

Emma Hulme

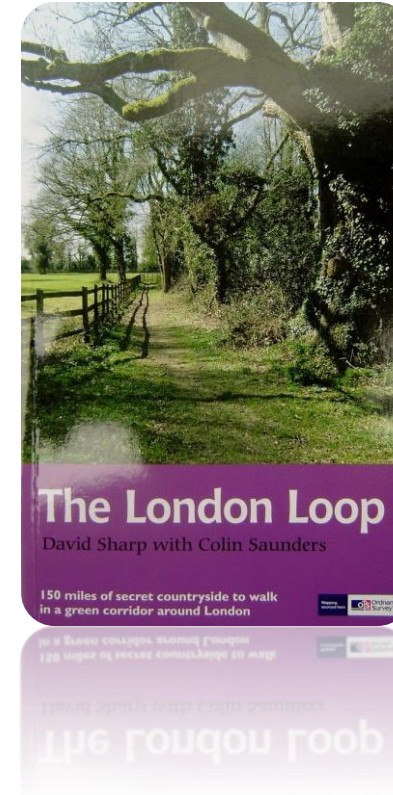
Supervised by Professor Michael Huth

# London Loop

A mobile guide through the London Outer Orbital Path

# What is the London Loop?

- ▶ The London Loop is a signed 150-mile walk along the edge of Outer London
- ▶ It is divided into 24 shorter walks of from 3 to 10 miles

