



Rhobile and Ruby mobile development

Introducing into
Rhobile solution
for developers

You like Ruby and Ruby on Rails ?
You want to develop mobile cross-platform application based on Ruby ?
Let me introduce Rhodes solution !



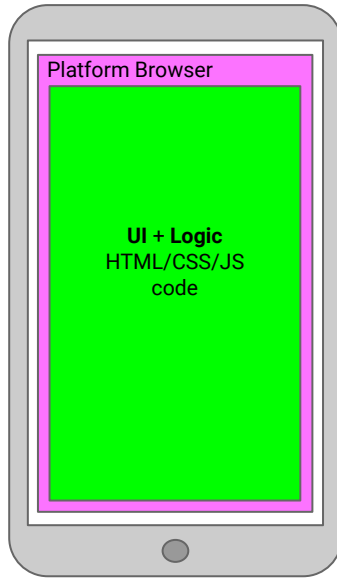
Rhomobile architecture

Simple not cross-platform Native Application



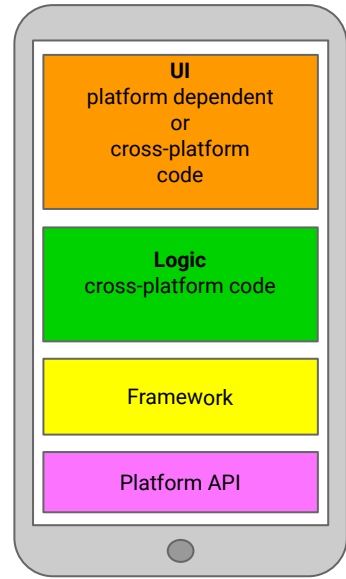
iOS: ObjC, Swift, C++
Android: Java, C++
WinCE/WM: C#, C++

Web cross-platform Application



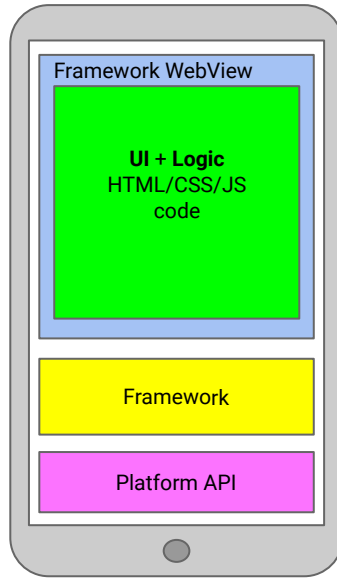
a lot of HTML/CSS/JS frameworks

Native cross-platform Application



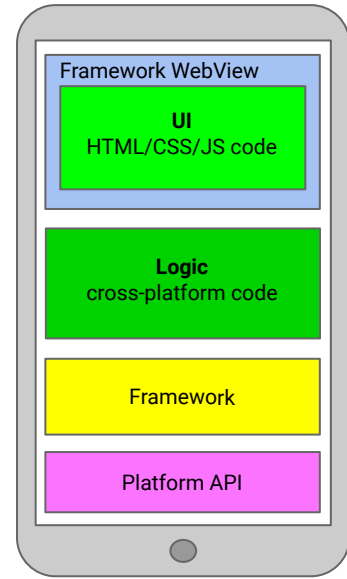
Xamarin (C#)
Appcelerator (JS)
React Native (JS)
NativeScript (JS)
QT (C++, QML)
RubyMotion (Ruby)
CodenameOne (Java)
Corona (Lua)

Hybrid cross-platform Application



Cordova/PhoneGap RhoMobile (in pure hybrid mode) + a lot of HTML/CSS/JS frameworks

