

iOS Networking with REST APIs

WEB SERVICES AND NETWORKING



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Module Summary

API vs. REST API overview

JSON data formatting

iOS networking basics

CRUD operations

GitHub API documentation



What Is an
API?

Application Programming Interface

Controls access points

Formatted as URLs



URL Formatting

HTTP or HTTPS scheme

- HyperText Transfer Protocol

Host address

- api.music.com

Path

- /artists.php
- /artists.php?artistID=23

<https://api.music.com/artists.php?artistID=23>



What Is a REST API?

Representational State Transfer

- Distributed hypermedia systems guidelines
- Originally proposed by Roy Fielding
- Consistency and efficiency

Path formatting is different

- /artists
- /artists/23

<https://api.music.com/artists/23>



JSON Basics

Javascript Object Notation

- Human readable
- Easily generated



JSON Structure

Breakdown

JSON object

Objects have members

Members are key/value pairs

Value types

Arrays can also be values

Example

`{}`

`{members}`

`"key name": value`

Strings, numbers, objects, booleans, null

`[value, value, value]`



```
{  
  "artist": "A Tribe Called Quest",  
  "album": "Midnight Marauders",  
  "rating": 5,  
  "isAwesome": true,  
  "current_members": [  
    "Q-Tip", "Ali Shaheed Muhammad"  
  ]  
}
```

- ◀ Artist value is "A Tribe Called Quest"
- ◀ Album value is "Midnight Marauders"
- ◀ Rating value is the integer 5
- ◀ IsAwesome value is bool true
- ◀ Current Members value is an array of string

iOS Networking and CRUD Basics

URLSession

Coordinator for network tasks

Needs an instance to perform request

- Shared
- Default
- Ephemeral

Can handle authentication

Thread safe by default



A Networking Conversation

Client

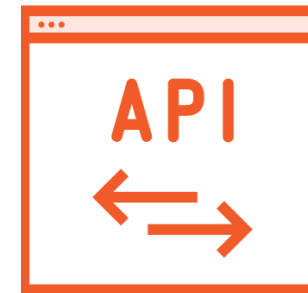


URLSession,
task, URL



JSON Data

REST API



Database



CRUD Operations

Create

Read

Update

Delete

HTTP Verbs

POST

- Creates new data object

GET

- Reads data

PUT

- Updates existing data

DELETE

- Erases existing data

