Introduction to Core Data

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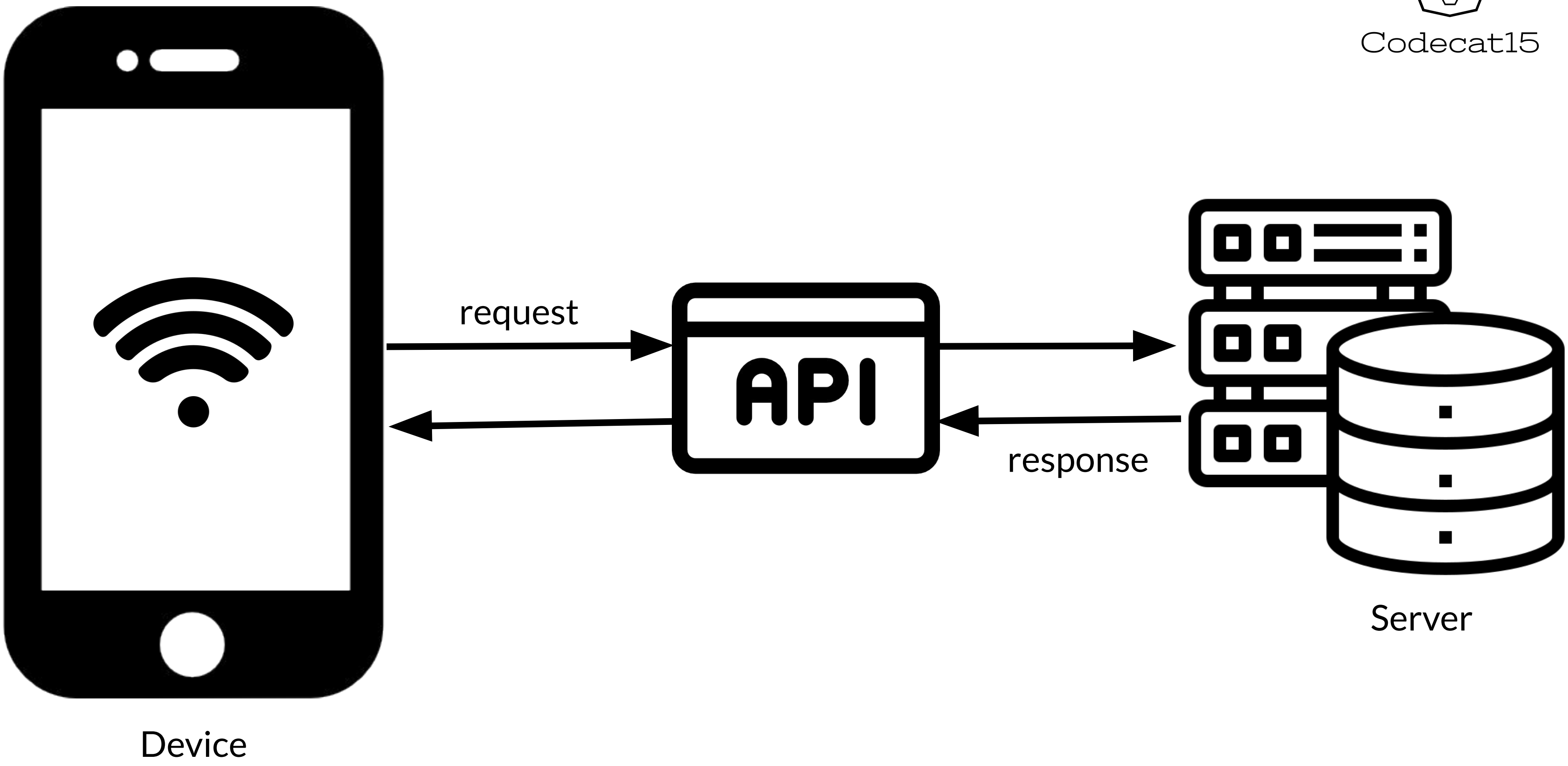
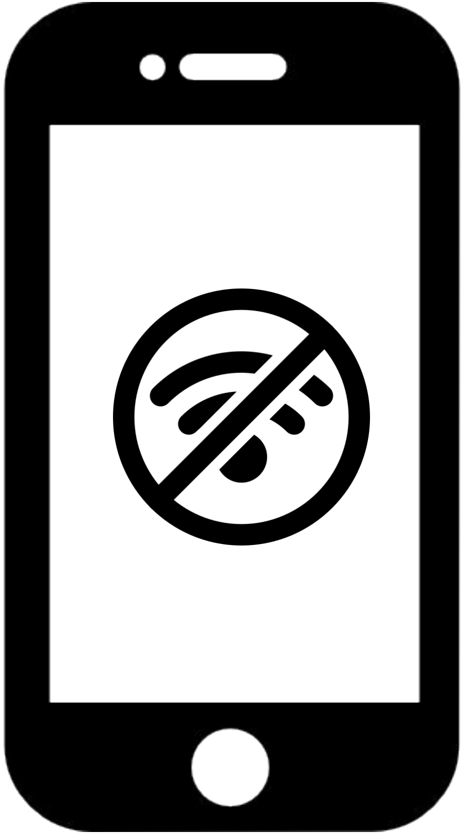
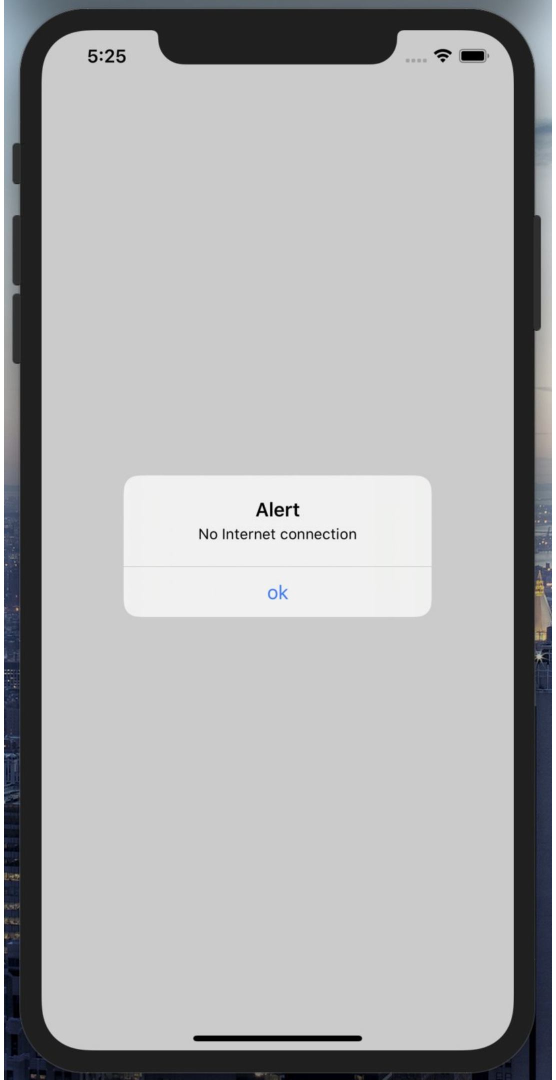




