WebServices application with Django and OpenLayers

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WebServices application with Django and OpenLayers

- OpenLayers is a great API which allows to build great GIS clients on the web.

- But it remains an API, on which mostly people are unable to play on their own.

- OpenCarto is a solution dedicated to GIS files publication on the web, a sort of CMS for maps !
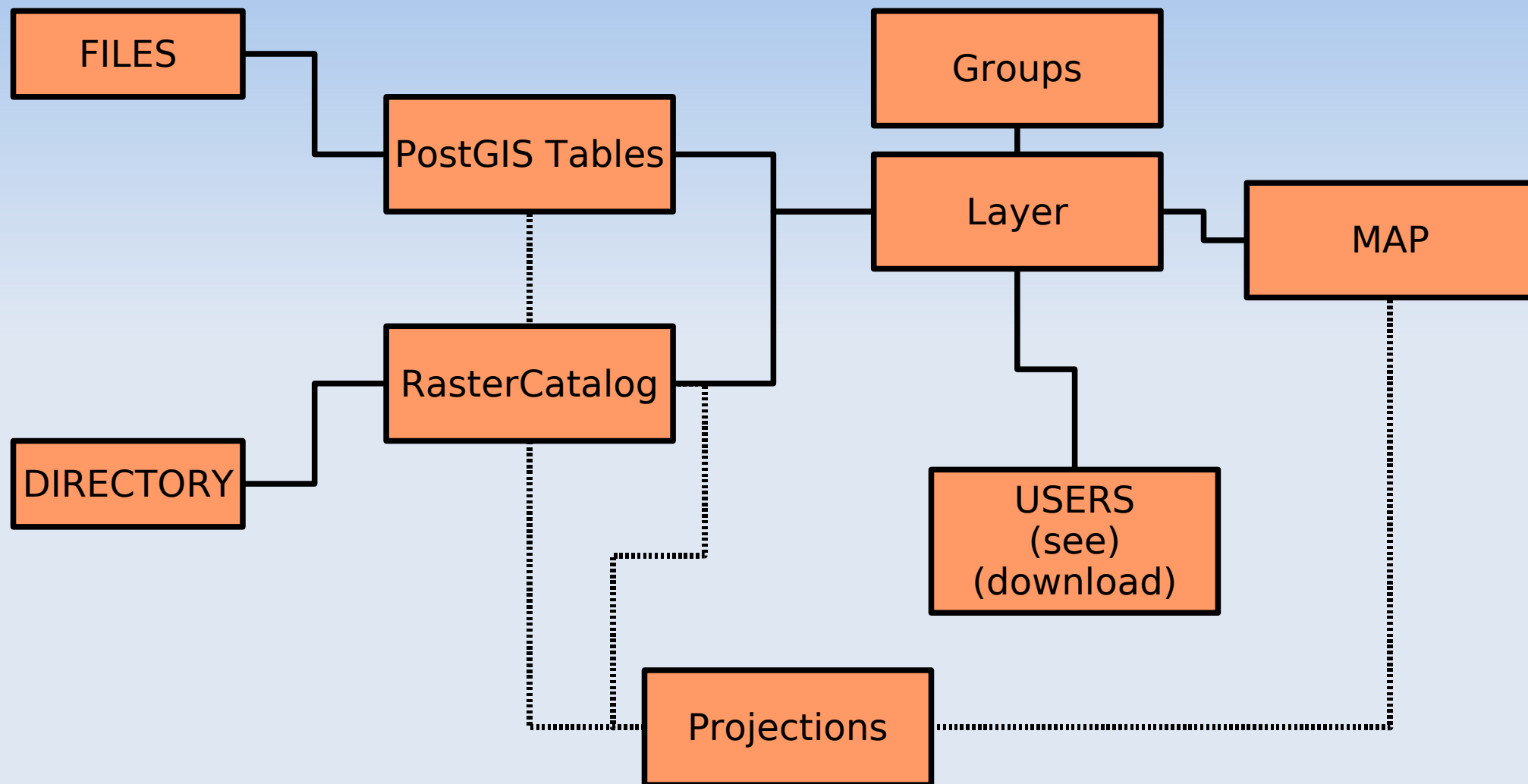
Why Django ?

- Django is a high-level Python web framework that encourages rapid development and clean, pragmatic design.

- That was made for me !

- Python is interesting because it allows wrapping of tons of top level libraries which can easily help us on building the application (PIL, urllib, ogr, mapscript...)

- Python is faster than PHP and easier than Java

Why not GeoDjango ?

- GeoDjango provides the ability to build geographic models in Django.

- It's a part of Django main trunk since last august.

- A terrific workshop has been held on that topic !

- But I only need to store geographic data, not to manipulate them.

