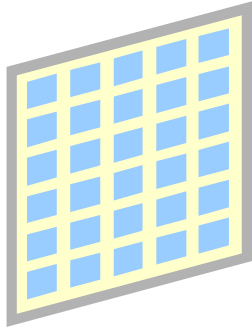


Managing Tables

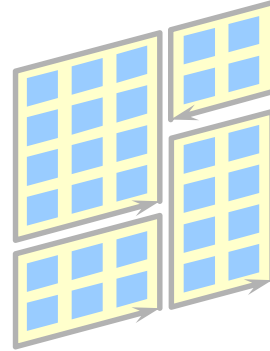
Objectives

- Distinguishing between different Oracle data types
- Creating tables using appropriate storage settings
- Controlling the space used by tables
- Analyzing tables to check integrity and migration
- Retrieving information about tables from the data dictionary
- Converting between different formats of ROWID

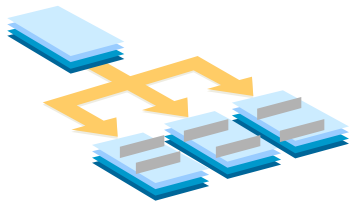
Storing User Data



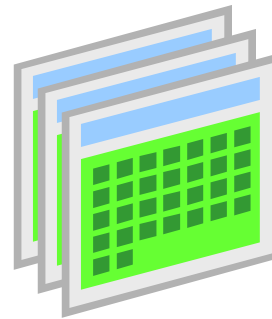