No Internet

No internet connection alert



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Alert

No Internet connection

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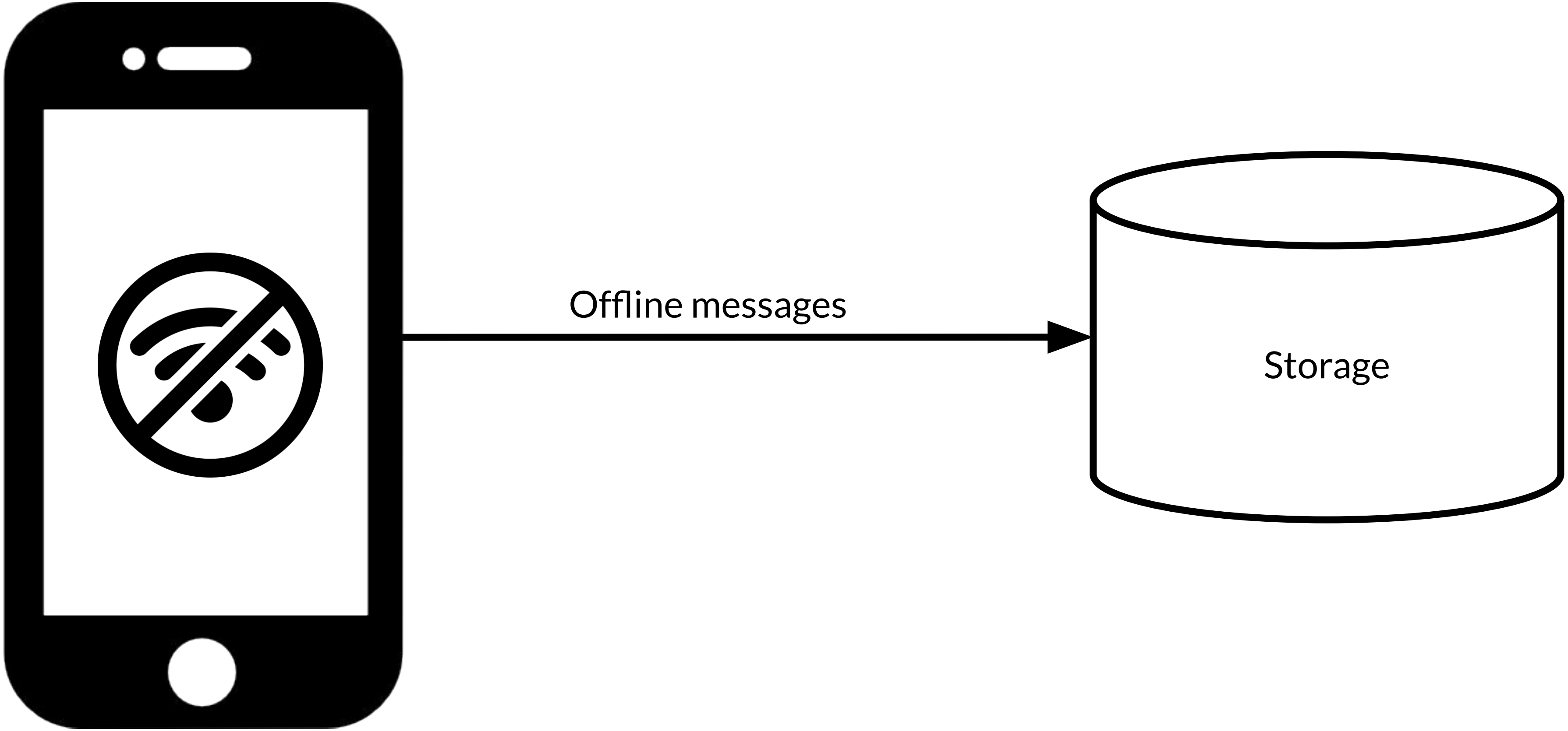
Logo from: https://whatsappbrand.com/


Offline messages
Storage

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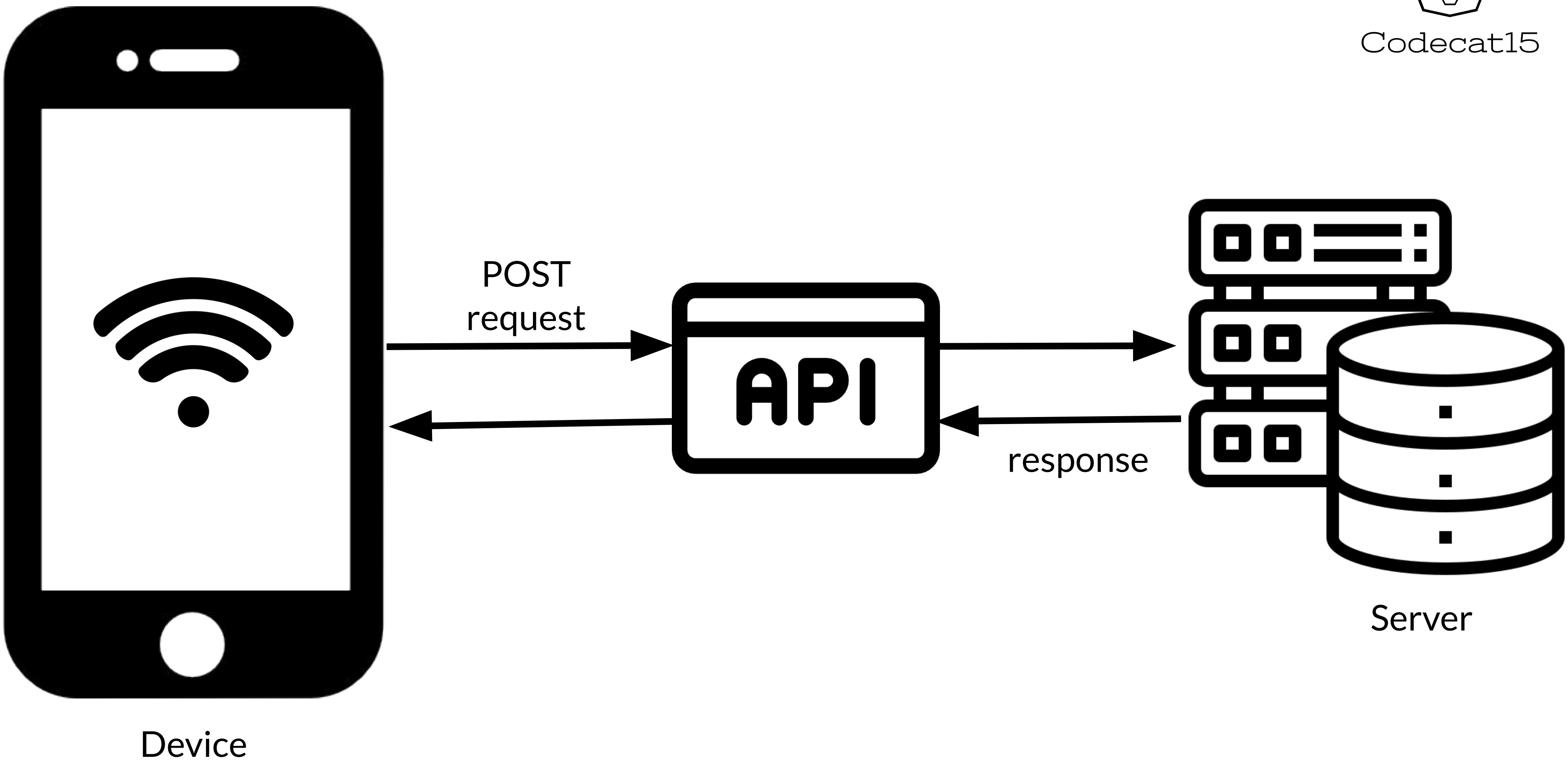

