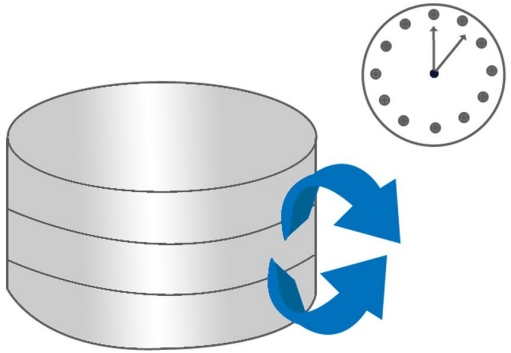
Persistencia y comunicaciones

Persistencia de Datos

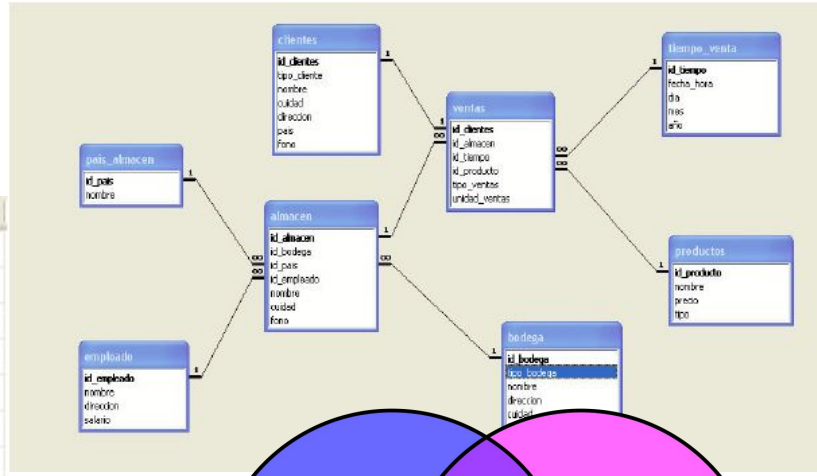
Mantener el valor de los datos procesados a través del tiempo.

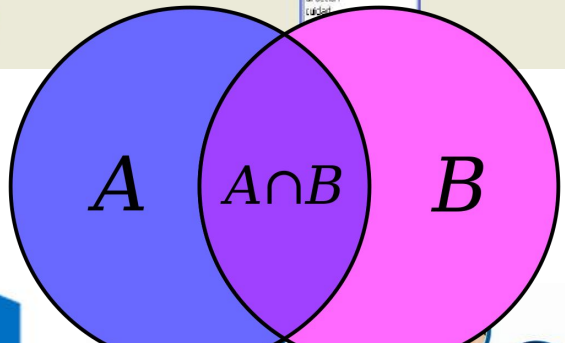
- Registros físicos
- Estructuras de datos
- Archivos
- Bases de datos jerárquicas
- Bases de datos de red
- Bases de datos relacionales
- Bases de datos no relacionales
    - Bases de datos orientadas a objetos



Bases de datos Relacionales

	FirstName	LastName	AddressLine1	City	StateProvinceCode	PostalCode
1	Ben	Miller	101 Candy Rd.	Redmond	WA	98052
2	Garrett	Vargas	10203 Acorn Avenue	Calgary	AB	T2P 2G8
3	Gabe	Mares	1061 Buskrik Avenue	Edmonds	WA	98020
4	Reuben	D'sa	1064 Slow Creek Road	Seattle	WA	98104
5	Gordon	Hee	108 Lakeside Court	Bellevue	WA	98004
6	Karan	Khanna	1102 Ravenwood	Seattle	WA	98104
7	François	Ajenstat	1144 Paradise Ct.	Issaquah	WA	98027
8	Sariya	Harnpadoungsataya	1185 Dallas Drive	Everett	WA	98201
9	Kirk	Koenigsbauer	1220 Bradf			
10	Kim	Ralls	1226 Shoe			
11	Michael	Raheem	1234 Seasi			
12	Mike	Seamans	1245 Clay F			
13	Reed	Koch	1275 West			
14	Fadi	Fakhouri	1285 Greer			
15	Paul	Singh	1343 Prosp			
16	Brenda	Diaz	1349 Steve			
17	Jack	Richins	1356 Grove			
18	John	Evans	136 Balboa			
19	Ken	Myer	1362 Some			
20	Barbara	Moreland	137 Mazatl			





Bases de datos Relacionales

Una Base de datos Relacional trabaja con:

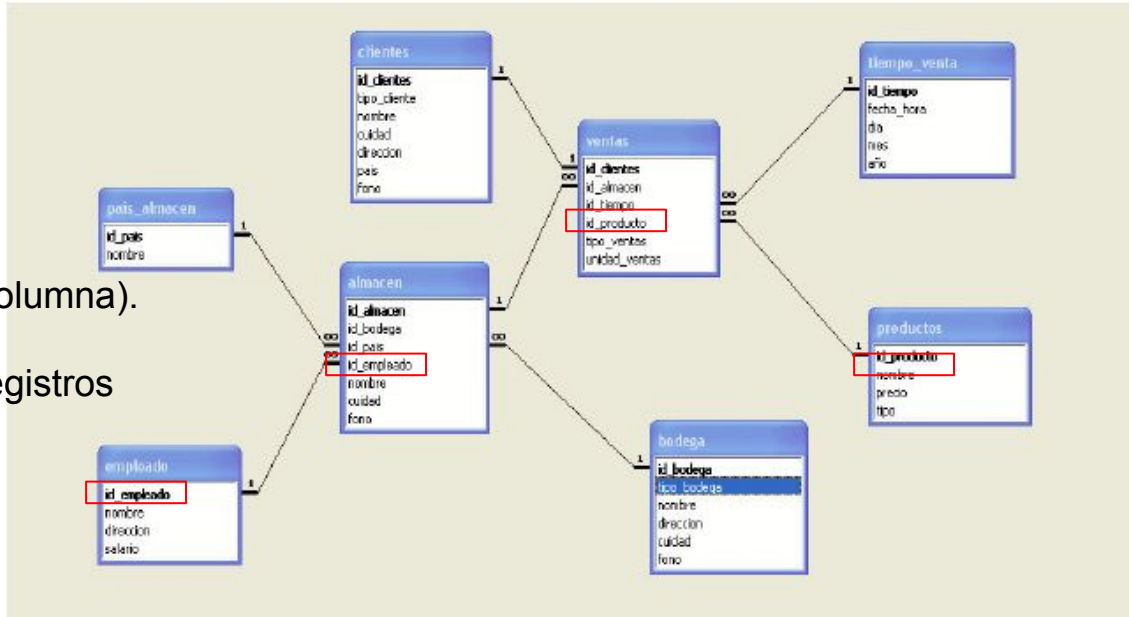
- Tablas (Entidades)
  - Llave primaria
  - Propiedades (Atributos)

  - Cada atributo pasa a ser un campo (columna).

  - Las tablas contienen tuplas, son los registros

- Relaciones entre Entidades
  - Relaciones entre Tablas
  - Llaves foráneas

- Constraints



- Es una Biblioteca en C
- Funciona como manejador de Bases de Datos Relacionales
- La base de datos se crea y se resguarda en el dispositivo
- SQL

