GENERAL ASSEMBLY

MOBILE DEVELOPMENT NETWORKING: PART 1

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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

REVIEW OF PERSISTENCE

INTRO TO NETWORKING

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”: “tedi”} is a simple blob of JSON

WHAT CAN GO WRONG

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...

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

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)

IOS NETWORKING

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

NSURLSESSION SYNTAX

```
1  if let url = NSURL(string: "http://somewebsite.com/params") {
2      let task = NSURLSession.sharedSession().dataTaskWithURL(url,
3          completionHandler: { (data, response, error) -> Void in
4          println(response)
5          println(data)
6          println(error)
7          var stringOfData = NSString(data: data, encoding: NSUTF8StringEncoding)
8           println(stringOfData)
9      })
10     task.resume()
11 }
12
```

NETWORKING CODE-ALONG

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

JSON

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

JSON

- Does not specify anything about formatting, like HTML does

JSON EXAMPLES

```
1  {“name”: “tedi”} // A ‘dictionary’-esque data structure
2  [“tedi”, “thomas”] // An array of strings
3  {“response”: “ok”, content: {message: “hello world!”}} // A complex structure ▸ [1, 2, “tedi”]
4  // Note that JSON does not specify type information
```

JSON CODE WALKTHROUGH

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