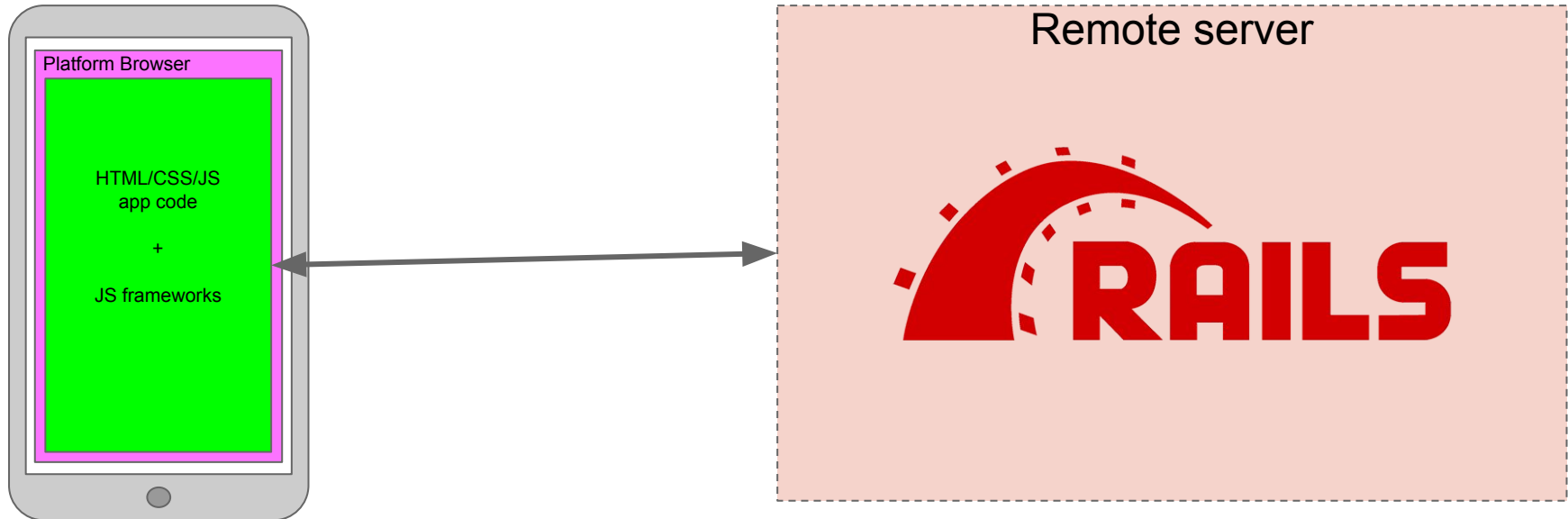
Mixed Hybrid cross-platform Application



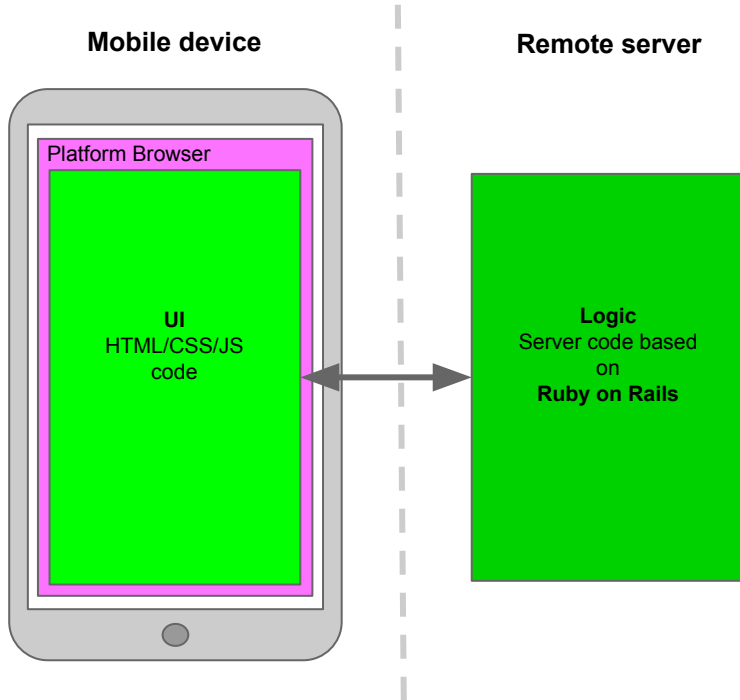
RhoMobile (Ruby) + a lot of HTML/CSS/JS frameworks

We have a web browser with HTML/CSS/JS code and separate logic/DB ?
This is well known client-server architecture for web applications !