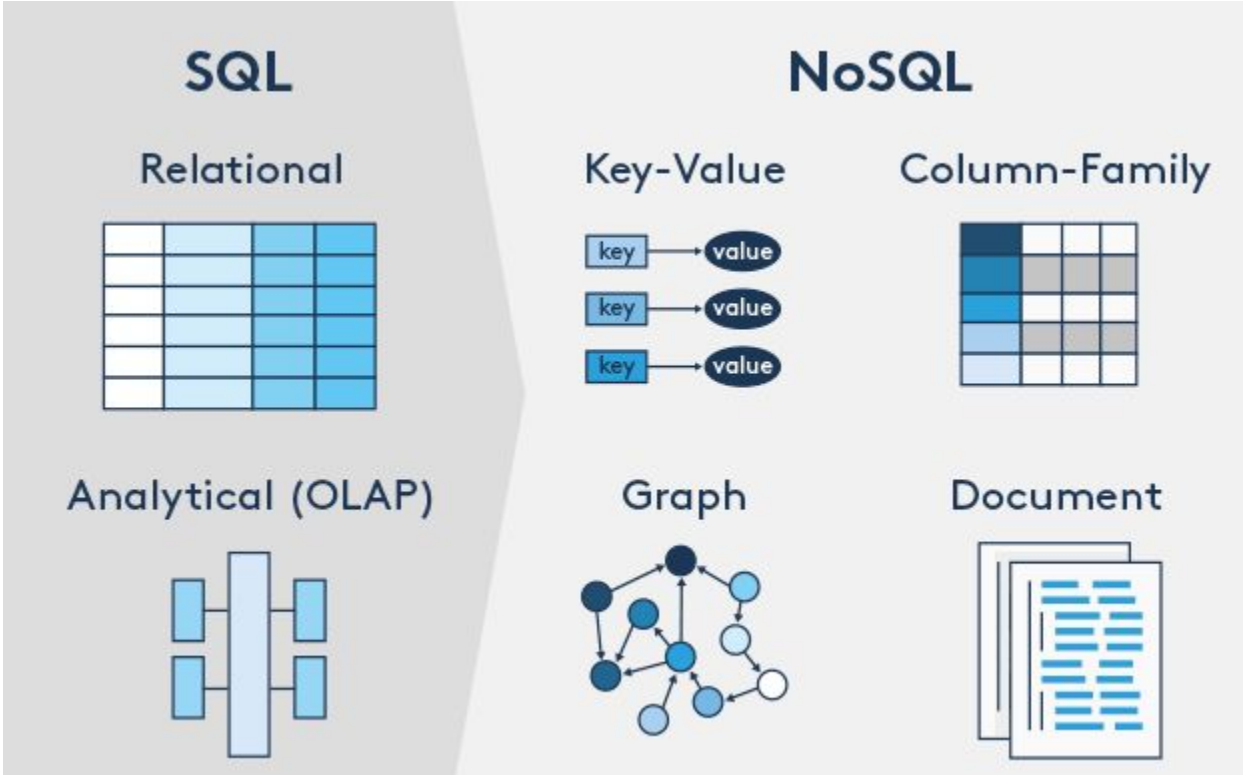
```sql
SELECT column_name(s)
FROM table_name
WHERE column_1 = value_1
  AND column_2 = value_2;
```

```sql
INSERT INTO table_name (column_1, column_2, column_3)
VALUES (value_1, 'value_2', value_3);
```

```sql
UPDATE table_name
SET some_column = some_value
WHERE some_column = some_value;
```

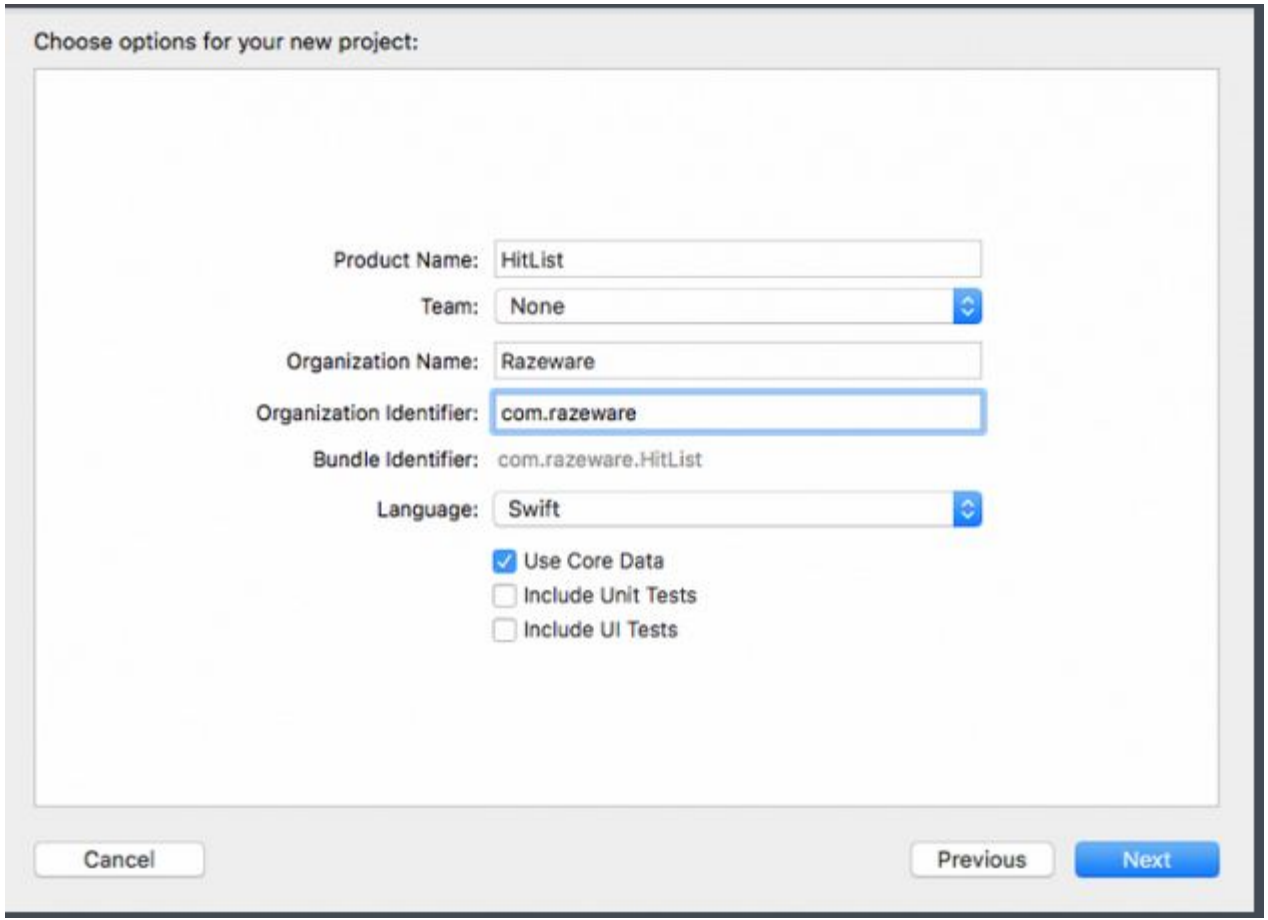
```sql
DELETE FROM table_name
WHERE some_column = some_value;
```

