

HTTP Protocol

Slides

Client-side Web Access

Slides

Family Map Server Web API

Slides

Threads / Main (or UI) Thread

By default, Android apps run on a single thread. This thread is called the “main” or the “UI” thread. All operations on UI widgets must be done on the UI thread.

Apps can perform multiple concurrent actions by creating additional threads. (Each thread has its own runtime stack).

Apps are not allowed to block on the main (or UI) thread. Thus, long-running I/O operations such as HTTP requests must be done on a separate thread. Android’s AsyncTask class can be used to create a new thread and run a blocking I/O operation.

Asynchronous Web Access

Async Web Access code example

AsyncTask generic parameters: 1. doInBackground input type, 2. onProgressUpdate input type, 3. doInBackground result / onPostExecute input type

doInBackground called on new thread

onProgressUpdate / onPostExecute called on main (or UI) thread

Family Map Application

HttpClient class with HTTP Get/Post operations

ServerProxy class with Login(LoginParams), Sync(SyncParams) methods

Asynchronous methods with callbacks

LoginCallback(LoginResult) and SyncCallback(SyncResult)

Login Task

Sync Data Task (re-used for “Sync Data”)

Tasks invoke callbacks in their onPostExecute methods