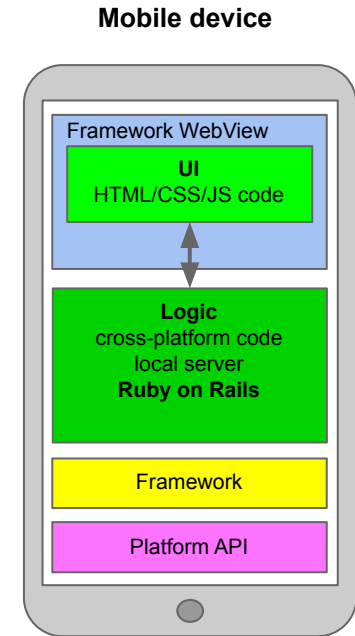
We have a lot of already existing code for this platforms.
We have a lot of experienced developers for this platforms.
We already used this in our web applications etc.

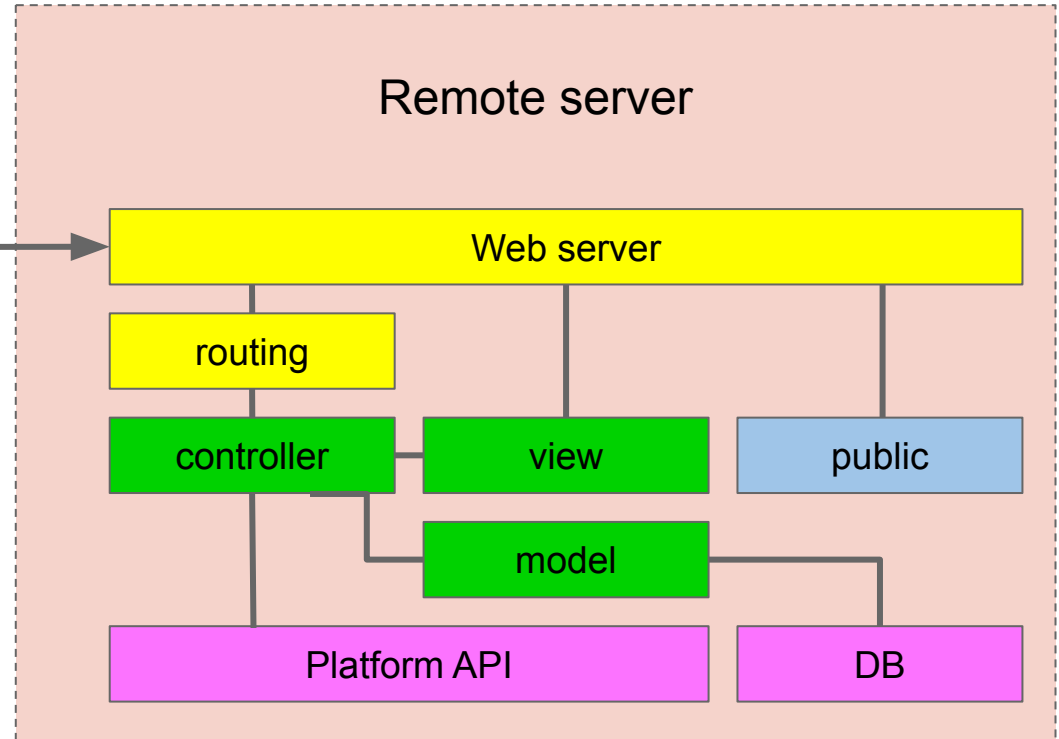
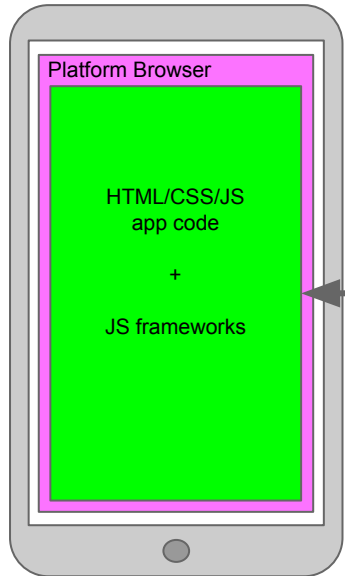