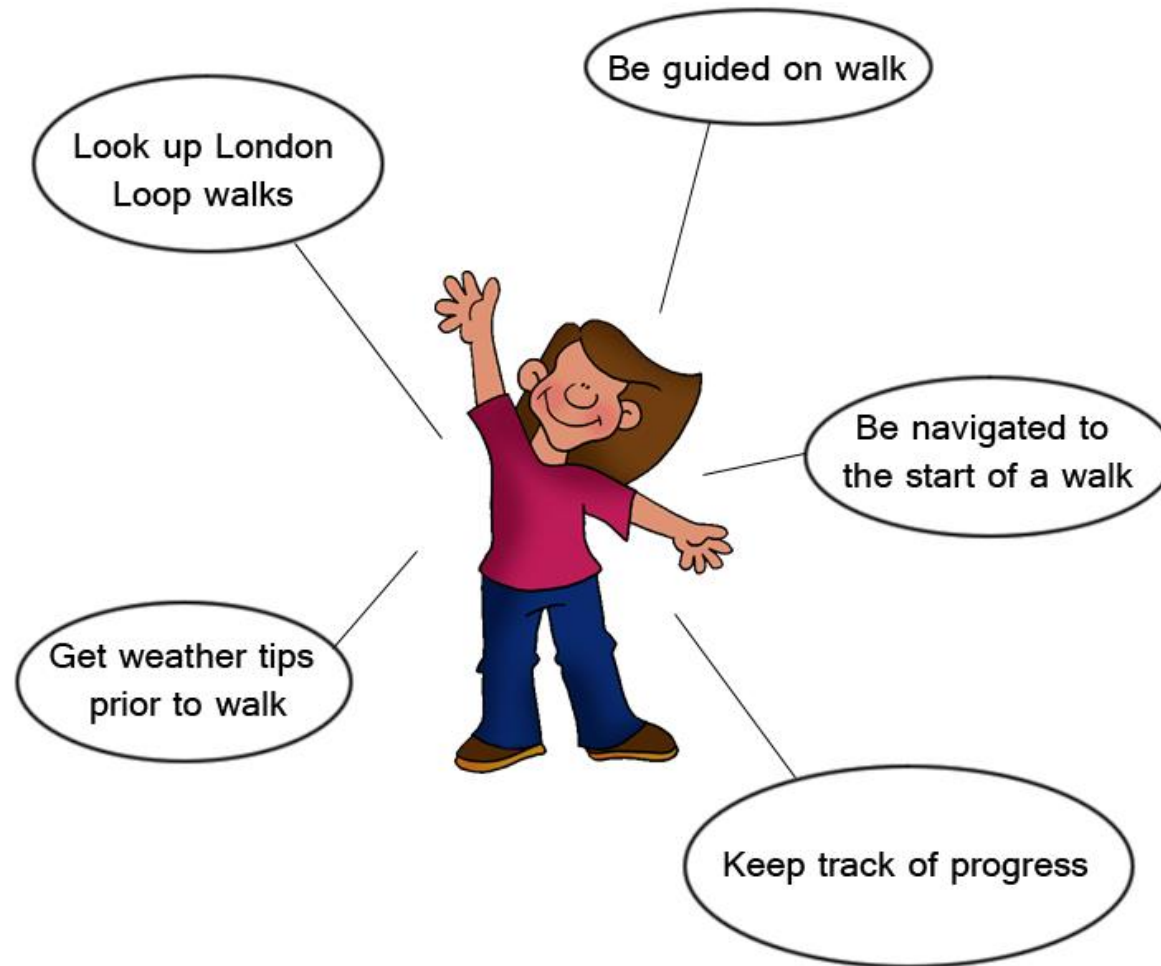


# My Motivation and Objectives

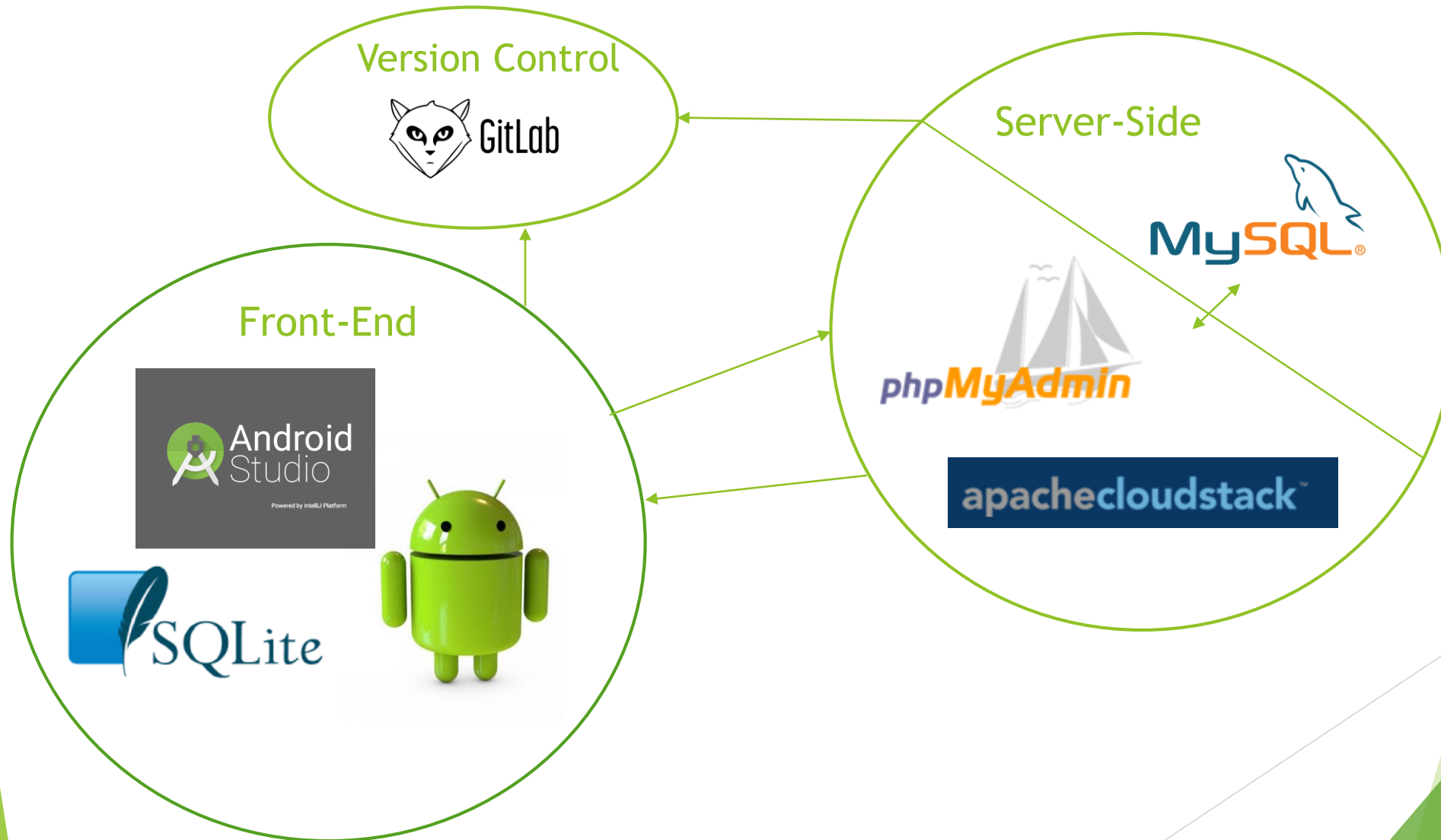
- Motivation
  - To encourage people to walk more and become more active
  - To make the London Loop more accessible and appealing
- Objectives
  - To create a smart phone app for walkers of the London Loop