Offline storage

1. Save data locally in case of **no internet**.

2. Push all the **locally stored records to the server** when you get internet.

3. Some applications only work with local storage.

4. Such apps don’t need to send their data to the server.

Local storage

How to save this data? And what to use to save this data?

Two types of data category

1. Small data set

2. Large data set

Ways to save data locally in iOS

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1. Property list

2. User default

3. SQLite

4. Core Data

5. KeyChain

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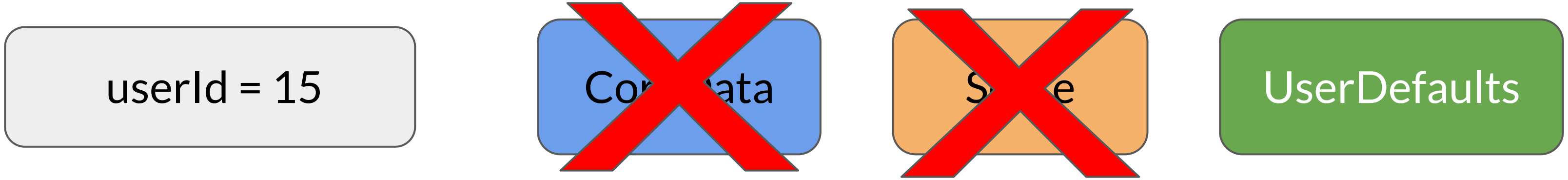