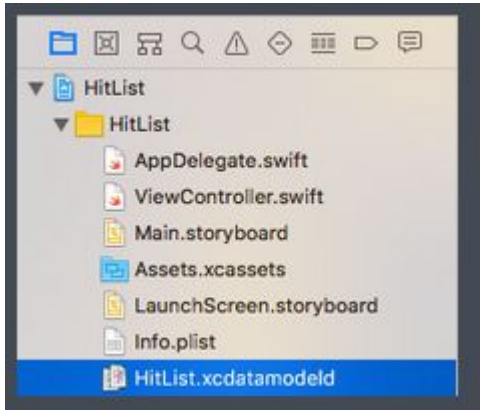
Bases de datos No Relacionales

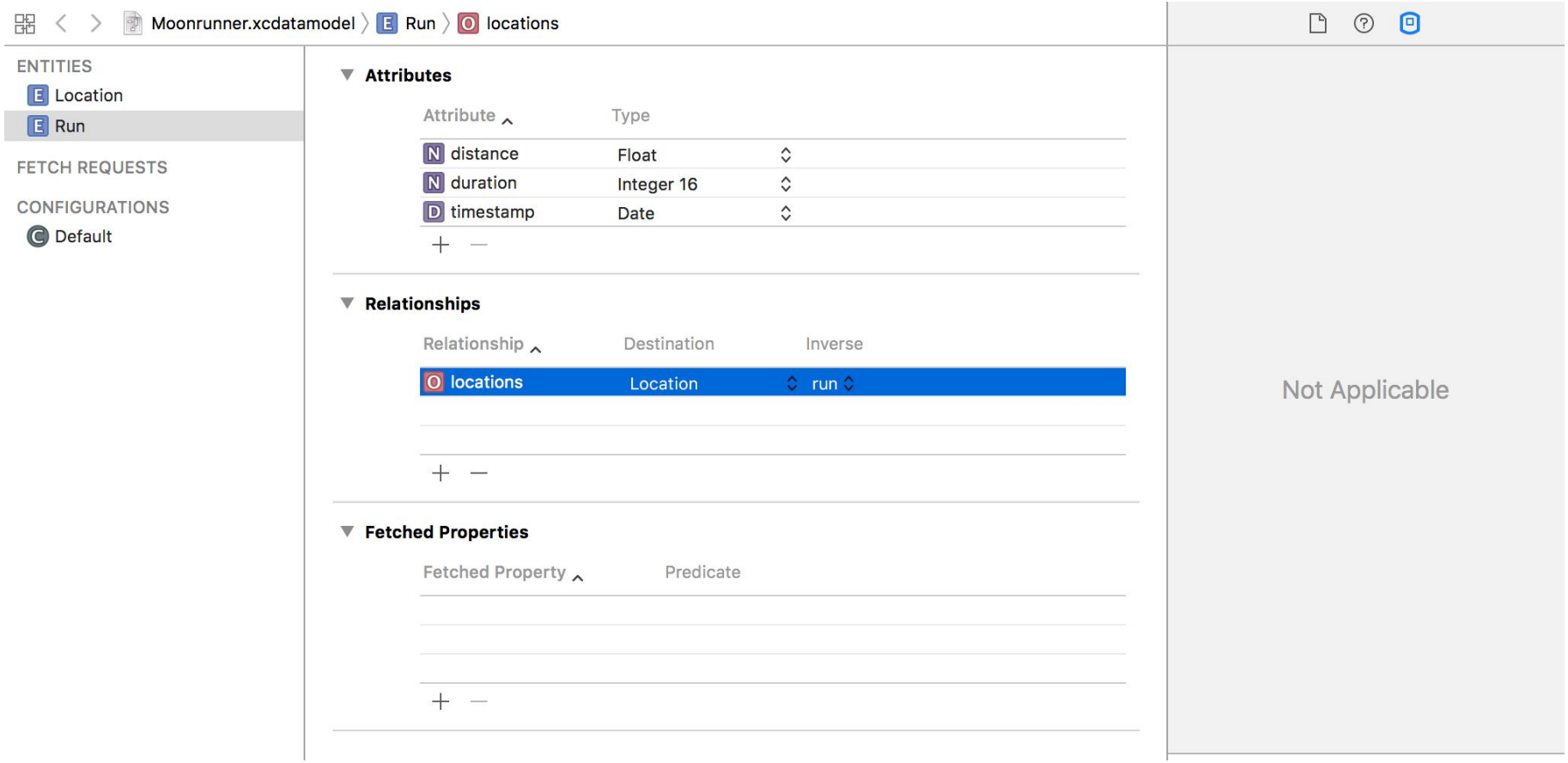


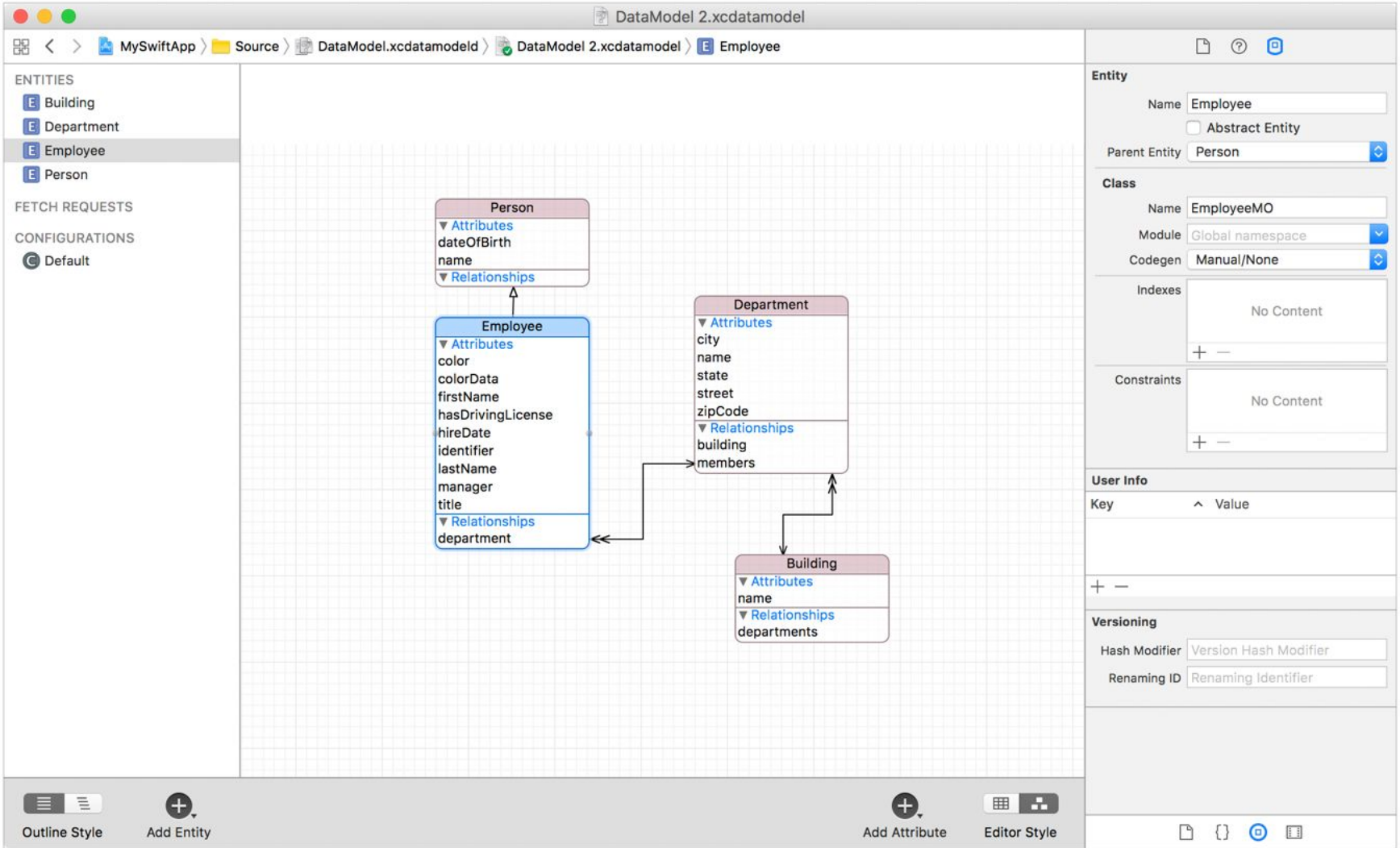
Core Data

- Es un framework basado en el modelo de bases de datos orientado a objetos
- Es un *Mecanismo de persistencia integrada*, no es una BD, NoSQL
- Va a trabajar dentro de la aplicación en un archivo *.xcdatamodeld* al que llamaremos **Modelo de Datos**
- Trabaja con Entidades - Objeto, a los que podremos asociar con Clases


Choose options for your new project:
Product Name: HitList
Team: None
Organization Name: Razeware
Organization Identifier: com.razeware
Bundle Identifier: com.razeware.HitList
Language: Swift
Use Core Data
Include Unit Tests
Include UI Tests
Cancel
Previous
Next


HitList
HitList
AppDelegate.swift
ViewController.swift
Main.storyboard
Assets.xcassets
LaunchScreen.storyboard
Info.plist
HitList.xcdatamodeld


Moonrunner.xcdatamodel
Run
locations
ENTITIES
Location
Run
FETCH REQUESTS
CONFIGURATIONS
Default
Attributes
Attribute
Type
distance
Float
duration
Integer 16
timestamp
Date
Relationships
Relationship
Destination
Inverse
locations
Location
run
Fetched Properties
Fetched Property
Predicate
Not Applicable