Web application with remote server backend



Native application with mixed hybrid architecture





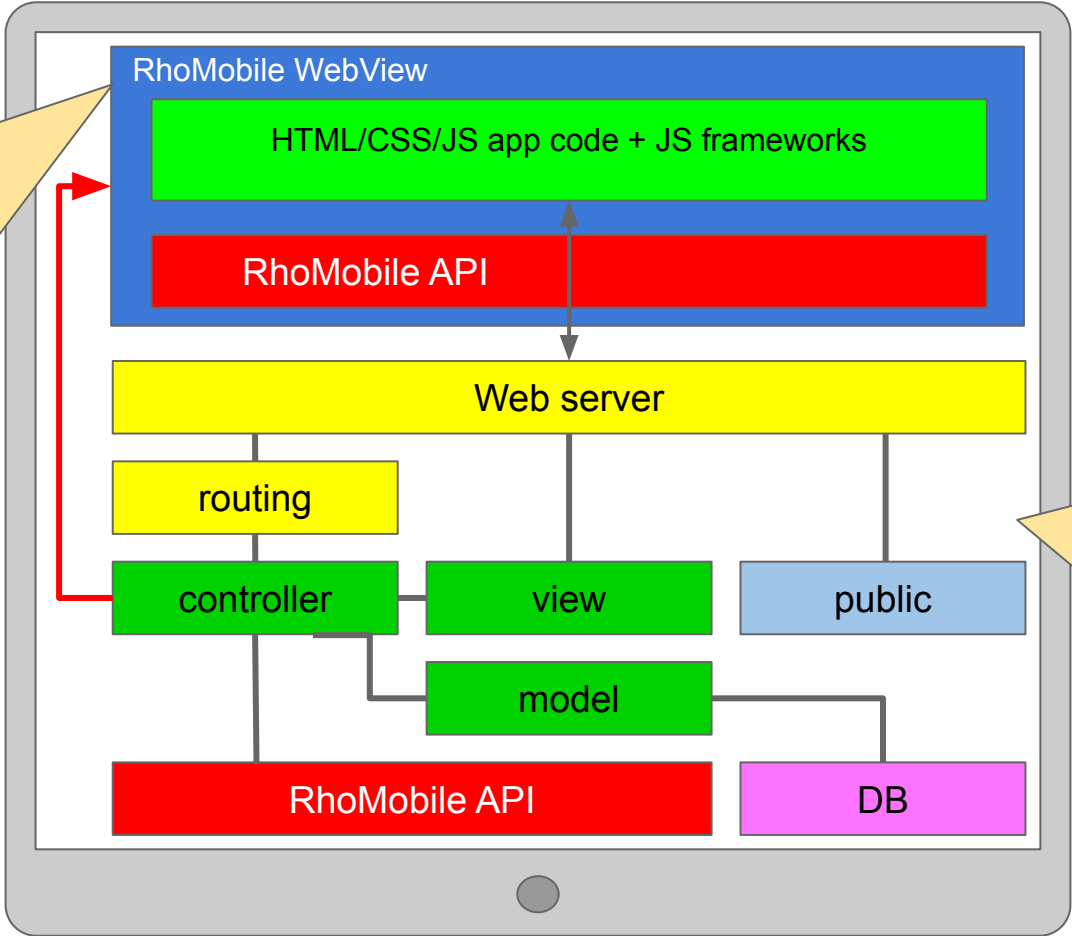
Rhodes architecture with WebView and local RoR-style server



RHODES

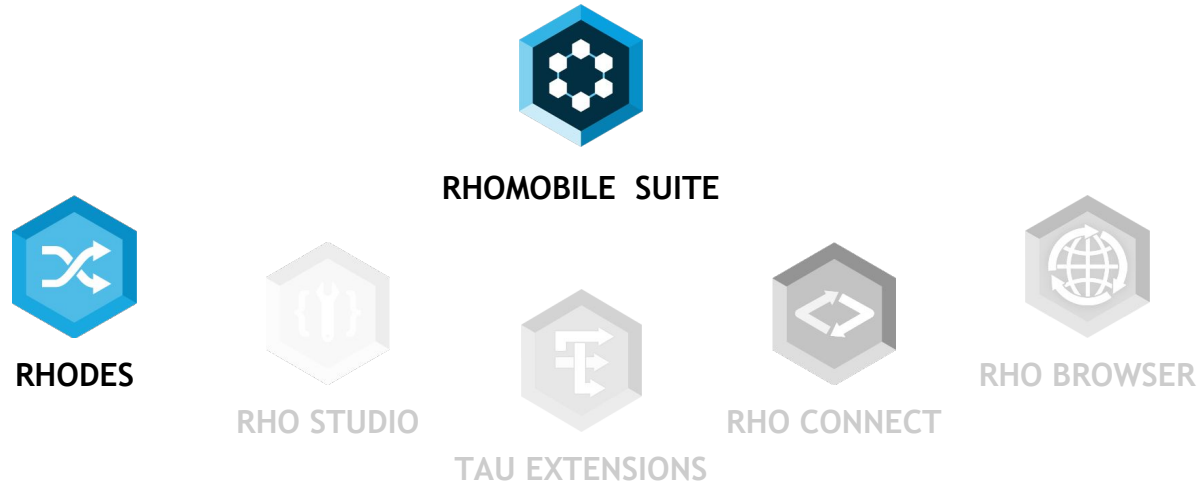
Hybrid architecture. UI implemented with web technologies inside WebView.