userId = 15

~~Cor ata~~

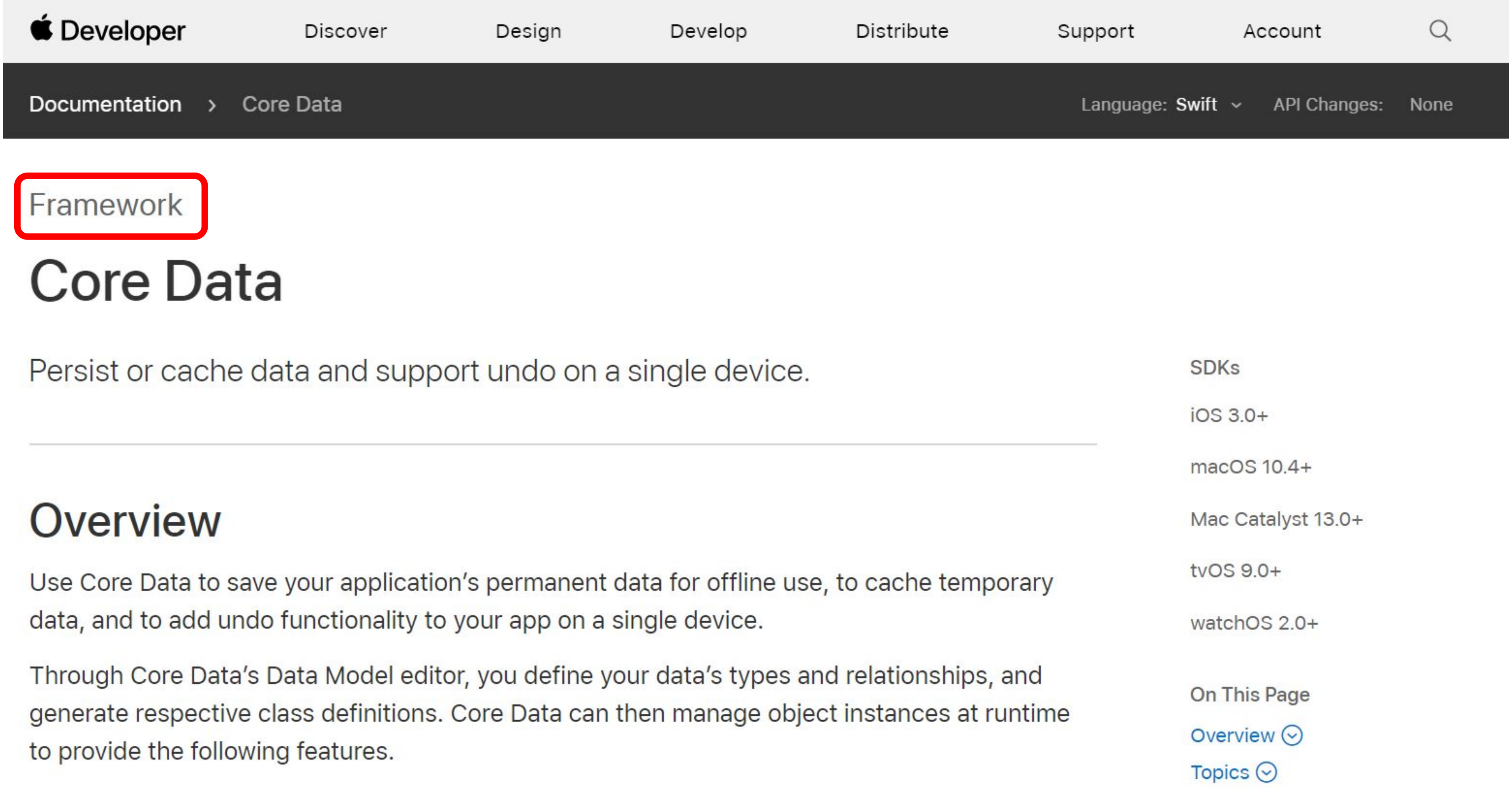
~~S e~~

UserDefaults

Core Data

Core data is a datXbase

Core data is a **Framework** 👍



Framework

Core Data

Persist or cache data and support undo on a single device.

SDKs

iOS 3.0+

macOS 10.4+

Mac Catalyst 13.0+

tvOS 9.0+

watchOS 2.0+

Overview

Use Core Data to save your application's permanent data for offline use, to cache temporary data, and to add undo functionality to your app on a single device.

Through Core Data's Data Model editor, you define your data's types and relationships, and generate respective class definitions. Core Data can then manage object instances at runtime to provide the following features.

https://developer.apple.com/documentation/coredata

Object graph

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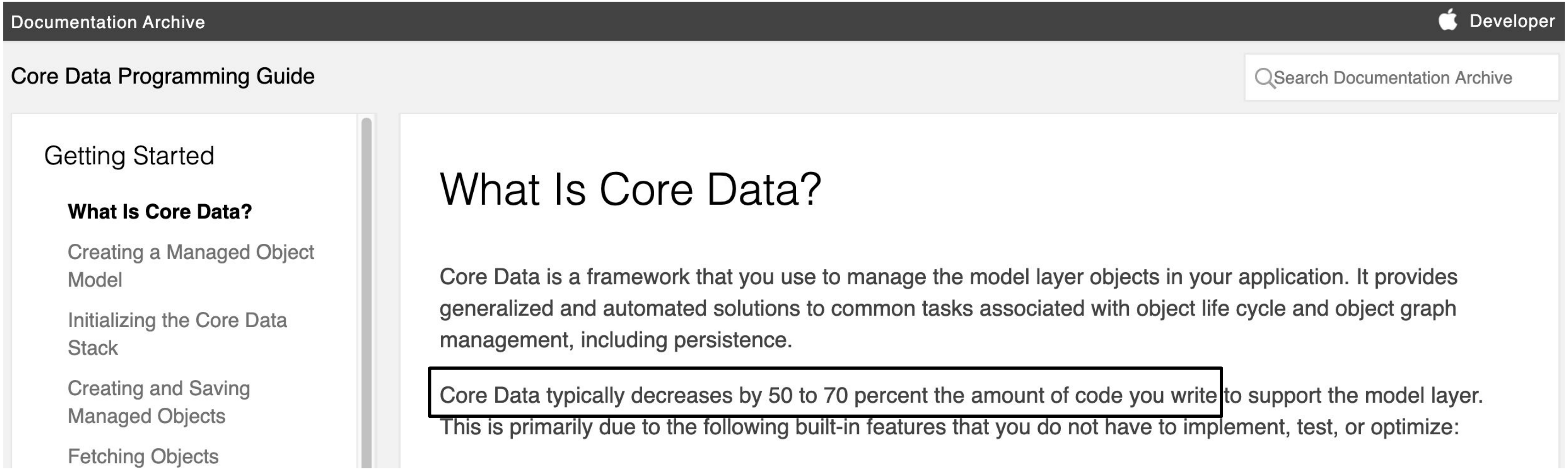