Regular table



Partitioned table

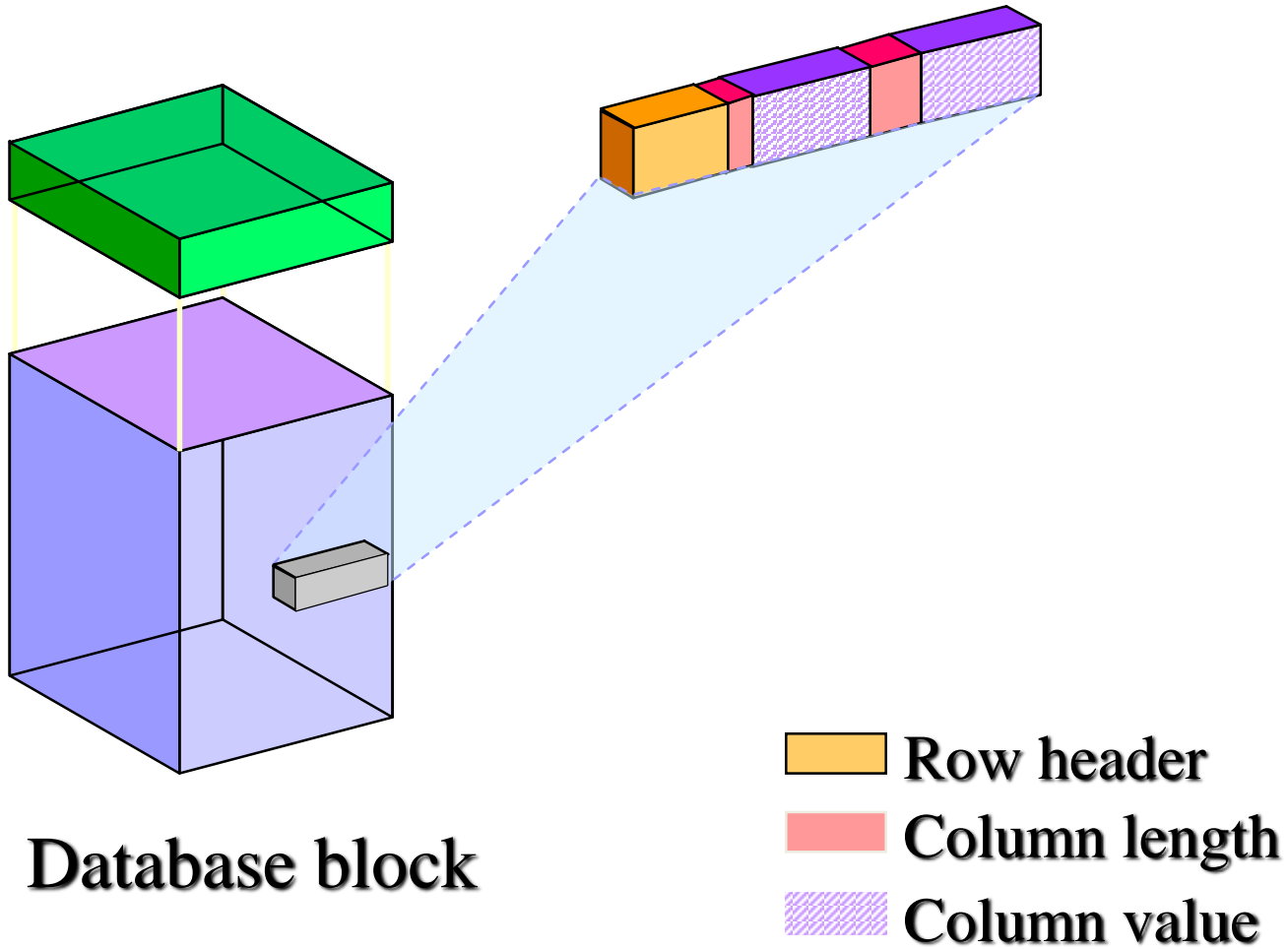


Index-organized
table

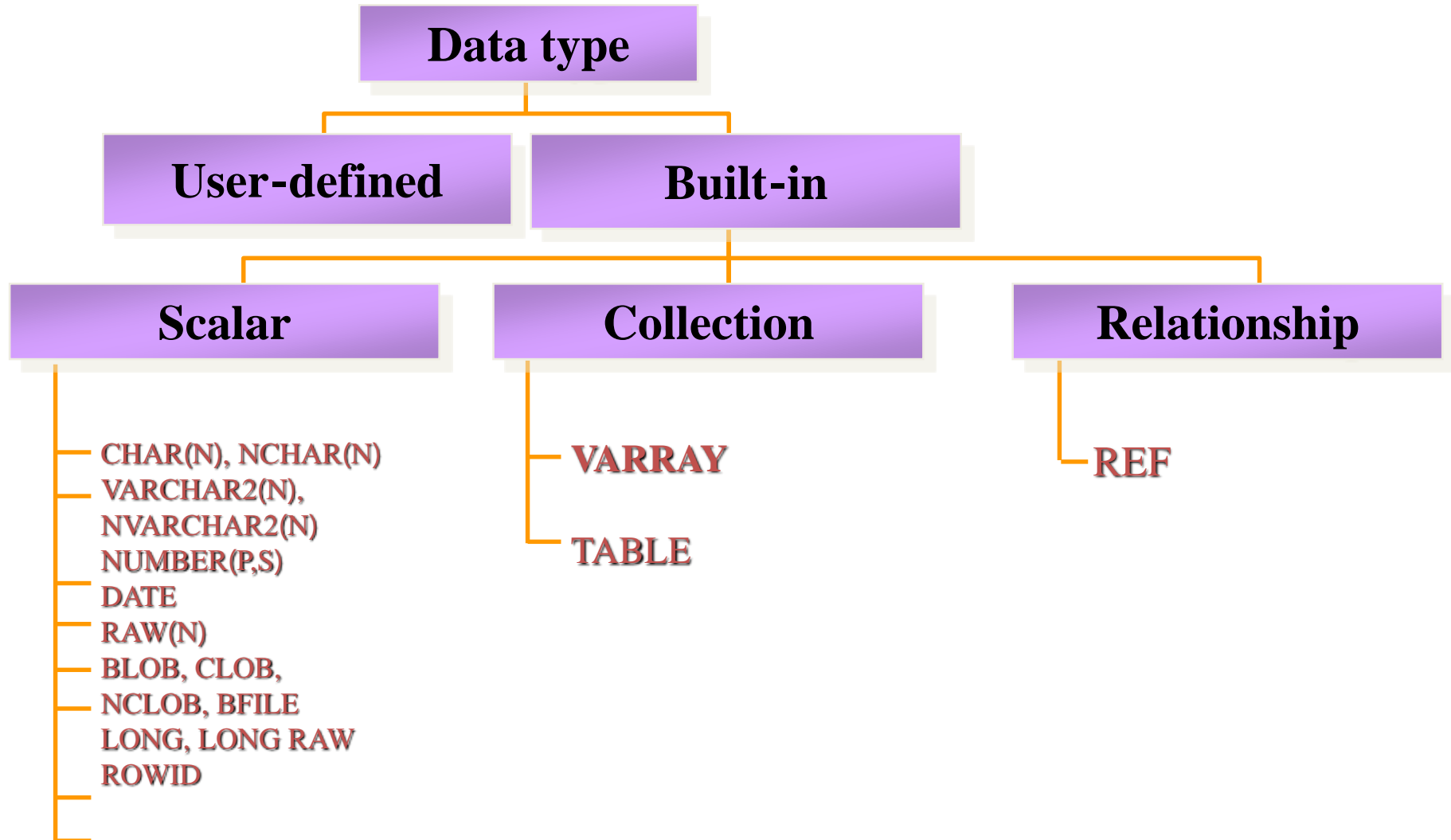


Cluster

Structure of a Row



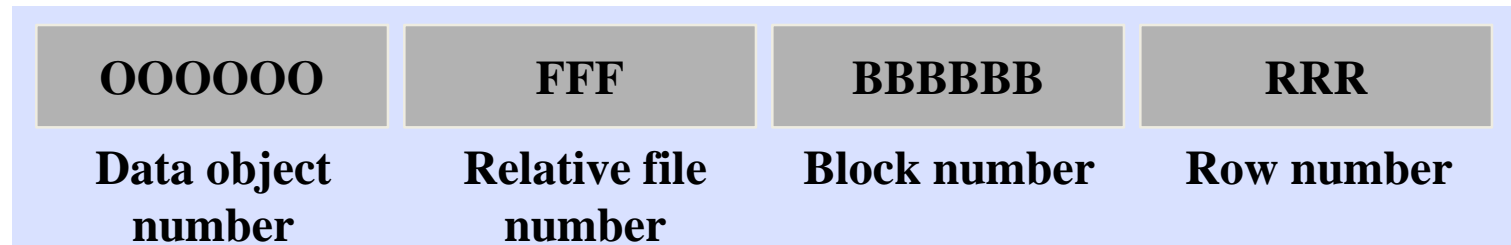
Oracle Data Types



ROWID Data Type

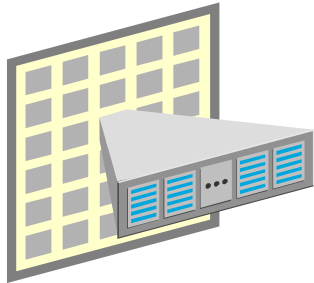
- Unique identifier for a row
- Used to locate a row

ROWID Format

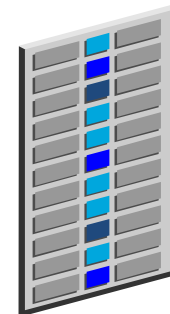


Collections

- Collections are objects that contain objects.
- VARRAYs are ordered sets of elements containing a count and a limit.
- Nested tables are tables with a column or variable of the TABLE data type.



VARRAY



Nested table

Creating a Table

```
CREATE TABLE employees(  
empno NUMBER(4), last_name VARCHAR2(30), deptno  
NUMBER(2))  
PCTFREE 20 PCTUSED 50  
STORAGE(INITIAL 200K NEXT 200K  
PCTINCREASE 0 MAXEXTENTS 50)  
TABLESPACE data01;
```


Creating a Table: Guidelines

- Use a few standard extent sizes for tables to reduce tables space fragmentation.
- Use the CACHE clause for frequently used, small tables.