Developers can use any JS frameworks.



We have local HTTP server with Ruby VM on our mobile device. Ruby code executed on mobile device.

What we need to start development with Rhodes



- **Solution for development of mobile cross-platform hybrid and mixed-hybrid applications**
- Developers can use just **HTML/CSS/JS** (like Cordova), and also use **Ruby** in Ruby on Rails like environment
- Includes a lot of modules with support for different APIs like Barcode, Printing etc.
- Support **iOS, Android, WinCE/WM, WP, Sailfish, Linux**
- **Own port of Ruby 2.3.3 VM**

Before installation please install all prerequisites into your system. Details:

<http://docs.tau-technologies.com/en/7.1/guide/rhobile-install>

<http://docs.tau-technologies.com/en/7.1/guide/nativesdksetup>

There are three ways to install RhoMobile - please install our latest release 7.1 :

- Download and install our all-in-one installation package.
<http://tau-technologies.com/developers/downloads/>
- Download source code from GitHub(you should manually define path to rhodes in applications)
Source code : <https://github.com/rhobile/rhodes>



After install you should set up paths to mobile SDKs:

```
$ rhodes-setup
```

Mobile cross-platform application with Ruby

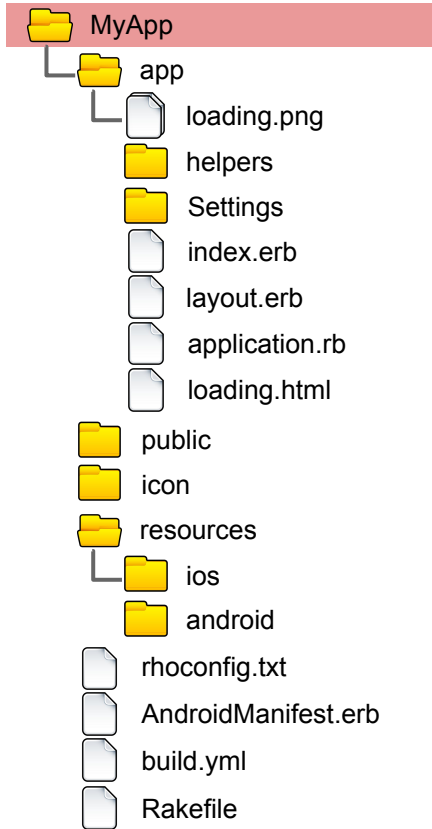
Let's make our application:

(see details: http://docs.tau-technologies.com/en/7.1/guide/creating_a_project) :

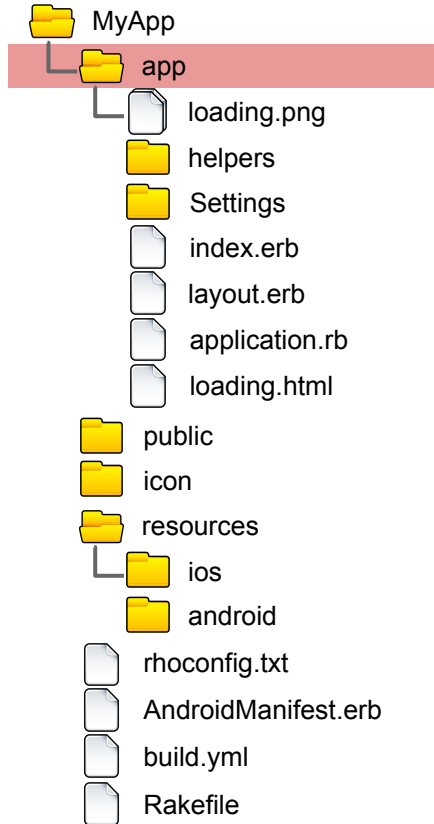
```
$ rhodes app MyApp
```

rhodes - command line tool for generating :
applications, models, extension.