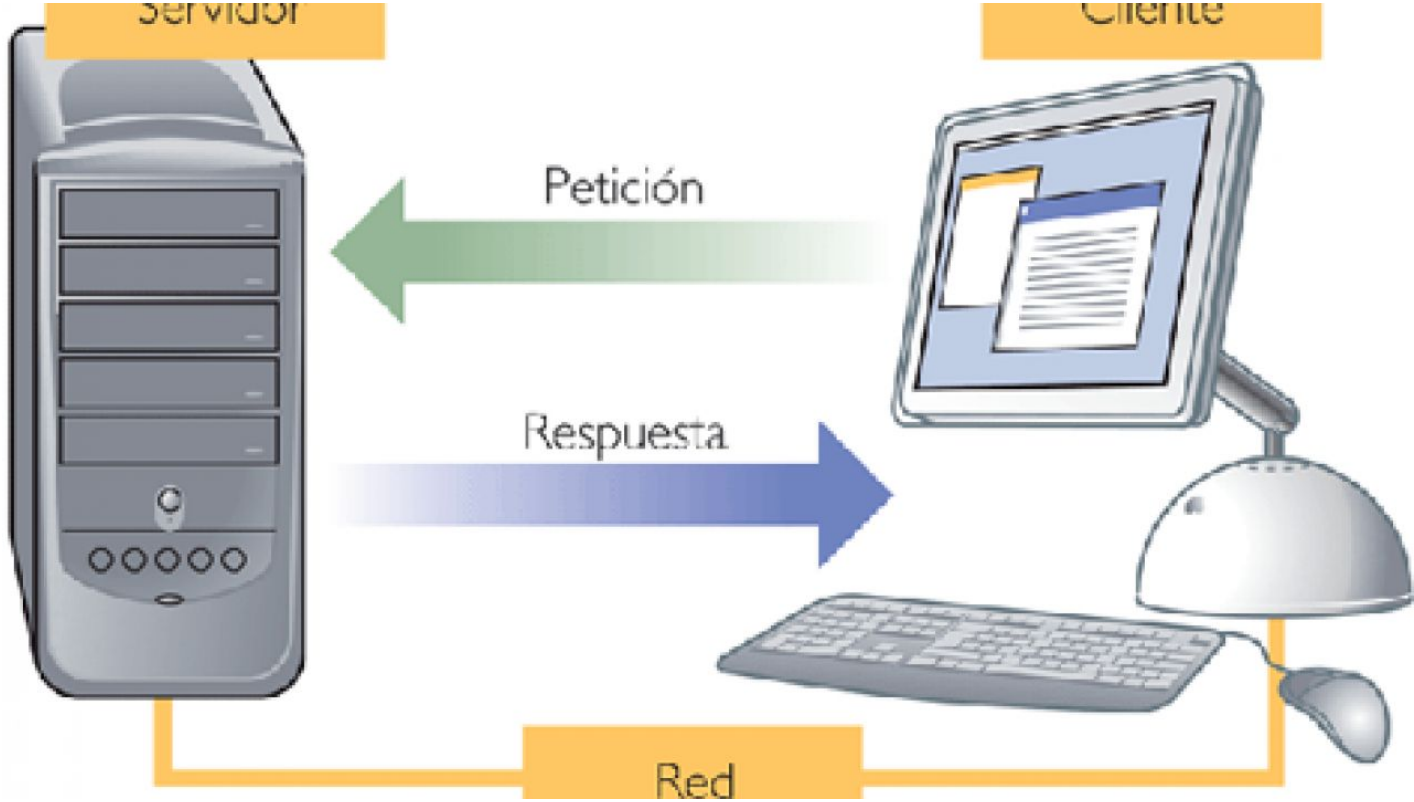

DataModel 2.xcdatamodel
MySwiftApp
Source
DataModel.xcdatamodeld
DataModel 2.xcdatamodel
Employee
ENTITIES
Building
Department
Employee
Person
FETCH REQUESTS
CONFIGURATIONS
Default
Person
Attributes
dateOfBirth
name
Relationships
Employee
Attributes
color
colorData
firstName
hasDrivingLicense
hireDate
identifier
lastName
manager
title
Relationships
department
Department
Attributes
city
name
state
street
zipCode
Relationships
building
members
Building
Attributes
name
Relationships
departments
Entity
Name
Employee
Abstract Entity
Parent Entity
Person
Class
Name
EmployeeMO
Module
Global namespace
Codegen
Manual/None
Indexes
No Content
Constraints
No Content
User Info
Key
Value
Versioning
Hash Modifier
Version Hash Modifier
Renaming ID
Renaming Identifier
Outline Style
Add Entity
Add Attribute
Editor Style


Start Here
Ciclo de vida de un ViewController
viewDidLoad only executes once.
view doesn't exist in memory
Sent viewDidLoad
Sent viewWillAppear
Sent didReceiveMemoryWarning
view visible on memory
Sent viewDidAppear
iOS sends low memory warning
Sent viewWillDisappear
Sent didReceiveMemoryWarning
view not visible on memory
Sent viewDidDisappear
Sent viewDidUnload

¿

?

Arquitectura Cliente - Servidor



Comunicaciones

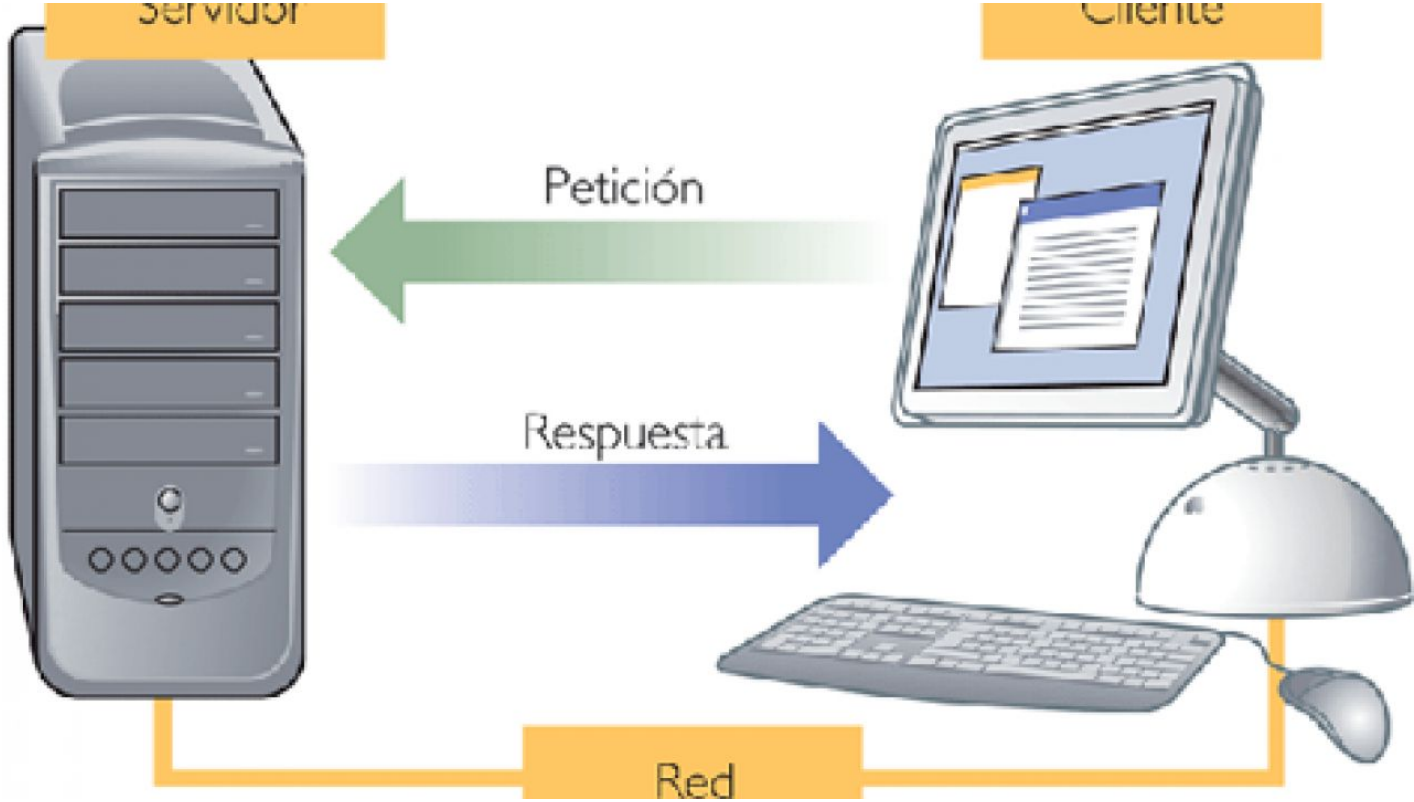
- **Internet**

- ...
- TCP/IP
    - IP *Internet Protocol*
        - FTP *File Transfer Protocol* (Archivos)
        - SMTP *Simple Mail Transfer Protocol* (Correos)
        - **HTTP *Hyper Text Transfer Protocol* (Páginas web)**
            - HTML *Hyper Text Markup Language*
        - *...*
- **...**

