



# Introduction to Various Data Types



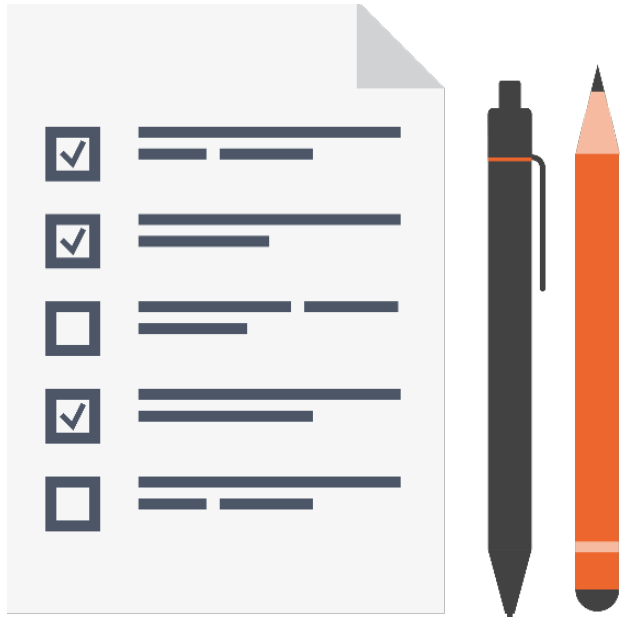
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# Agenda



Importance of Data Types

Various Data Types

Real World Scenarios



# What is a Data Type?

The data type of a value is an attribute that tells what kind of data that value can have.

# Example of Data Types

## String Data Type

"PostgreSQL", "Pluralsight", "Alex", "Red"

## Integer Data Type

1, 10, 42, 1000

## Date Time Data Type

100 BC, 2015 AD, 00:23:34, Jul-30-15



# Advantages of Proper Data Type

- Storage optimization
- Memory and CPU efficiency
- Ensuring data integrity
- Fine precision and formats
- Proper data operations



# Different Data Types

Numeric

Monetary

Character

Date/Time

Boolean

Array

# Three Important Properties

Name

Storage

Range

# Three Important Properties

date

8 bytes

4713 BC to 5874897 AD  
(1 day resolution)

integer

4 bytes

-2147483648 to  
+2147483647

varchar(n)