Generated code is fully workable and can be built and run.

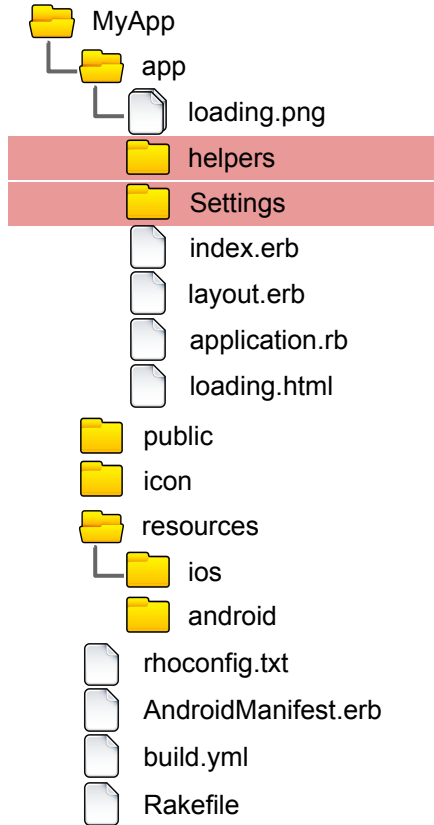


We get MyApp folder where located generated application's code, resources etc.



“**app**” folder contains application’s code - ***.ruby** and ***.erb** (templates) files

In runtime this folder is located under root of local HTTP server.

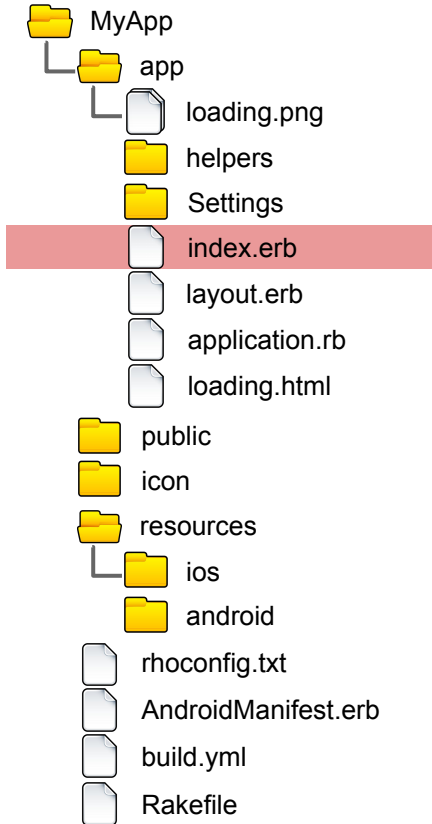


Folders with helper ruby files

erb template for index page (start page in application by default)

Used two steps HTML generation :

Page template contains only **content**, and shared other parts and loading of **CSS,JS** in separate **erb** template **layout**

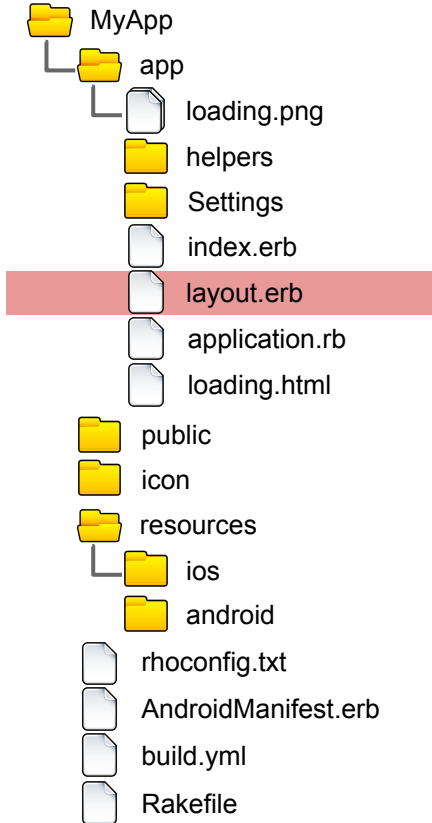


```
<div class="container-fluid">

  <div class="row">
    <div class="list-group">
      <a href="#" class="list-group-item">
        <span class="glyphicon glyphicon-chevron-right pull-right" aria-hidden="true">
        </span>
        Add link here...
      </a>
    </div>
  </div>

</div>
```