# Requirements



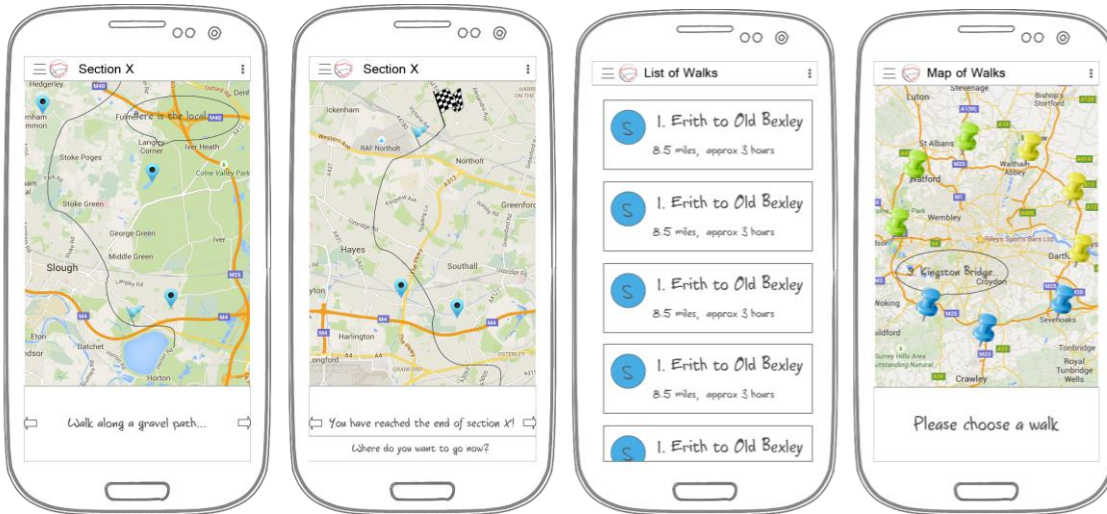
# Choice of Technologies





# Design

## Mockups



## Logo Design



Flying Kestrel  
(London Loop Symbol)



London Loop outline  
with River Thames

DEMO

# Implementation - Databases

## SQLite (Internal)

- ▶ Stores all information regarding walks
- ▶ Stores user-specific data (e.g. personal progress/statistics)
- ▶ Uses helper class (SQLiteOpenHelper) to access database

## MySQL (External)

- ▶ Stores collective statistics of all users of the app
- ▶ Accessed via API request to PHP web service

