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A WEATHER APPLICATION ON INFOTAINMENT SYSTEM

SYSTEM COMPONENTS

- ▶ Front-end
 - ▶ HTML 5 client
- ▶ Local back-end
 - ▶ Database
 - ▶ Snapshots
- ▶ Remote back-end
 - ▶ Weather server

FRAMEWORK

- ▶ Django
 - ▶ Model:
 - ▶ Retrieve data from local database and snapshots
 - ▶ Retrieve data from remote weather server and update database
 - ▶ Template
 - ▶ HTML and CSS
 - ▶ View
 - ▶ Render template given retrieved data from model

INTERFACES

- ▶ Case 1:
 - ▶ Only current location is presented
- ▶ Case 2:
 - ▶ Both current and destination locations are presented
- ▶ Location search
 - ▶ Fuzzy search of available locations
 - ▶ Request the back-end for each letter user type in

PERMISSIONS

- ▶ Location service
- ▶ Notification
 - ▶ Alarm the driver when the back-end retrieves a change of weather on current location or destination
- ▶ Connection with navigation system
 - ▶ Set destination automatically if the navigation is running

BACK-END: DATABASE OR SNAPSHOT

- ▶ Three categories of locations
 - ▶ current location
 - ▶ update automatically in high frequency; query by longitude and latitude
 - ▶ destination location
 - ▶ automatically update in lower frequency; query by the location name
 - ▶ others
 - ▶ update manually; query by the location name

RESTFUL API

- ▶ Resource Representational State Transfer
 - ▶ Resource: a backend weather server supporting URL query
 - ▶ Representational: JSON
 - ▶ State Transfer: HTTP methods
 - ▶ The back-end in infotainment using only GET method
 - ▶ POST and PUT methods are used by remote back-end

RESTFUL API: URL DESIGN

- ▶ URL root
 - ▶ Specifying API, like [api.jlr.com/weather](#)
- ▶ HTTP Method:
 - ▶ Like GET [api.jrl.com/weather/shanghai](#)
- ▶ Well designed status code

RESTFUL API

- ▶ GET: api.jlr.com/weather/locations
 - ▶ Retrieve all possible locations, and stored locally for further fuzzy search
- ▶ GET: api.jlr.com/weather/shanghai
 - ▶ Retrieve weather given a location
- ▶ GET: api.jlr.com/weather/@31.297344,121.5030465
 - ▶ Retrieve weather given a longitude and latitude

TEXT

THANKS