Core Data Programming Guide

Getting Started

What Is Core Data?

Creating a Managed Object Model

Initializing the Core Data Stack

Creating and Saving Managed Objects

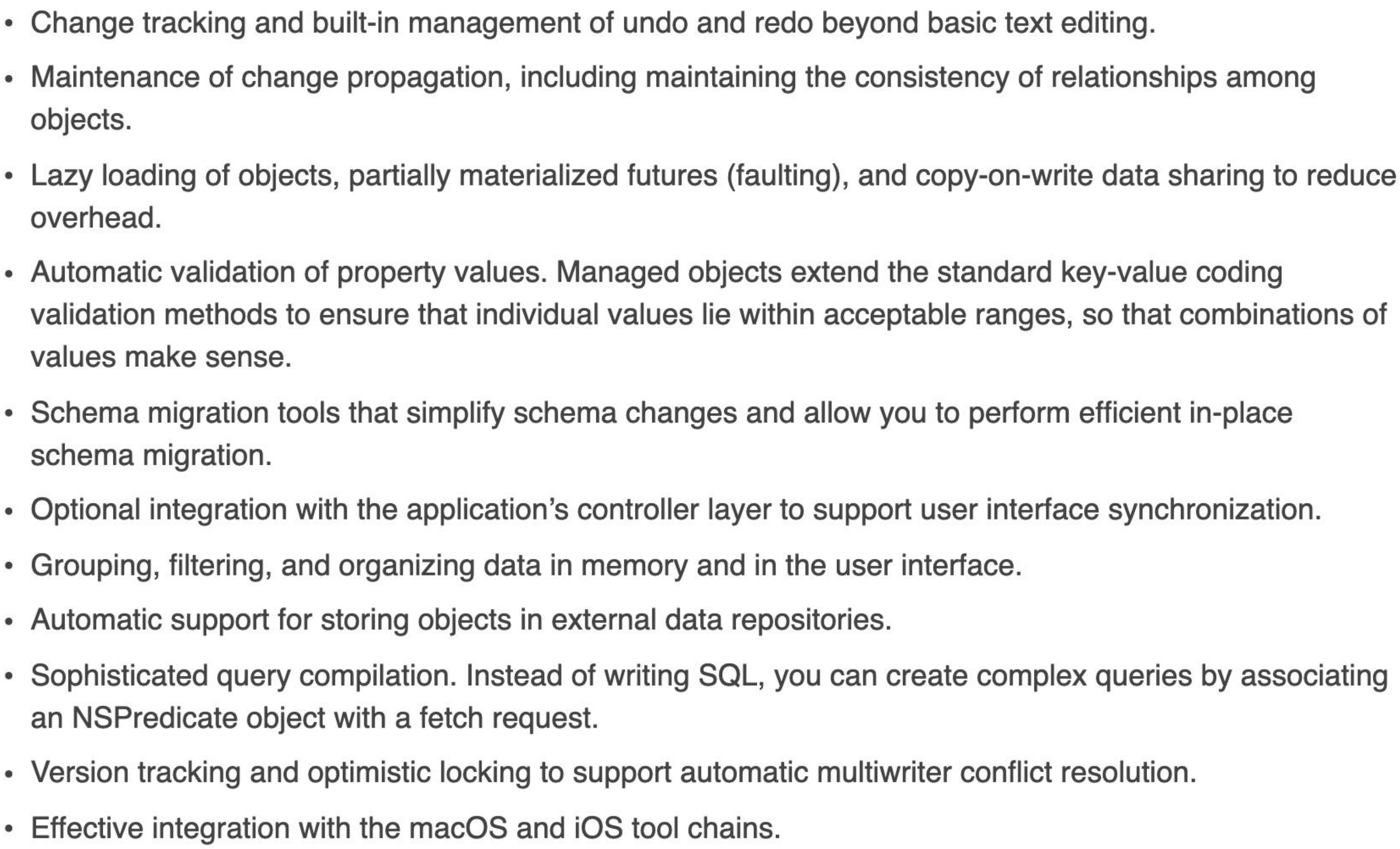
Fetching Objects

What Is Core Data?

Core Data is a framework that you use to manage the model layer objects in your application. It provides generalized and automated solutions to common tasks associated with object life cycle and object graph management, including persistence.

Core Data typically decreases by 50 to 70 percent the amount of code you write to support the model layer. This is primarily due to the following built-in features that you do not have to implement, test, or optimize:

Source: https://developer.apple.com/documentation/coredata



- Change tracking and built-in management of undo and redo beyond basic text editing.
- Maintenance of change propagation, including maintaining the consistency of relationships among objects.
- Lazy loading of objects, partially materialized futures (faulting), and copy-on-write data sharing to reduce overhead.
- Automatic validation of property values. Managed objects extend the standard key-value coding validation methods to ensure that individual values lie within acceptable ranges, so that combinations of values make sense.