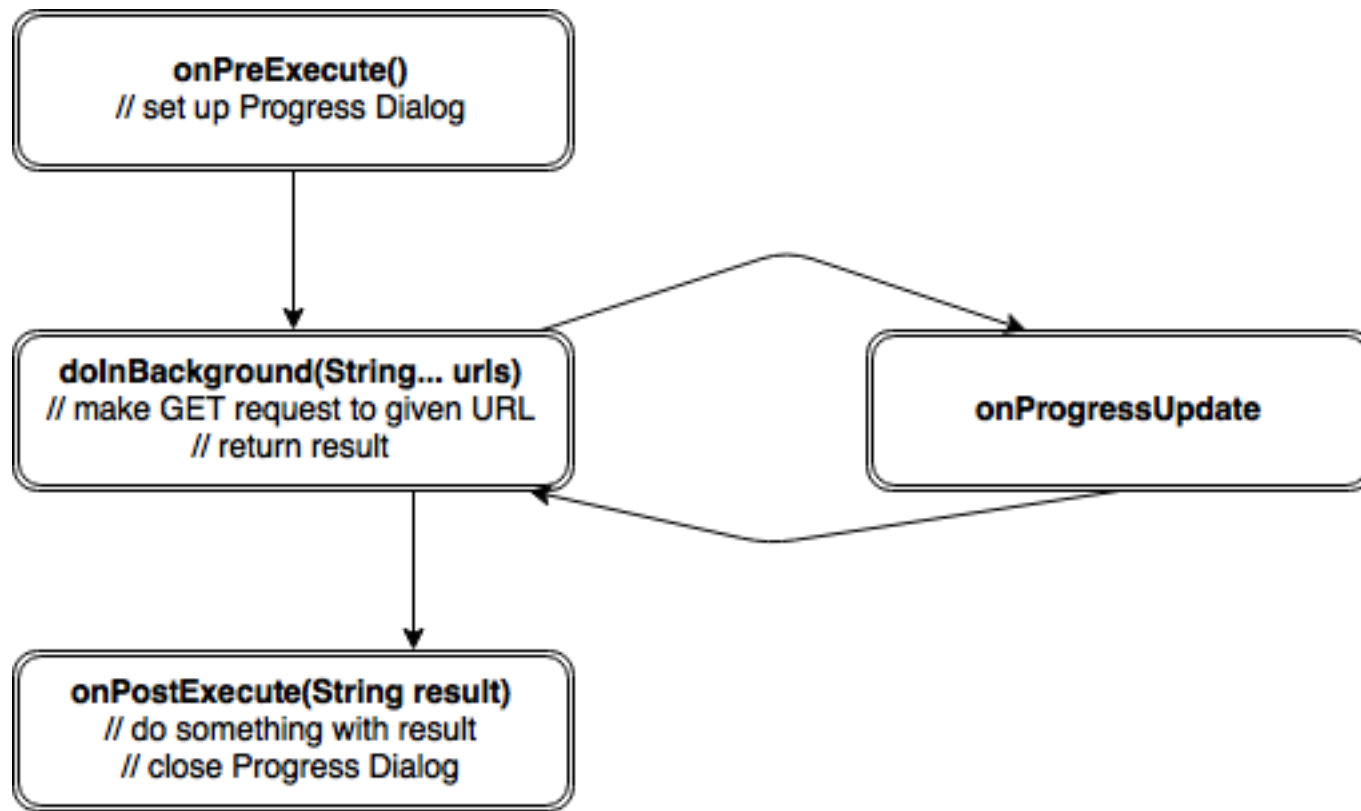
Both stores all information about walks

### Tables:

**Node** (each Start/End point of walk), **Section** (each walk), **Gps** (geo-coordinates of each walk), **Marker** (points of interest, etc), **Statistics** (stats for each walk)



# Implementation - API Requests



# Implementation - Weather

Today's weather: Sky is Clear  
Be careful when walking today!  
Temperature: 15° (min: 15°, max: 15°)



<http://api.openweathermap.org/data/2.5/weather?lat=51.393209&lon=0.069081&units=metric>

```
{"coord":{"lon":0.07,"lat":51.39},
"sys":{"message":0.026,"country":"GB","sunrise":1434771763,"sunset":1434831
596}, "weather":[{"id":800,"main":"Clear","description":"Sky is
Clear","icon":"01n"}], "base":"stations",
"main":{"temp":14.626,"temp_min":14.626,"temp_max":14.626,"pressure":1024.4
5,"sea_level":1032.22,"grnd_level":1024.45,"humidity":97},
"wind":{"speed":1.57,"deg":268.008},
"clouds":{"all":0},"dt":1434839326,"id":3333124,"name":"Bexley","cod":200}
```


# Implementation - Transport

[http://transportapi.com/v3/uk/public/journey/from/lonlat:-0.18283448,51.51547028/to/lonlat:-0.411109,51.470567.json?api\\_key=377843b343d1e052ac4d024fd9b7c93a&app\\_id=6109f899&modes=bus-tube-train-boat](http://transportapi.com/v3/uk/public/journey/from/lonlat:-0.18283448,51.51547028/to/lonlat:-0.411109,51.470567.json?api_key=377843b343d1e052ac4d024fd9b7c93a&app_id=6109f899&modes=bus-tube-train-boat)

```
{"request_time":"2015-06-20T23:59:33+01:00","source":"TfL journey planning API","acknowledgements":"Transport for London",
"routes":[{"duration":"01:21:00",route_parts":[{"mode":"foot","from_point_name":"Cleveland Gardens, Paddington","to_point_name":"Porchester Terrace","destination":"","line_name":"","duration":"00:11:00","departure_time":"00:05","arrival_time":"00:16","coordinates":[[-0.18268,51.51555], ... ,[-0.18411,51.5104]]}, {"mode":"tube","from_point_name":"Turnham Green","to_point_name":"Hatton Cross","destination":"Heathrow Terminal 5","line_name":"Piccadilly","duration":"00:23:00","departure_time":"00:43","arrival_time":"01:06","coordinates":[[-0.25455,51.49526], ... ,[-0.42361,51.46639]]}, {"mode":"bus","from_point_name":"Hatton Cross Station","to_point_name":"The Parkway / Gt South West Rd","destination":"Southall, Town Hall","line_name":"482","duration":"00:04:00","departure_time":"01:11","arrival_time":"01:15","coordinates":[[-0.42321,51.46696], ... ,[-0.41105,51.47052]]}], "departure_time":"00:06","departure_date":"2015-06-21","arrival_time":"01:26","arrival_date":"2015-06-21"}]}
```