variable length

NA



# A Sample Record

Name	Birth Date	Age
John Smith	Dec 11, 1985	30
varchar(20)	date	integer



<http://www.postgresql.org/docs/9.4/static/datatype.html>

~ List of All Data Types



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# Real World Scenarios

## Demonstrations

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# Scenario Setup



# Scenario Setup

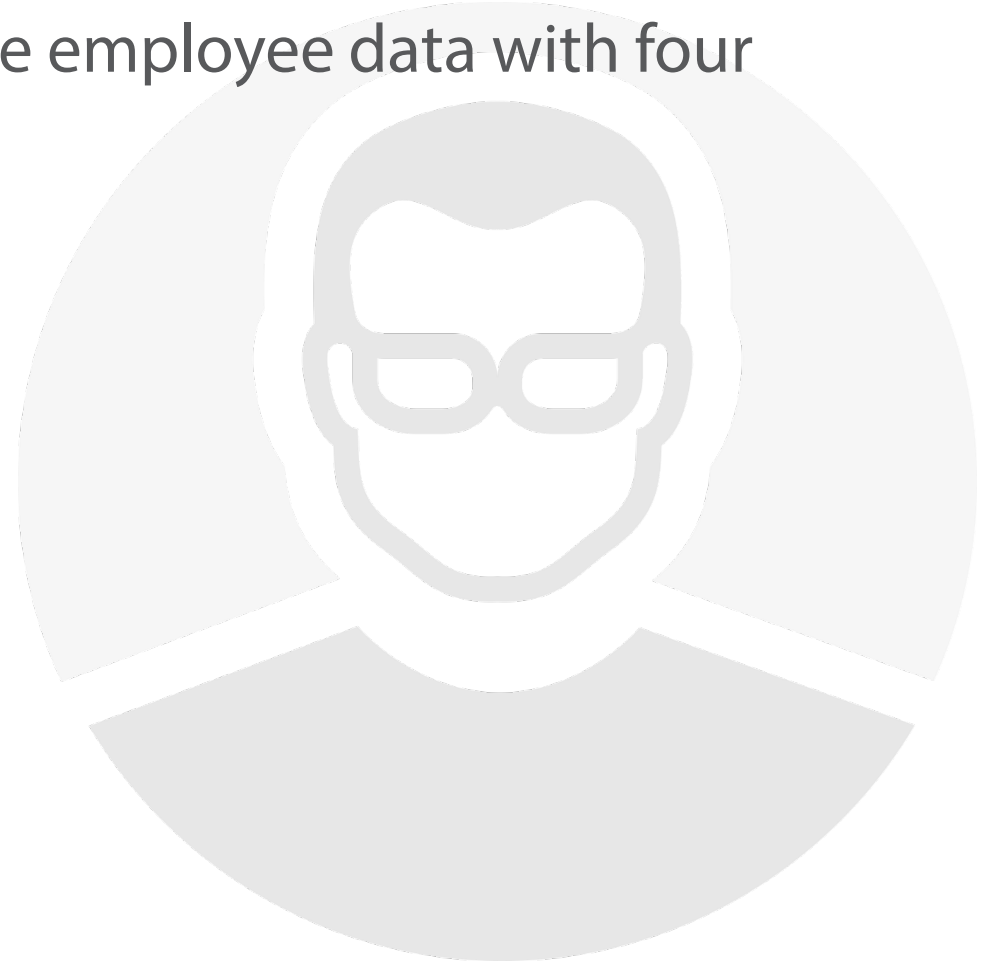




# Scenario 1 :

## Create a Table with Different Data Types

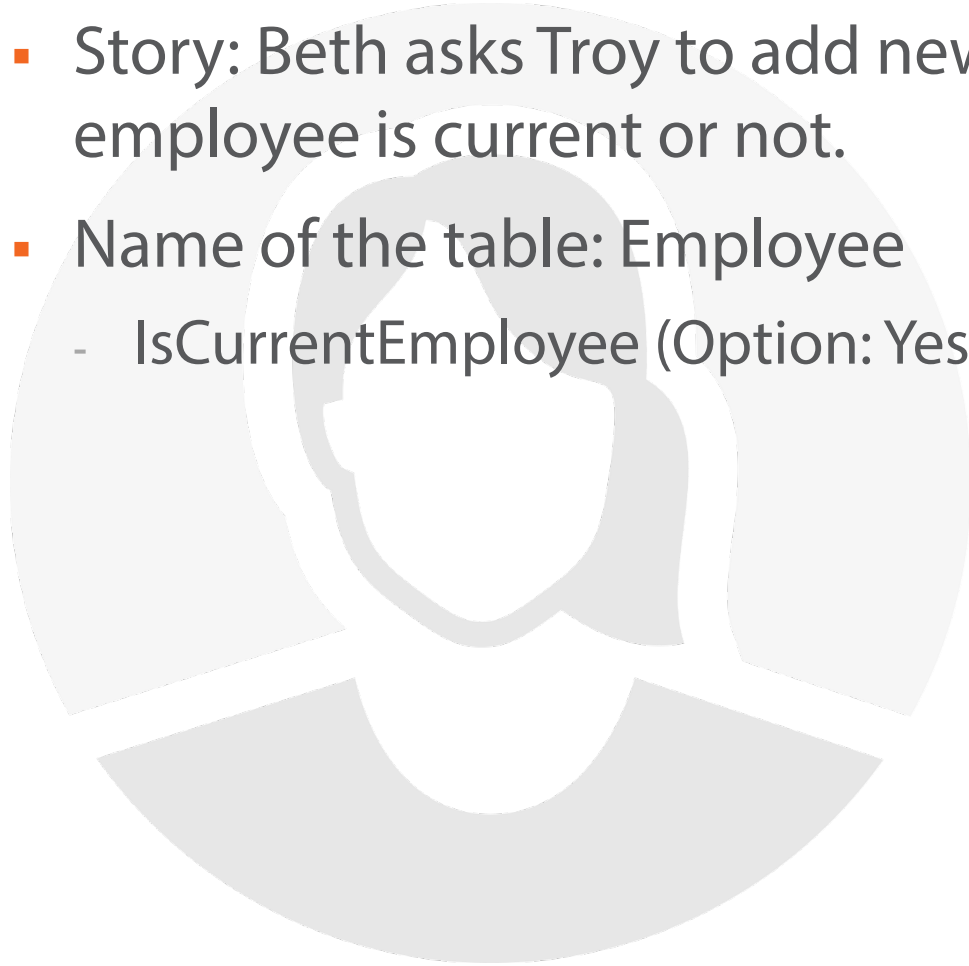
- Story: Beth asks Troy to create a table to store employee data with four columns.
- Name of the table: Employee
  - ID (Int)
  - EmployeeName (Varchar (256))
  - Age (Int)
  - Birthdate (Date)