- Schema migration tools that simplify schema changes and allow you to perform efficient in-place schema migration.
- Optional integration with the application’s controller layer to support user interface synchronization.
- Grouping, filtering, and organizing data in memory and in the user interface.
- Automatic support for storing objects in external data repositories.
- Sophisticated query compilation. Instead of writing SQL, you can create complex queries by associating an NSPredicate object with a fetch request.
- Version tracking and optimistic locking to support automatic multiwriter conflict resolution.
- Effective integration with the macOS and iOS tool chains.

Source: https://developer.apple.com/documentation/coredata

Codecat15 Example

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NSManagedObject

NSManagedObjectContext

NSPersistentContainer

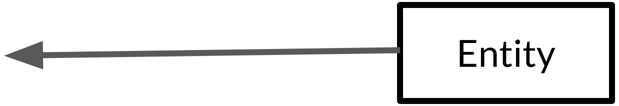
NSManagedObject

What’s an Entity ?

Employee Table

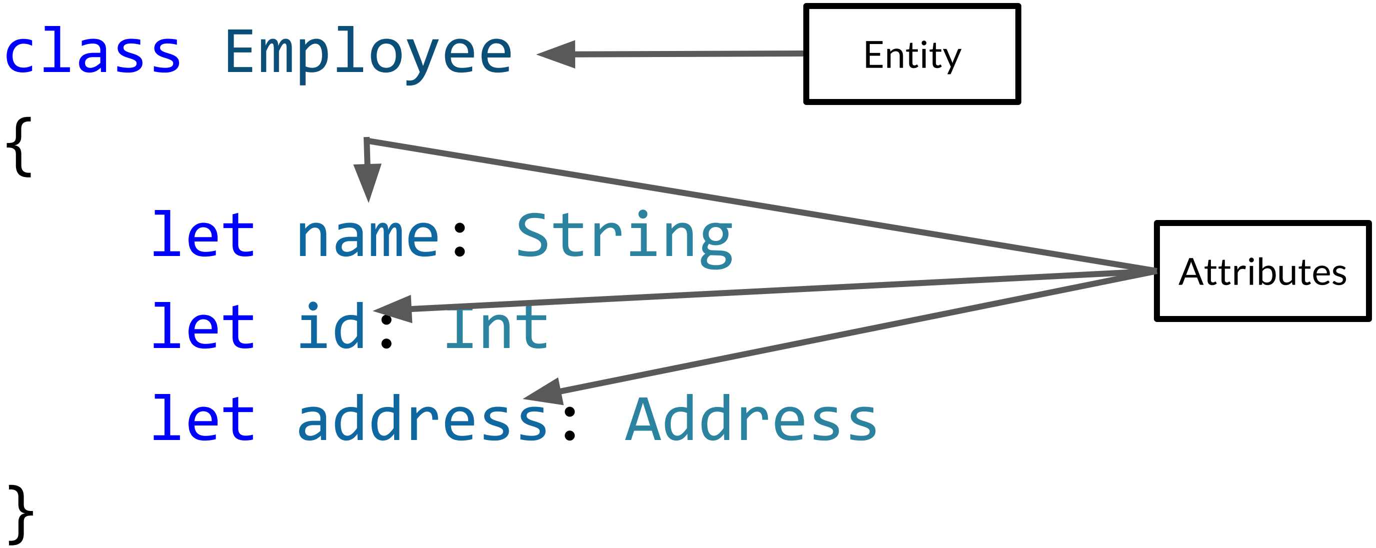
Id	Name	Last name	Address
1	Code	Cat	Cadbury Junction Rd
2	Ravi	D	GhodBunder Rd

```
class Employee
{
    let name: String
    let id: Int
    let address: Address
}
```