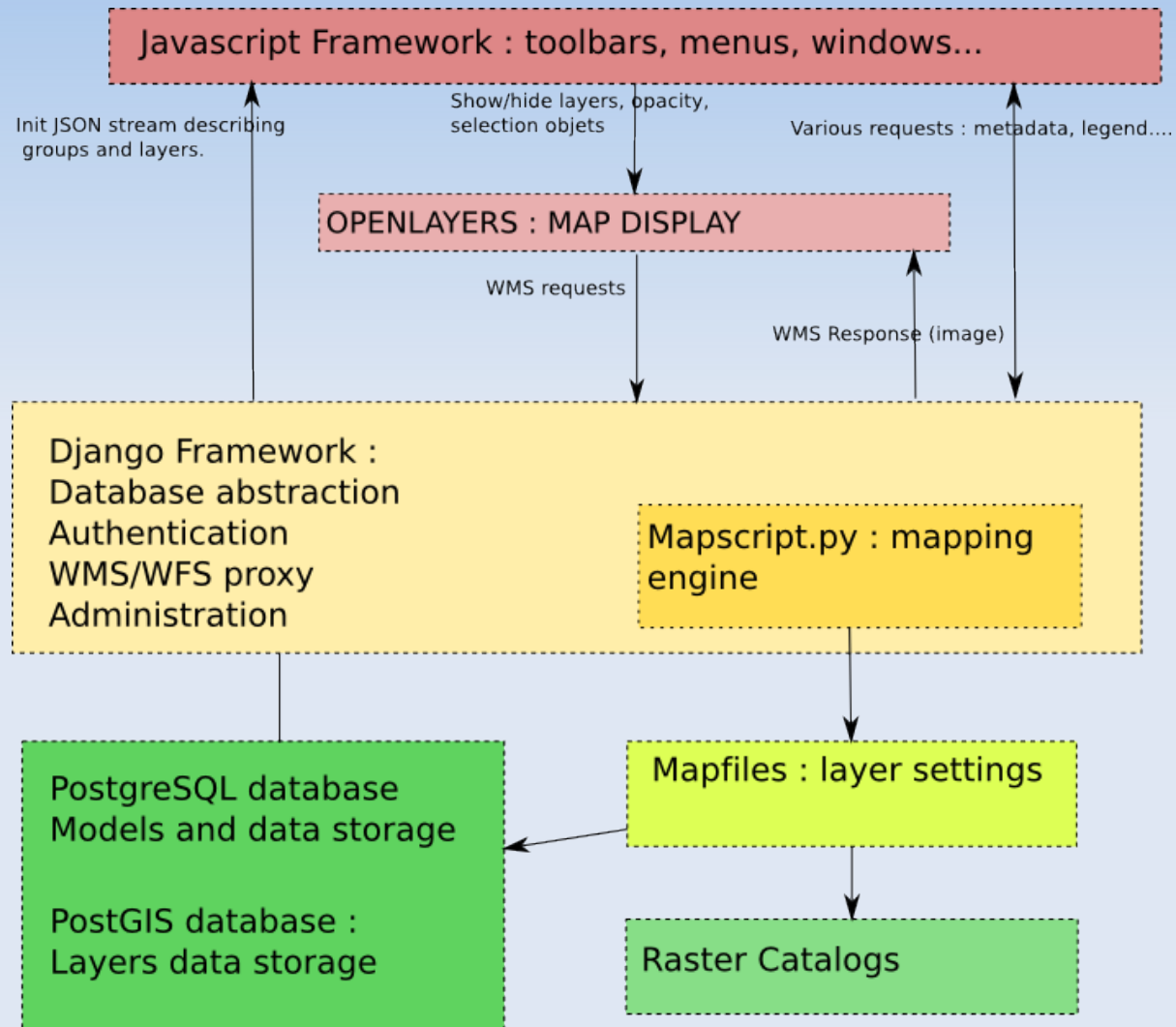- GeoDjango is unable to create models on the fly easily

Basic Model

FILES

PostGIS Tables

DIRECTORY

RasterCatalog

Groups

Layer

MAP

USERS
(see)
(download)

Projections

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Map publication

- Django generates a JSON stream which embeds all necessary informations to set up an OpenLayers app

- A JS framework (MooTools or ExtJS) builds the necessary components to interact with the map.

- All the layers are individuals, hitting the django framework back with WMS request

Global Workflow

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WMS Authentication

- One main interest of OpenCarto is its ability to deliver authenticated WMS

- Uses django framework as a proxy

- Django holds the WMS request, check for authentication, and passes the request to mapscript.py which returns the image

- Uses a ticket system for remote access

Map administration

- Based on Django terrific standard admin module

- Allows people to upload files

- Translates the MapInfo or Shapefiles into PostGIS

- See the demo !

Conclusion

- Opencarto is an easy tool to publish GIS data online.

- Its architecture is loosely coupled. It doesn't rely on a specific client.

- It seems fast and reliable...

Future improvements

- Automatic TileCache raster integration

- Dynamic Geo Models creation with GeoDjango, to let people access geodata throught the admin interface.