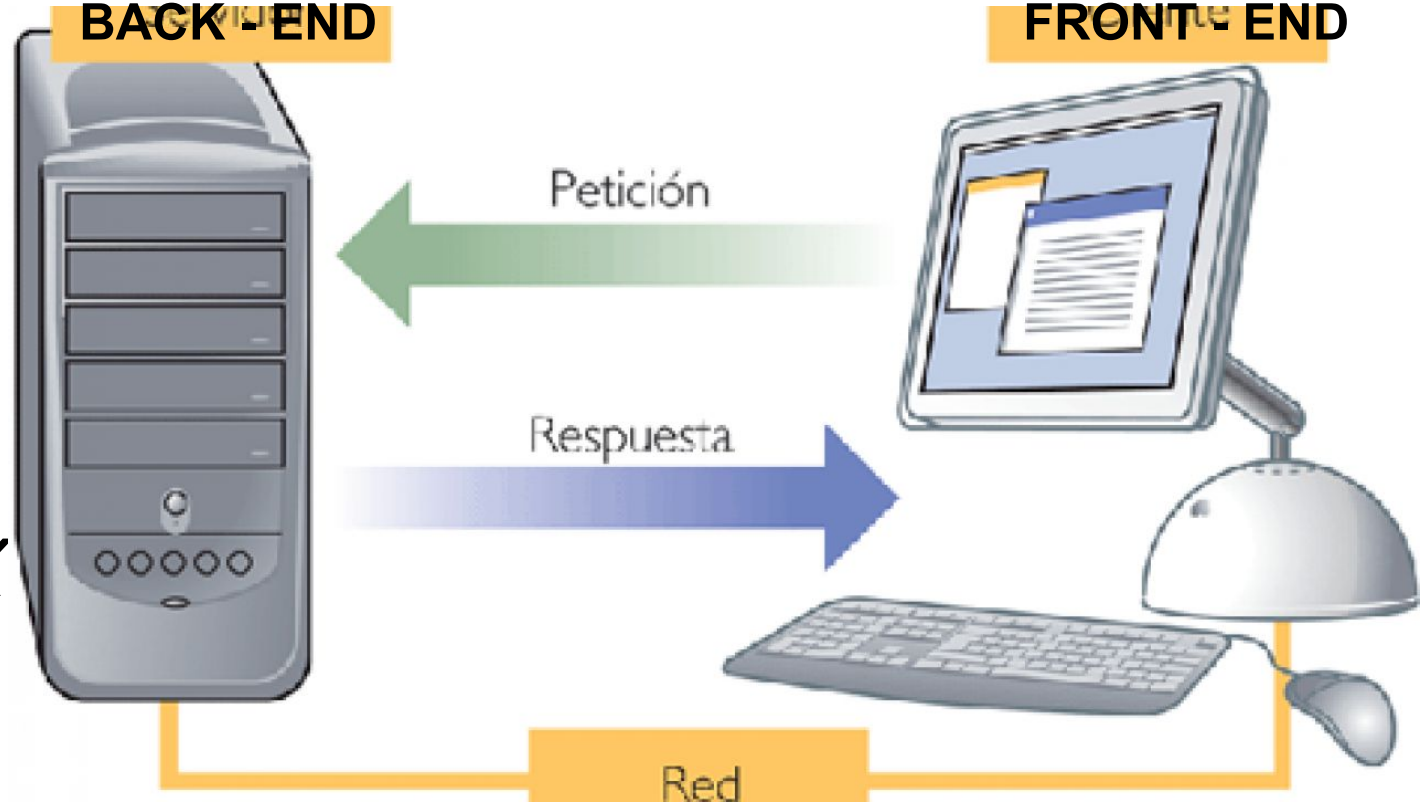
Dispositivos (Hardware)