London Loop

Depart: 00:05, Arrive: 01:26  
(1 hours, 21 minutes)



00:05: Walk from Cleveland Gardens, Paddington to Porchester Terrace  
00:16: Take the bus (94) from Porchester Terrace towards Acton Green to Turnham Green Station  
00:43: Take the tube (Piccadilly) from Turnham Green towards Heathrow Terminal 5 to Hatton Cross  
01:11: Take the bus (482) from Hatton Cross Station towards Southall, Town Hall to The Parkway / Gt South West Rd  
01:15: Walk from The Parkway / Gt South West Rd to 1 Great South West Road, Hounslow

Depart: 00:06, Arrive: 01:26  
(1 hours, 20 minutes)

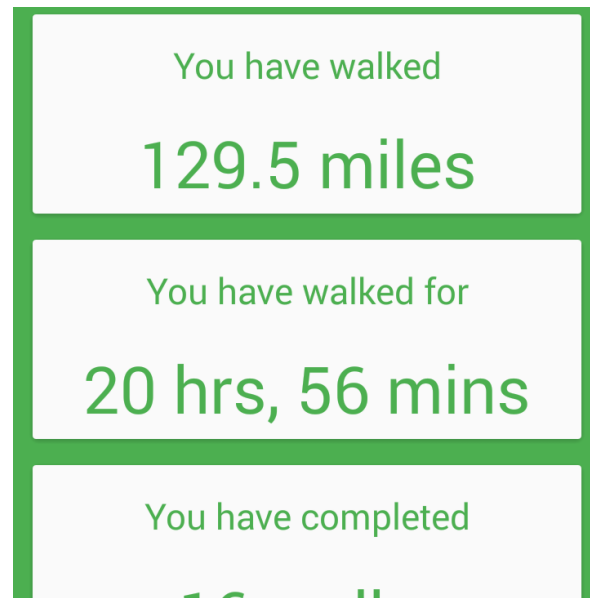


# Implementation - Statistics

Example of online JSON response from MySQL database:

```
{"statistics":[{"id":"0","currently_walking":"3","miles_walked":"365","walk_time":"456","walks_completed":"43"},...]}
```

All user-defined information stored in internal SQLite database



# Evaluation: Testing

## Testing at the London Loop

- ▶ Tested that locations saved were correct
- ▶ Tested that information would update according to user's location
- ▶ Tested that information was useful enough to take user through walk

## Getting others to test the app

- ▶ Get feedback on design and user interface of app
- ▶ Find faults with app that I would not have noticed myself
- ▶ Compatibility with KitKat and Lollipop

# Evaluation: Feedback

- Is my app clear and does it function correctly?
- Is my app more useful and appealing than David Sharp's book?
- Functionality
- Logo and Design

Showing 5 responses

This app effectively guided me along the London Loop walk from Hatton Cross to Hayes and Harlington and showed me interesting places on the way.

6/17/2015 5:59 PM [View respondent's answers](#)

Using the app made me want to go on more walks to discover the London Loop

6/17/2015 3:25 AM [View respondent's answers](#)

It was fun to use this app.

6/16/2015 9:25 AM [View respondent's answers](#)

Very nice app to use. Functionality did everything I needed to efficiently reach the starting point by public transport, and then help me successfully navigate the section from Hatton Cross to Hayes & Harlington, providing useful information on route.

6/15/2015 12:48 PM [View respondent's answers](#)

The app for the London Loop does what it sets out to do very well. I now feel well versed in the London Loop even though i had no prior knowledge of it beforehand. I feel confident that I could rely on the app through any of the walks it includes and much prefer it to the guide books. The app definitely encourages me to go out and complete all of the walks with the seemingly effortless way that it navigates me from start to finish.

6/15/2015 11:02 AM [View respondent's answers](#)

# Evaluation: What I learnt

- ▶ First time I created any smart phone app
- ▶ Introduction of CardView in Android 5 (Lollipop)
- ▶ PHP and connecting to a webservice
- ▶ Location tracking and granularity
- ▶ Time management



# Conclusion and Future Works

- ▶ Project Management
- ▶ Choice of Technologies
- ▶ Testing
  
- ▶ Future Work:
  - ▶ Complete app for all walks
  - ▶ Reverse Walks
  - ▶ User input for local walk data
  - ▶ Social Media integration
  - ▶ Image uploads

THANK YOU 😊