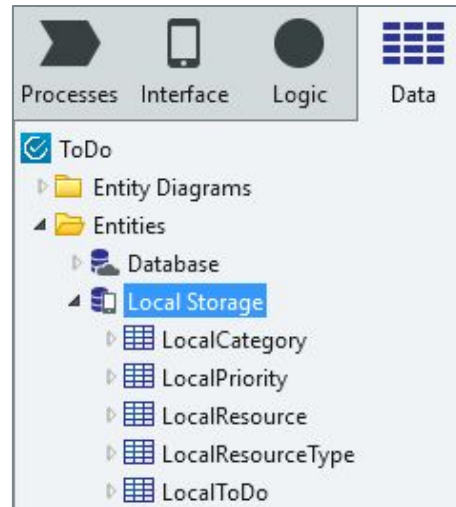# Local Storage

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Topics

- Local Storage in Offline Scenarios

- Local Storage
  - Creating Local Storage Entities
  - Initializing Local Storage Entities
  - Fetching Data from Local Storage Entities
  - Enabling Offline Interactions
  - Synchronizing Local Storage with Server Data
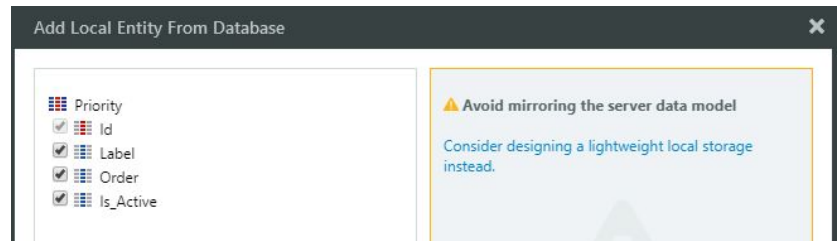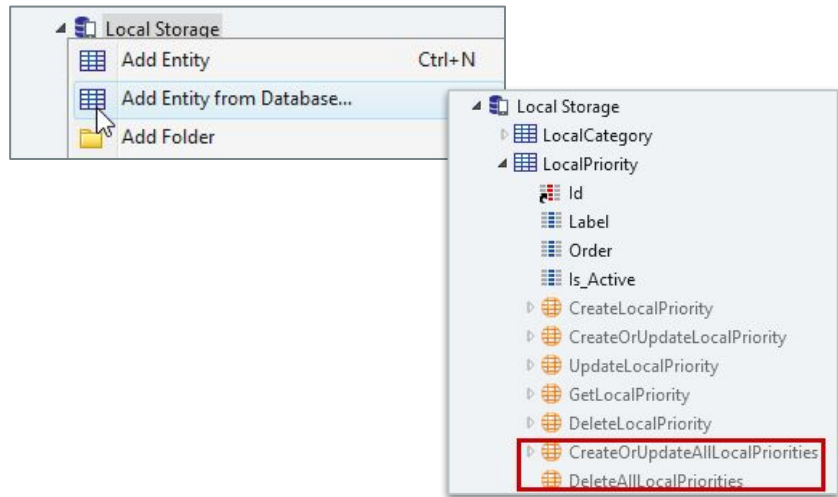
- Securing Local Storage

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Local Storage Scenarios

- Local Storage Entities
  - Stored on device
  - Available Online or Offline

- Various local storage use cases
  - Stand alone apps
    - Store all data, never need server
  - Caching
    - Store app data that rarely changes
  - Offline
    - Store data locally
    - Read only, or can data be changed?
   - All data, or subsets of data?

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Creating Local Storage Entities

- Created just like a Database Entity
  - Automatically created (Long Integer Id)
  - Typical CRUD Entity Actions
  - Special "All" Actions (for sync process)
    - *CreateOrUpdateAll* and *DeleteAll* Actions

- Can be created from Database Entities
  - Match the Database Entity structure
  - Performance warnings to promote lightweight Local Storage Entities