## Scenario 2 :

# Create a New Column Accepting Yes/No

- Story: Beth asks Troy to add new column to Employee table, which indicates if employee is current or not.
- Name of the table: Employee
  - IsCurrentEmployee (Option: Yes/No)



# Scenario 3 :

## Data Type and Default Values

- Story: Beth asks Troy to add default value to the column IsCurrentEmployee and make it compulsory for every record.
- Name of the table: Employee
  - Change property of IsCurrentEmployee column
    - Not Null and
    - Default Value to Yes



# Scenario 4 :

## Incorrect Data Type and Problems

- Story: Beth asks to create a new table containing details of customer to Troy but this time she does not provide guidance for data type.
- Name of the table: Customer
  - Name
  - Birthdate
  - Zipcode
- Tasks: Later on Beth asks Troy to complete following tasks
  - 1) Search for specific zipcode
  - 2) Display everybody born in the month of January

# Scenario 5 :

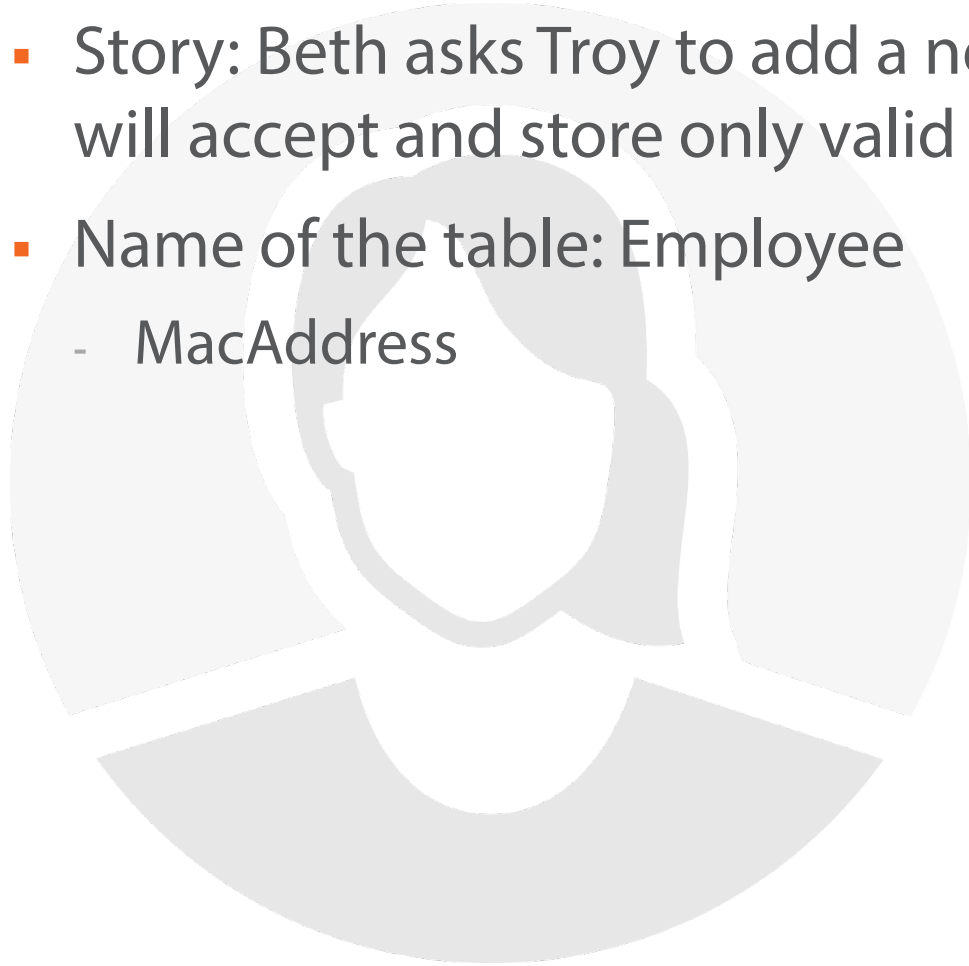
## Data Type and Integrity

- Story: Beth helps Troy with correct data type with the newly created table customer.
- Name of the table: Customer
  - Name (varchar)
  - Birthdate (date)
  - Zipcode (varchar)
- Tasks: Later on Troy realizes how it can help to complete following tasks
  - 1) Search for specific zipcode
  - 2) Display everybody born in the month of January

# Scenario 6 :

## Data Type, Integrity and Mac Address

- Story: Beth asks Troy to add a new column to Employee table where column will accept and store only valid Mac Address.
- Name of the table: Employee
  - MacAddress



# Scenario Conclusion



# Summary



Data Types are very important

Resource optimization

Data integrity

Database operations