



# Database Entities

What is an Entity?

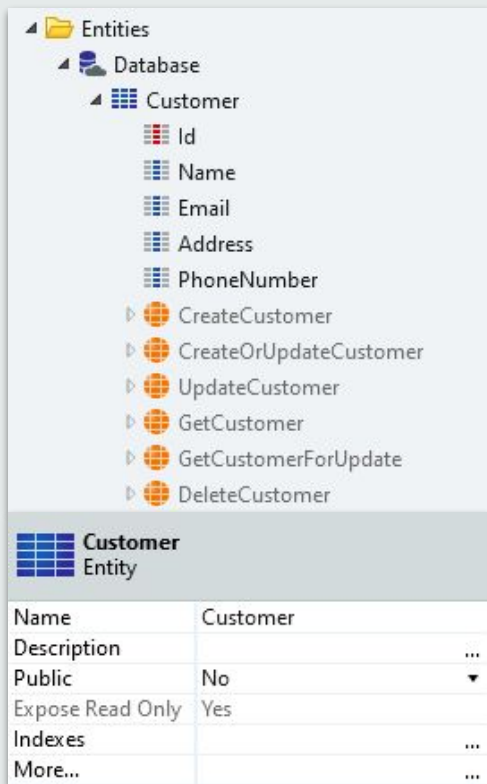
Entity Attributes

Entity Actions

# What is an Entity?

An **Entity** is an element that allows us to **persist and access information** that is needed in our applications

# Entity



- Each business concept should be represented as an Entity
- Entity data is persisted in a Database Table
  - Each new record of an Entity is inserted as a row on the corresponding table
- Entities...
  - store sets of data
  - have attributes
  - have entity actions



# Id Attribute

Id Entity Attribute	
Name	Id
Description	...
Label	Id
Data Type	Long Integer ▼
Is AutoNumber	Yes ▼
Is Mandatory	Yes
Default Value	...

- Automatically created
- Uniquely identifies the Record on the Entity
- Primary key in DB
- Supports relational database operations



# Attributes

Entities

- Database
  - Customer
    - Id
    - Name
    - Email
    - Address
    - PhoneNumber
    - CreateCustomer
    - CreateOrUpdateCustomer
    - UpdateCustomer
    - GetCustomer
    - GetCustomerForUpdate
    - DeleteCustomer

**Email**  
Entity Attribute

Name	Email
Description	...
Label	Email
Data Type	Email ▼
Length	250
Is Mandatory	No ▼
Default Value	...

- Entity data is stored in its attributes
- Attributes represent business concepts' properties
  - Map to a column on the respective database table
- Must have a basic Data Type

# Basic Data Types

## Alphanumeric

### Text

"Lorem ipsum"

### Phone Number

"+1 617 837 6840"

### Email

"noreply@outsystems.com"

## Numeric

### Integer

1234567

### Long Integer

123456789101112

### Decimal

1234.56

### Currency

1234.56

## Dates and Times

### Date Time

#2020-01-02 13:14:15#

### Date

#2020-01-02#

### Time

#13:14:15#

## Logic

### Boolean

True

## Large Object

### Binary Data

<1345 bytes>

## Referential

### Entity Identifier

45

# Default Values

## Alphanumeric

### Text

'''

### Phone Number

'''

### Email

'''

## Numeric

### Integer

0

### Long Integer

0

### Decimal

0.0

### Currency

0.0

## Dates and Times

### Date Time

#1900-01-01 00:00:00#

### Date

#1900-01-0#

### Time

#00:00:00#

## Logic

### Boolean

False

## Large Object

### Binary Data

<0 bytes>

## Referential

### Entity Identifier

*NullIdentifier()*

# Data Type Inference

When naming a new attribute (or variable), OutSystems tries to infer its type

**Email** ← \*Email  
e.g. *PersonalEmail*

**Date Time** ← \*DateTime, \* On, \*Instant  
e.g. *Datetime, CreatedOn*

**Phone Number** ← x, y, z, \*Count, \*Number

**Boolean** ← Is\*, Has\*  
e.g. *IsCompleted, HasDocument*

**Date** ← \*Date  
e.g. *BirthDate*

**User Identifier** ← \*By  
e.g. *CreatedBy*

**Integer** ← x, y, z, \*Count, \*Number  
e.g. *ProductNumber*

**Time** ← \*Time

**Entity Identifier** ← <Entity>Id  
e.g. *CustomerId*

**Currency** ← \*Amount, \*Price

**Entity Record** ← <Entity>

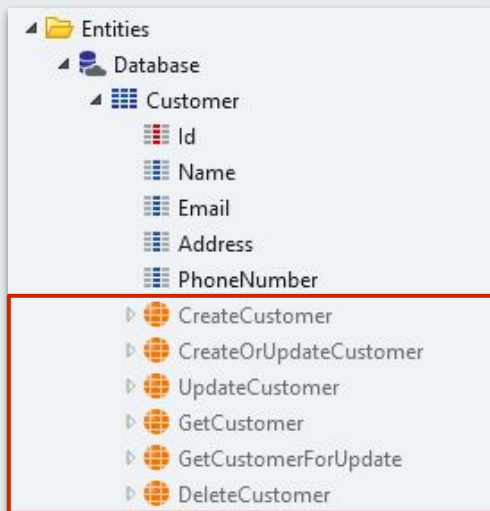
**Entity Record List** ← <Entity>s/ies  
e.g. *Users, Factories*

[Guess my attribute/Variable Data Type](#)





# Entity Actions



- Automatically created
- **CRUD** data operations
  - **C**reate: CreateCustomer
  - **R**etrieve: GetCustomer
  - **U**ppdate: UpdateCustomer
  - **D**elete: DeleteCustomer
- Entity actions can be used directly in the business logic of the application

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# Questions?

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# Thank you

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