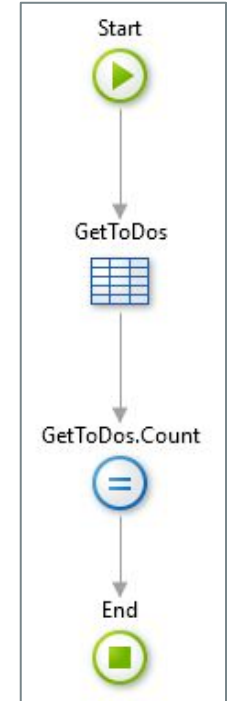- No Static Entities in Local Storage
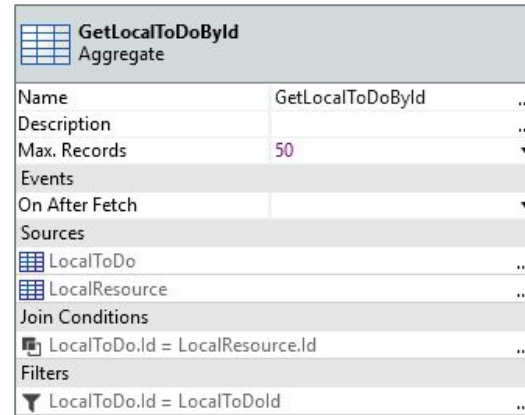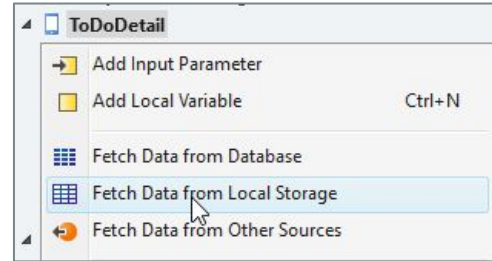
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Initializing Local Storage Entities

- Download data from the server
  - Data synchronization

- Create / enter data on device (user)
  - Can't be bootstrapped from Excel

- No data preview
  - Data is on the device, not on server

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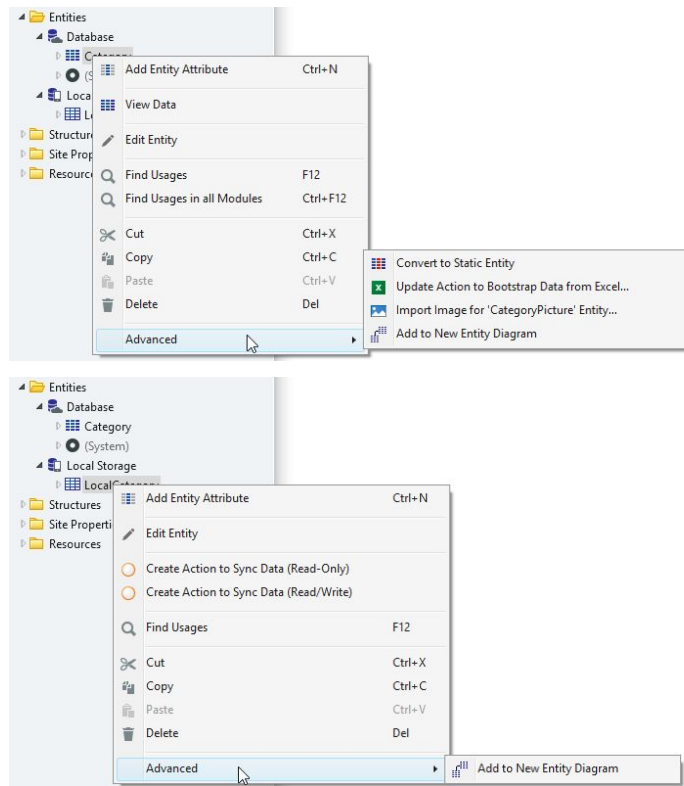
Fetching Data from Local Storage

- Data from Local Storage can only be fetched via Aggregates
  - Designed like Database Aggregates