Móviles

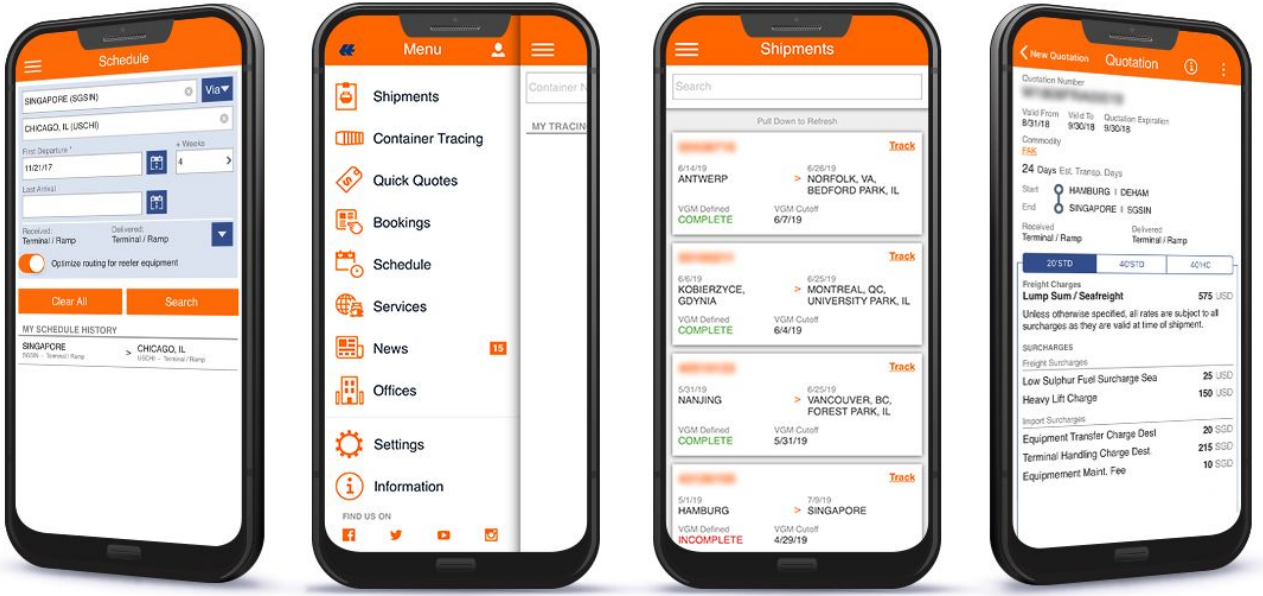
Arquitectura Cliente - Servidor



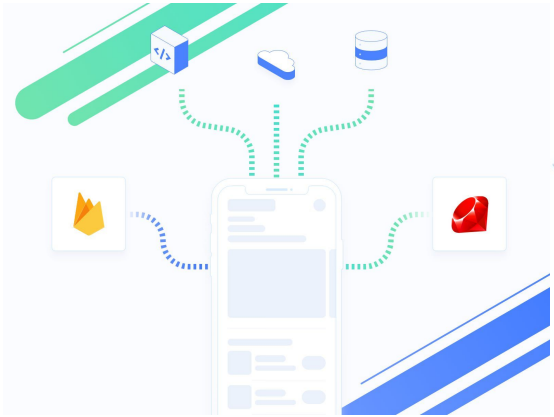
Arquitectura ‘*X*

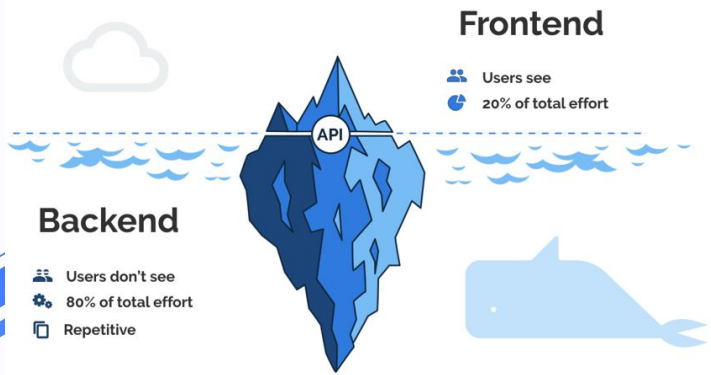


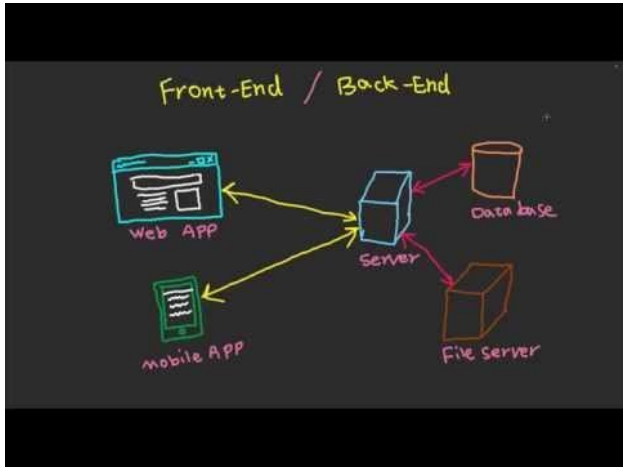
Front-End

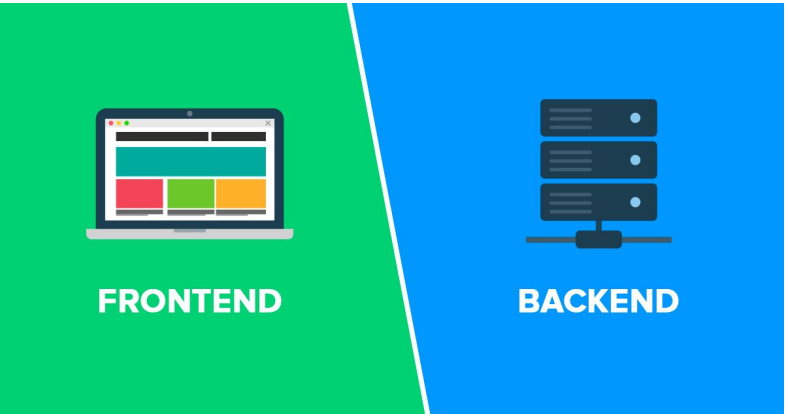

Schedule
SINGAPORE (SGSIN)
Via
CHICAGO, IL (USCHI)
First Departure *
+ Weeks
11/21/17
4
Last Arrival
Received:
Terminal / Ramp
Delivered:
Terminal / Ramp
Optimize routing for reefer equipment
Clear All
Search
MY SCHEDULE HISTORY
SINGAPORE
CHICAGO, IL
Menu
Shipments
Container Tracing
Quick Quotes
Bookings
Schedule
Services
News
15
Offices
Settings
Information
FIND US ON
Shipments
Search
Pull Down to Refresh
Track
6/14/19
ANTWERP
6/26/19
NORFOLK, VA, BEDFORD PARK, IL
VGM Defined
COMPLETE
VGM Cutoff
6/7/19
6/6/19
KOBIERZYCE, GDYNIA
6/25/19
MONTREAL, QC, UNIVERSITY PARK, IL
6/4/19
5/31/19
NANJING
6/25/19
VANCOUVER, BC, FOREST PARK, IL
5/31/19
5/1/19
HAMBURG
7/9/19
SINGAPORE
INCOMPLETE
4/29/19
New Quotation
Quotation
Quotation Number
Valid From
8/31/18
Valid To
9/30/18
Quotation Expiration
9/30/18
Commodity
FAK
24 Days Est. Transp. Days
Start
HAMBURG | DEHAM
End
SINGAPORE | SGSIN
Received
Terminal / Ramp
Delivered
Terminal / Ramp
20'STD
40'STD
40'HC
Freight Charges
Lump Sum / Seafreight
575 USD
Unless otherwise specified, all rates are subject to all surcharges as they are valid at time of shipment.
SURCHARGES
Freight Surcharges
Low Sulphur Fuel Surcharge Sea
25 USD
Heavy Lift Charge
150 USD
Import Surcharges
Equipment Transfer Charge Dest
20 SGD
Terminal Handling Charge Dest.
215 SGD
Equipmement Maint. Fee
10 SGD

Back-End

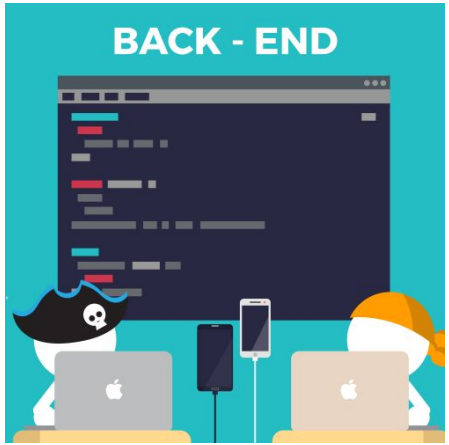



Frontend
Users see
20% of total effort
API
Backend
Users don't see
80% of total effort
Repetitive


Front-End / Back-End
Web APP
Server
Data base
mobile APP
File Server

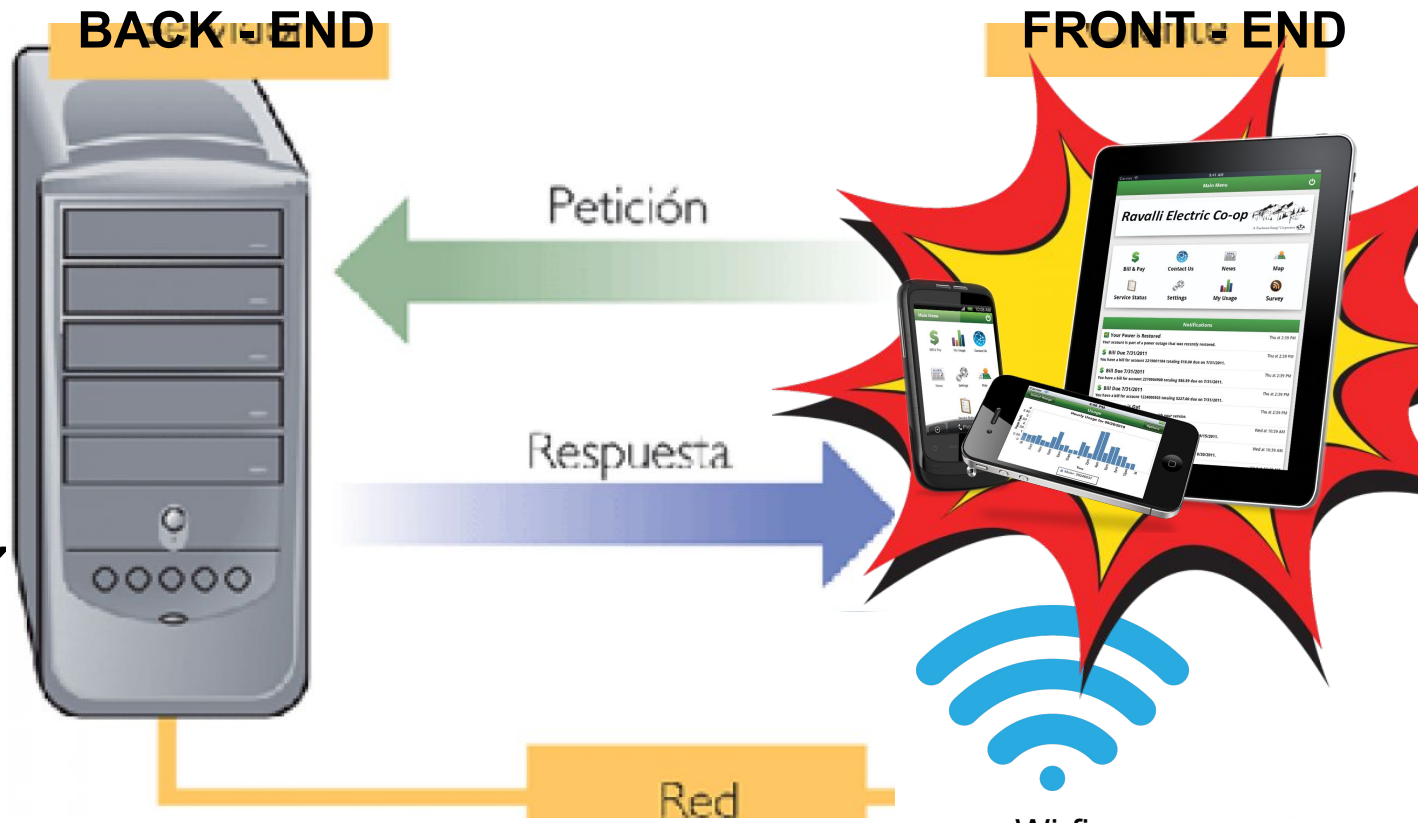

FRONTEND
BACKEND


BACKEND


BACK - END


VAPOR
node
express
Firebase
PostgreSQL
MySQL
CloudKit
kinvey
Firebase
aws
mongoDB
realm