Entity

Models are called as Entity in database language



```
class Employee
{
    let name: String
    let id: Int
    let address: Address
}
```

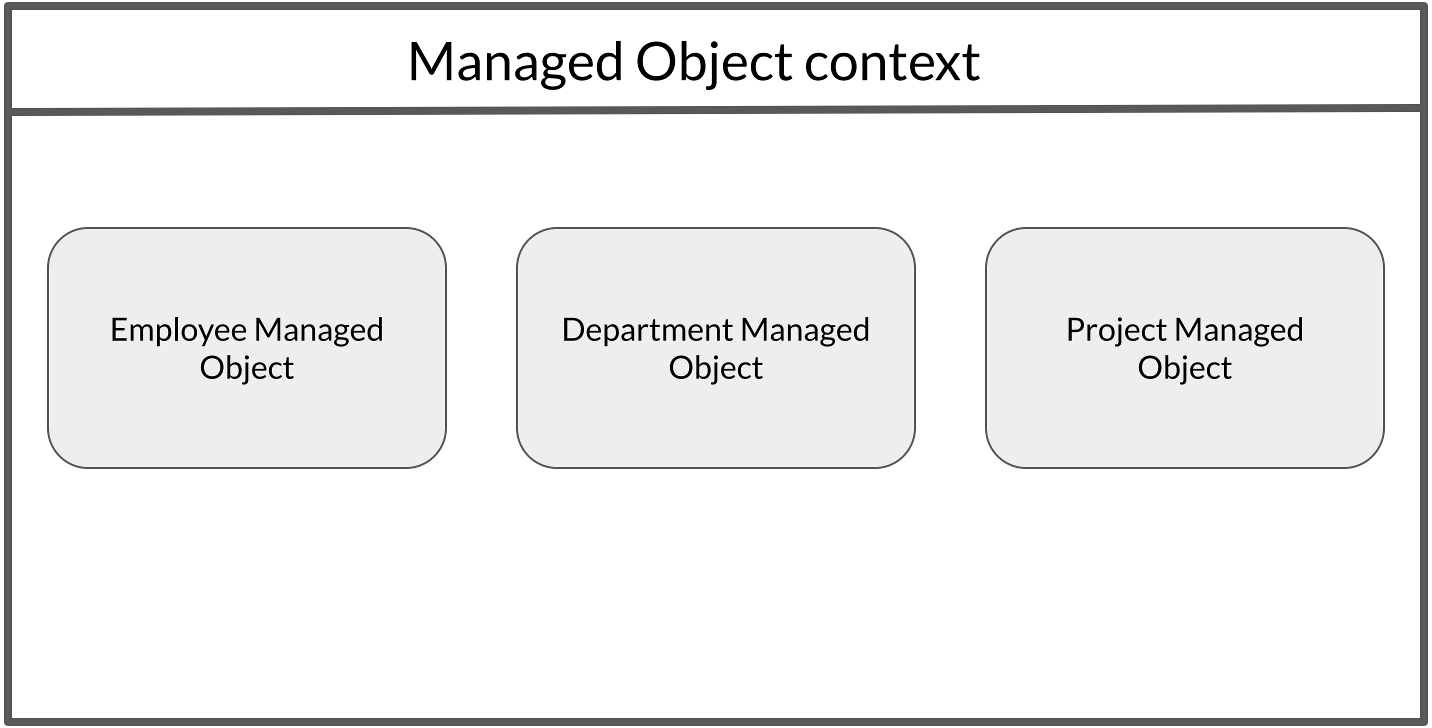
Entity

Attributes

Properties are called as Attributes in database language

NSManagedObjectContext

NSManagedObjectContext



Managed Object context

Employee Managed Object

Department Managed Object

Project Managed Object

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Basic introduction of core data

Create Read Update Delete

CRUD operations

Clean code :)

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