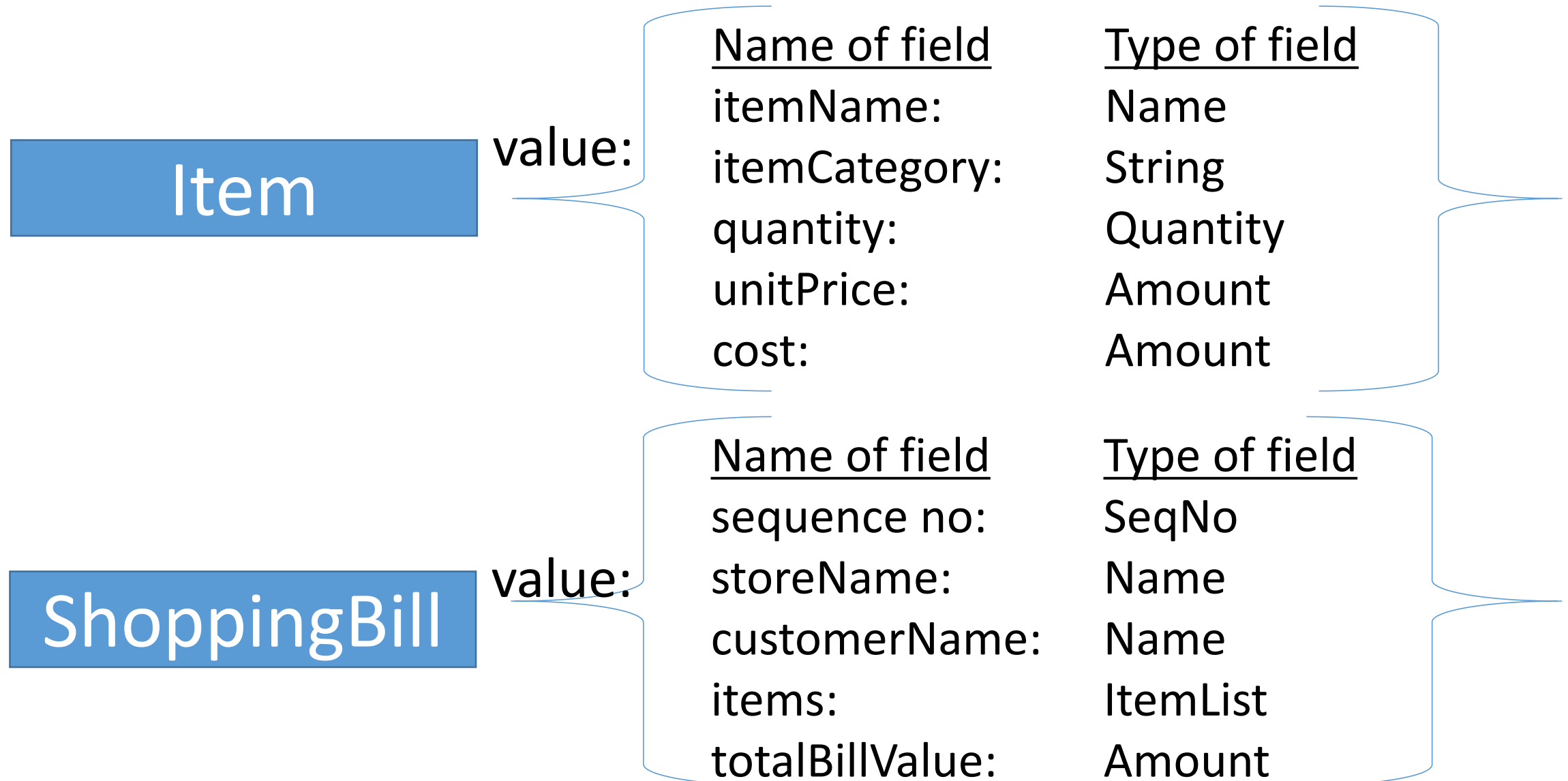
items:

??

totalBillValue:

Amount

Record data type for shopping bill



itemList is a List of Item data type

Summary

- A data type defines the values that the variable can take, and the set of operations that are permitted on it
- Basic data types - Integer, Boolean and Character are needed for our data sets
- Subtypes of a type can be used to further restrict the values and/or operations allowed
- Record type is a collections of named fields, each with the same or different data types
- List type is a sequence of items, all of which are usually of the same data type