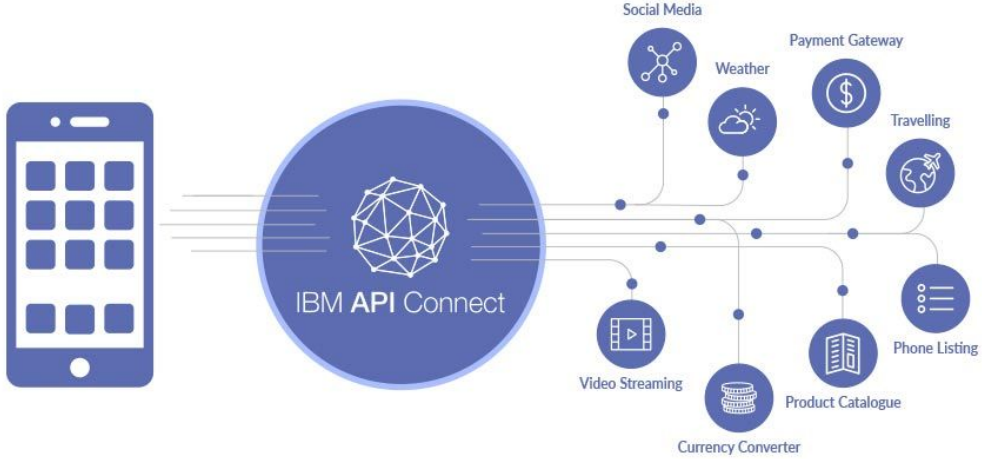
Arquitectura ‘*X*



APIs
API
Developers
Development
data
Use
documentation
Good
people
Web
Developer
Provide
Releasing
Report
may
need
also
Information
services
Many
practice
code
Make
users
JISC
using
service
project
community
software
Best
applications
Application
Potential
Different
Functionality
available
time
open
standards
others
one
support
Feedback
issues
release
Keep
Simple
Much
Access
way
work
Examples
number
difficult
consuming
external
team
allows
consider
related
often
Problems
user
new
change
clear
Level
well
find
interfaces
Document
possible
without
Written
Case
Research
Useful
Appendix
etc
List
Blog
Survey
system
allow
commercial
technical
help
might
like
needs
get
Systems
set
future
ideas
based
Languages
Technology
UK
functions
interface
working
Contact
making
Know
projects
Creation
area
party
include
resources
appropriate
something
important
Requirements
made
Education
example
Easy
just
released
existing


Android Google Maps
API
learn2crack.com

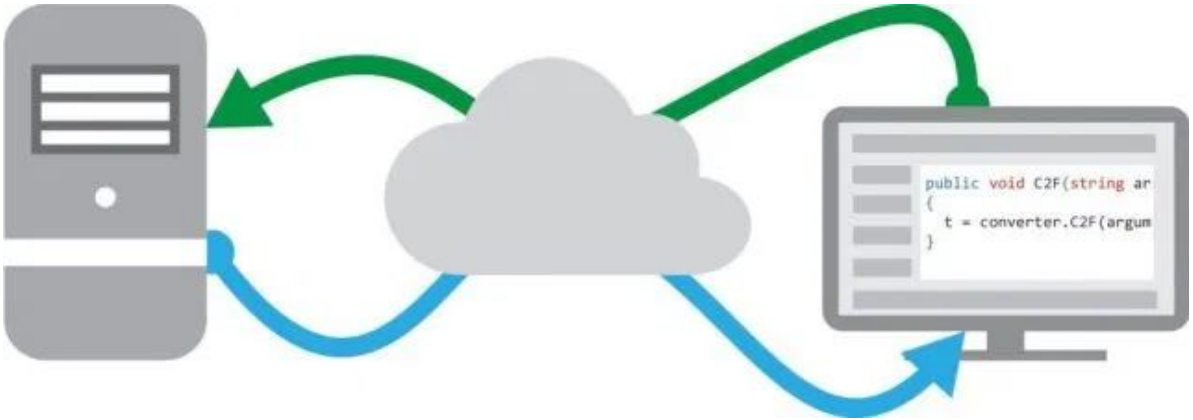

WEATHER API
NEWPORT BEACH, CA
SUNNY
86°
SUN 88°
MON 80°
TUES 82°
WED 78°
THURS 80°
FRI 88°
SAT 90°


Social Media
Payment Gateway
Weather
Travelling
IBM API Connect
Video Streaming
Phone Listing
Product Catalogue
Currency Converter


