

MOBILE DEVELOPMENT

LESSON 15 NETWORKING

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GETTING STARTED

LEARNING OBJECTIVES

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- Review writing to files via assignment
- Introduction to databases
- Introduction to Core Data
- In class assignment

NETWORKING PT. 1

INTRO TO NETWORKING

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

INTRO TO NETWORKING

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)

GETTING STARTED

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

INTRO TO NETWORKING

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
```

GETTING STARTED

JSON

INTRO TO NETWORKING

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

INTRO TO NETWORKING

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
```


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