  - On a Screen / Block
    - Runs asynchronously
    - On After Fetch Event

  - In an Action Flow
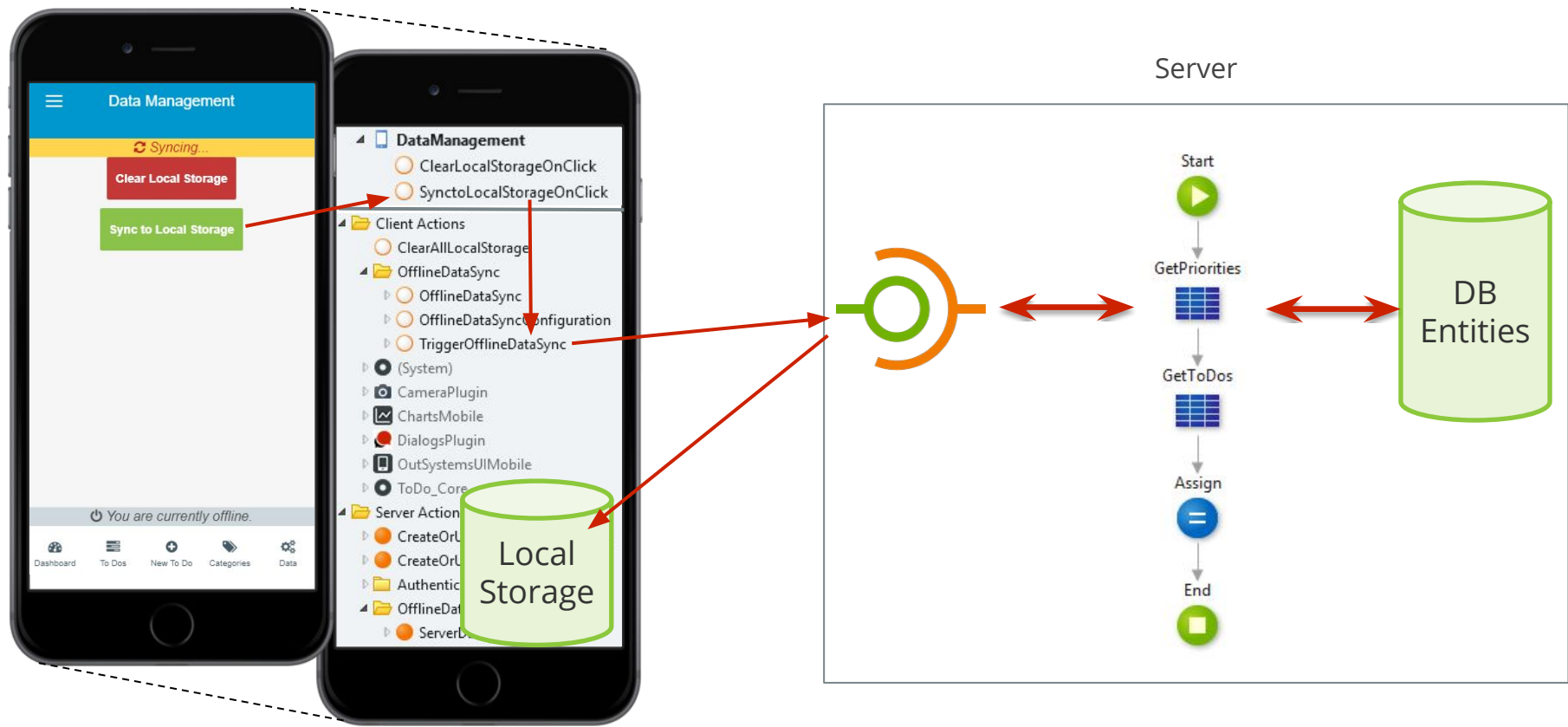   - Only usable in Client Actions
    - Drag and drop accelerators

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Offline Interactions

Server

DB Entities

ToDoDetail
- LocalToDoId
- GetLocalCategories
- GetLocalToDoById
- SaveOnClick
- StarOnClick
- TakePictureOnClick

Local Storage

Title
Create New To Do

Syncing...

Title

Notes

Due Date
mm/dd/yyyy

Category
Groceries

Priority
Low   Medium   High

Image Resource

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Synchronizing Data

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Securing Local Storage

- **Avoid storing sensitive data on the device**
  - Devices can be lost or stolen creating risks
  - Minimum subset of data to allow key offline tasks

- Store small amounts of sensitive data
  - Use device's keystore/keychain (**Key Store Plugin** from Forge)
  - Use Javascript encryption framework to encrypt data before storing it
    - Need to decrypt after retrieving data
    - Encryption key needs to be secured

- Store large amounts of sensitive data
  - Encrypt all Local Storage (use **Ciphered Local Storage Plugin** from Forge)
  - Performance overhead in read and write data operations

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Summary

- Local Storage in Offline Scenarios

- Local Storage
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  - Initializing Local Storage Entities
  - Fetching Data from Local Storage Entities
  - Enabling Offline Interactions
  - Synchronizing Local Storage with Server Data

- Securing Local Storage

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Local Storage

Thank You!