API

Tipos de API

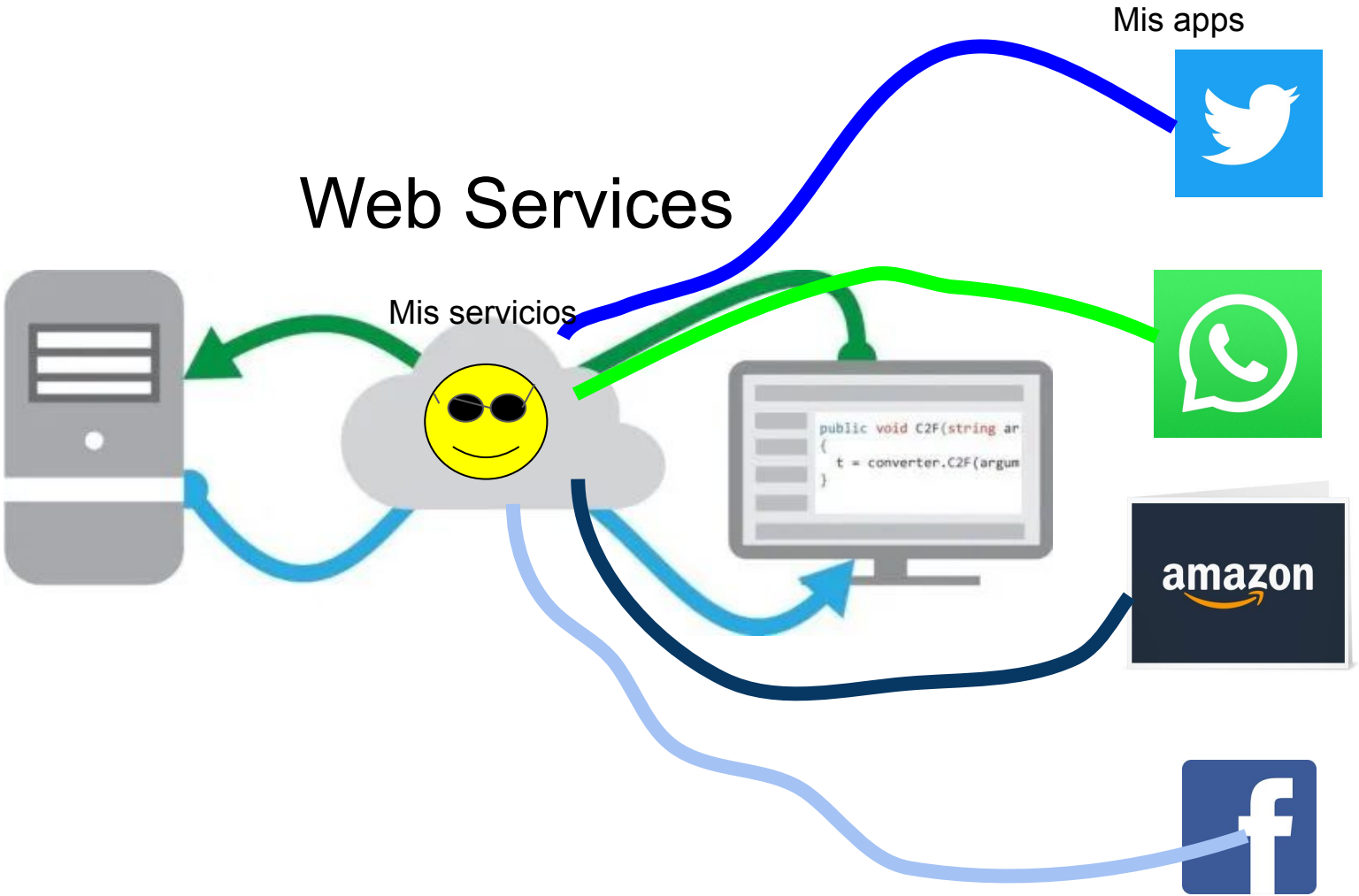
Web Services



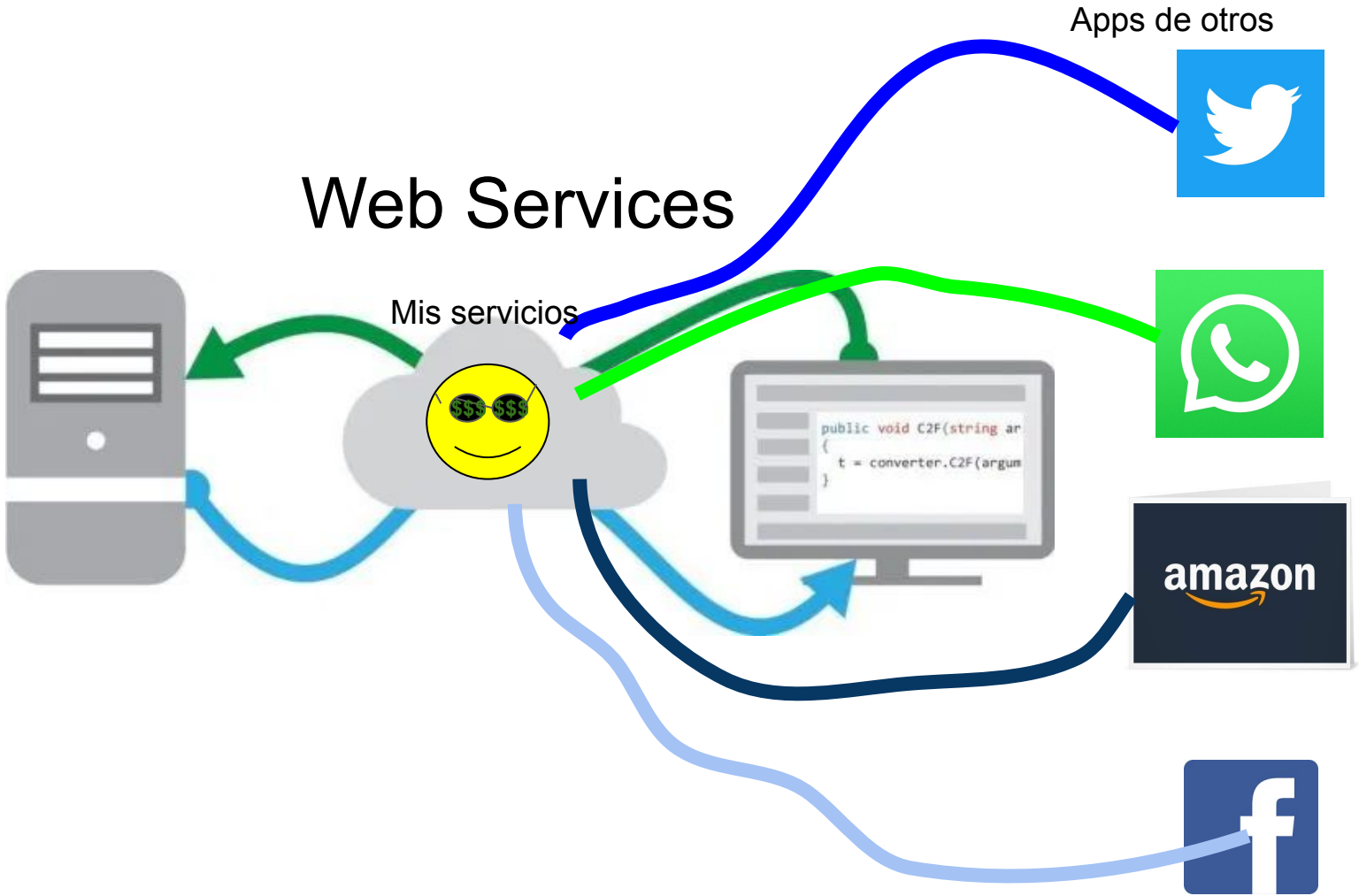
XML

JSON

Tipos de API

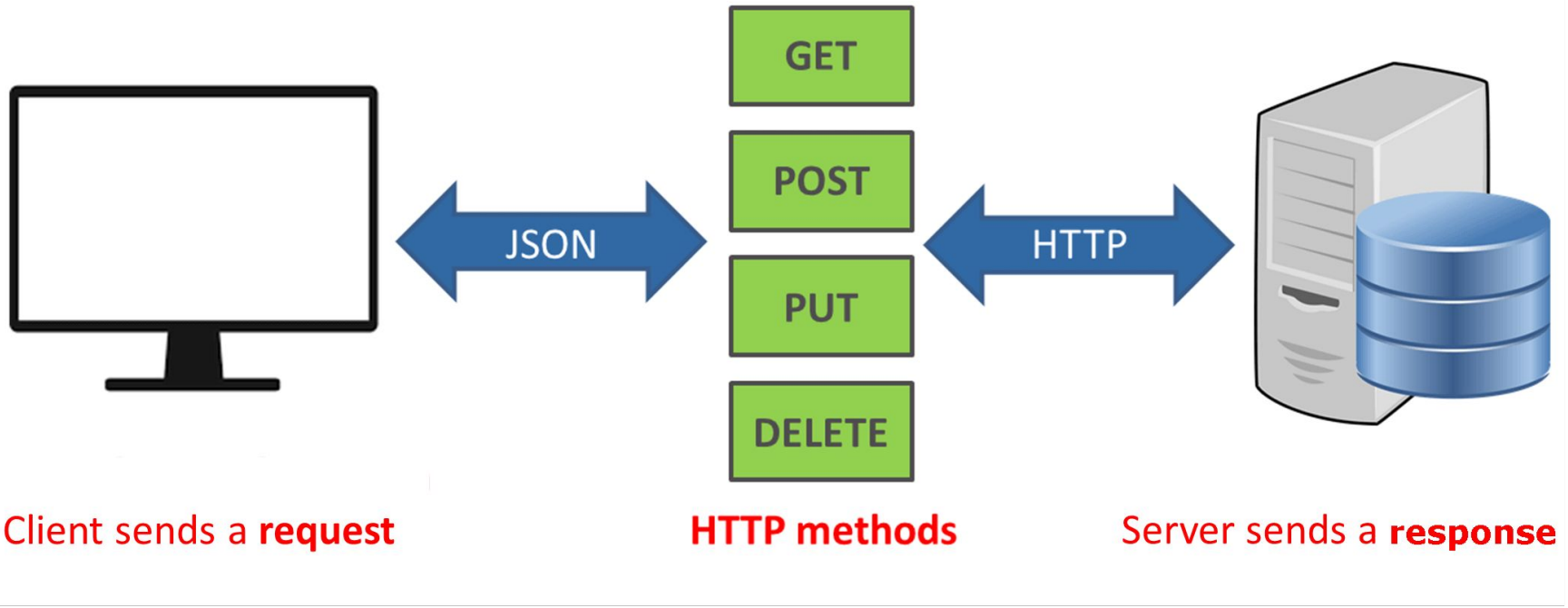

Mis apps
Web Services
Mis servicios
public void C2F(string ar
{
t = converter.C2F(argum
}
amazon

Tipos de API


Apps de otros
Web Services
Mis servicios
public void C2F(string ar
{
t = converter.C2F(argum
}
amazon

Tipos de API
Servicios web

API REST



Back-End de Swift

VAPOR

Packages:

- PostgreSQL
- MySQL
- SQLite
- Crytpo
- Web Socket
- Auth

- Fluent
- Service
- Redis
- Leaf
- HTTP
- JWT

MBaaS *Mobile Backend as a Service*

- Realm Studio
- Base de datos
- Integración de datos síncrona
- Comunicaciones Offline
- Respaldos
- Mecanismos de Cifrado
- Escalabilidad
- Monitoreo y Alertas
- Global Clusters

Firebase

- Cloud Firestore
- Machine Learning Kit
- Authentication
- Cloud Storage
- Hosting
- Realtime Database

- Crashlytics
- Test Lab
- Performance Monitoring
- App Distribution
- In-App Messaging
- Google Analytics

- Predictions
- A/B Testing
- Cloud Messaging
- Remote Config
- Dynamic Links

mobile services

- **AWS Amplify**
  - Control de acceso
  - Machine Learning
  - Mecanismos de Seguridad
  - Escalabilidad
- **Amazon Cognito**
  - Control de acceso SAML
- **AWS Appsync**
  - Integración de datos síncrona
- **Amazon API Gateway**
  - Crear y usar API’s RESTFUL
- **AWS Device Farm**
  - Herramientas y ambiente de pruebas
- **AWS Amplify Console**
  - Hosting
- **AWS Mobile Hub**
  - Monitoreo y análisis
  - Base de datos
- **AWS Pinpoint**
  - Herramientas para análisis y marketing