

MOBILE DEVELOPMENT NETWORKING: PART 1

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NETWORKING

LEARNING OBJECTIVES

- › Recognize the benefits of JSON and REST
- › Identify the benefits of using NSURLSession
- › Evaluate and parse data returned in JSON format
- › Integrate cocoa pods into our projects and use SwiftyJSON for better parsing

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REVIEW OF PERSISTENCE

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INTRO TO NETWORKING

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SOME TERMINOLOGY

- Request: The concept of what is sent to some remote server somewhere. Has a method, may include parameters
 - E.g. Get <http://google.com>
 - Get the contents of google.com
- Response: The response that the web server gives back. Includes a status code and, possibly, content
- HTTP: A very common protocol for making network requests
- JSON: A way we format data to make it machine readable
 - e.g. {"name": "rudd"} is a simple blob of JSON

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WHAT CAN GO WRONG?

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WHAT CAN GO WRONG?

- No network connection (client-side)
- Destination offline (server-side)
- The network can be slow
- The request can not be authorized
- Lost network connection mid-request/response
- Lots more...

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HANDLE ERRORS

- If you make network connections in your app, it's a best practice to handle errors when possible, and communicate errors to the customer when not

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BEST PRACTICES

- Users get charged for data: Use only what you must
 - They do not share a filesystem
- Allow users to cancel lengthy downloads
- When something fails, either handle it or message the user
- Cache when needed (this is a little more advanced)

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IOS NETWORKING

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NSURLSESSION

- A shared context in which our requests are made
 - Configurable way to share state among connections
 - e.g. “All my connections should use a cookie...”
 - Can queue up several types of connections
 - Download: For downloading files
 - Upload: For uploading files
 - Data: For small bits of data transfer, what we’ll use today

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NSURLSession SYNTAX

```
if let url = NSURL(string: "http://somewebsite.com/params") {  
    let task = NSURLSession.sharedSession().dataTaskWithURL(url,  
completionHandler: { (data, response, error) -> Void in  
        println(response)  
        println(data)  
        println(error)  
        var stringOfData = NSString(data: data, encoding:  
NSURLSessionStringEncoding)  
        println(stringOfData)  
    })  
    task.resume()  
}
```

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NETWORKING CODE-ALONG

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GROUP ASSIGNMENT

- Add the display of networking errors to this project.
- Display an error message to the user, along with the error that gets returned from the call.
- Bonus: Display the HTML content of the request in a web view

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JSON

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JSON

- JSON is a data-interchange format
 - i.e. A way of formatting text so it's easily machine-readable and network-transferable
- Similar to the Plists we've been working with, it can store:
 - Arrays
 - Dictionaries
 - Strings
 - Numbers
 - And any combination of the above

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JSON

- Does not specify anything about formatting, like HTML does

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JSON EXAMPLES

- `{"name": "rudd"}` // A 'dictionary'-esque data structure
- `["rudd", "travis", "sean"]` // An array of strings
- `{"response": "ok", "content": {"message": "hello world!"}}` // A complex structure
- `[1, 2, "rudd"]` // Note that JSON does not specify type information

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JSON CODE WALKTHROUGH

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GROUP ASSIGNMENT

- Change the app to display recent Mashable headlines, using:
 - <http://mashable.com/stories.json>
- Bonus 1: Display author in home screen table view
- Bonus 2: Print the titles along with the webview
- Bonus 3: Make larger table view cells that display the content of the article, in text format