Setting PCTFREE and PCTUSED

– Compute PCTFREE

$$\frac{(\text{Average Row Size} - \text{Initial Row Size}) * 100}{\text{Average Row Size}}$$

Average Row Size

• Compute PCTUSED

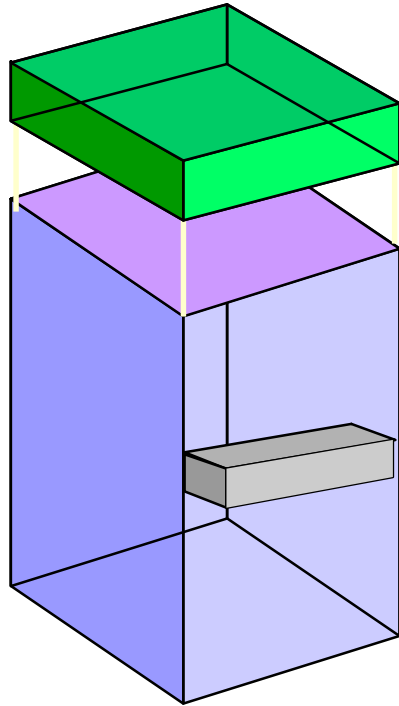
$$100 - \text{PCTFREE} - \frac{\text{Average Row Size} * 100}{\text{Available Data Space}}$$

100 - PCTFREE -

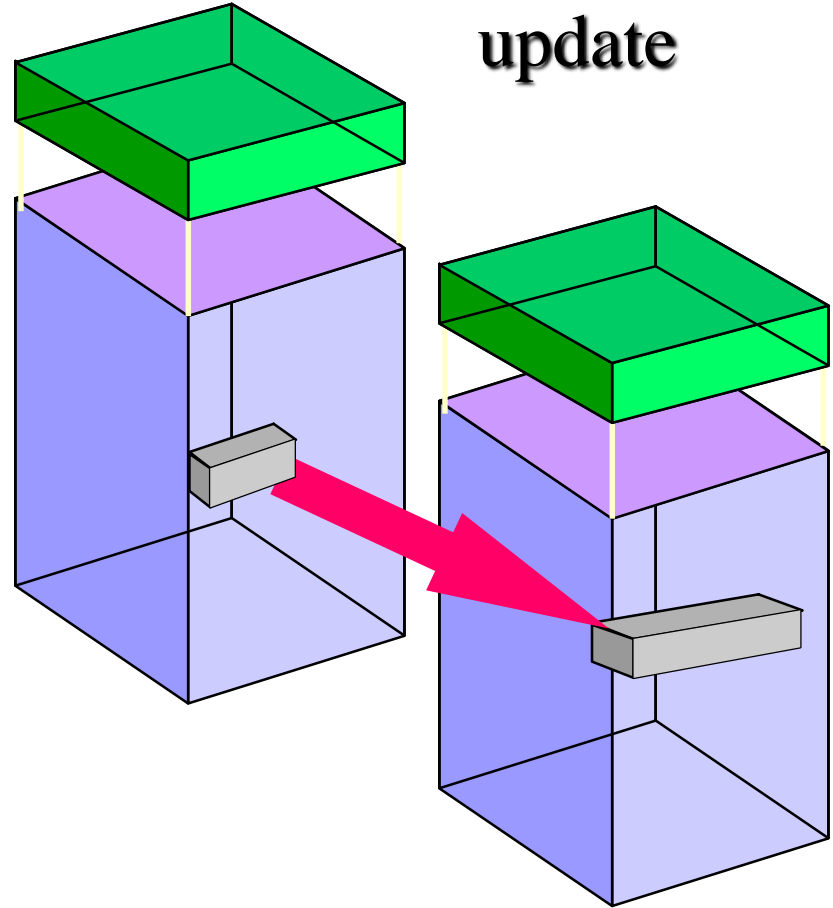
Available Data Space

Row Migration and Chaining

**Before
update**



**After
update**



Copying an Existing Table

```
CREATE TABLE new_emp STORAGE (INITIAL 200K  
NEXT 200K PCTINCREASE 0 MAXEXTENTS 50)  
NOLOGGING  
TABLESPACE data01  
AS  
SELECT * FROM scott.employees;
```

Dropping Tables

```
DROP TABLE scott.departments CASCADE  
CONSTRAINTS;
```