erb template for all pages (can be overridden in each controller)



```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
  "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">

<head>
  <title>MyApp</title>
  <meta name="viewport" content="width=device-width, initial-scale=1.0,
maximum-scale=1.0, user-scalable=0"/>

loading of CSS and JS ...

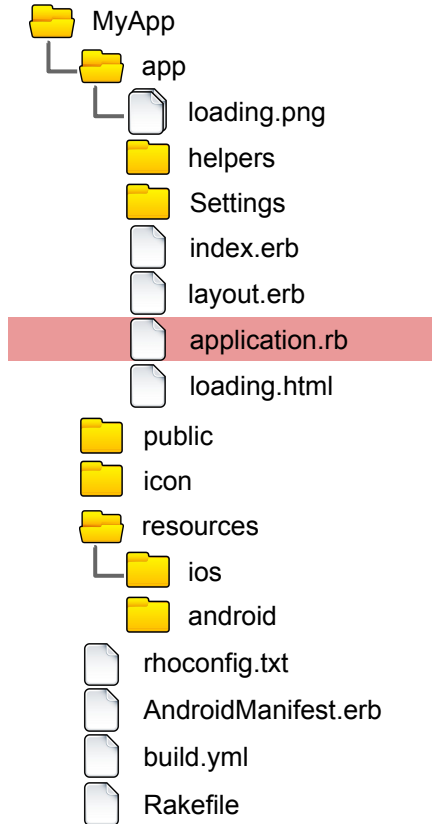
</head>

<body data-platform="<%= Rho::System.getProperty('platform') %>">
  <%= @content %>
</body>

</html>
```

framework places generated page content here

application class code - activation, deactivation etc.



```
require 'rho/rhoapplication'

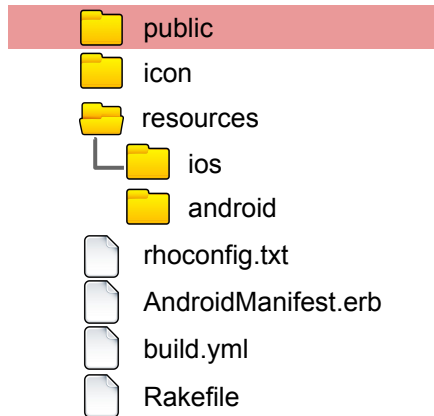
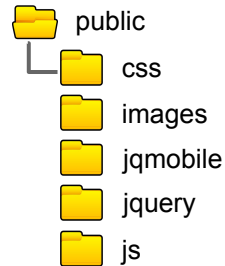
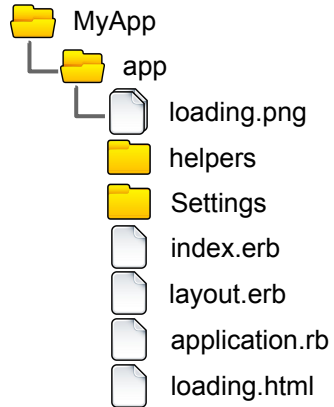
class AppApplication < Rho::RhoApplication

  def initialize
    # Tab items are loaded left->right, @tabs[0] is leftmost tab in the tab-bar
    # Super must be called *after* settings @tabs!
    @tabs = nil
    #To remove default toolbar uncomment next line:
    #@@@toolbar = nil
    super
  end

end

end
```

folder with static files of local HTTP server: CSS, JS, images etc.

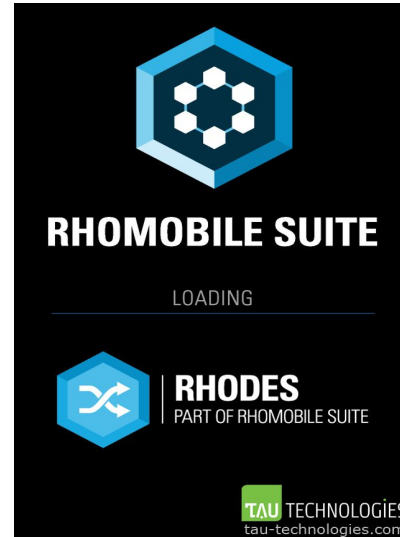
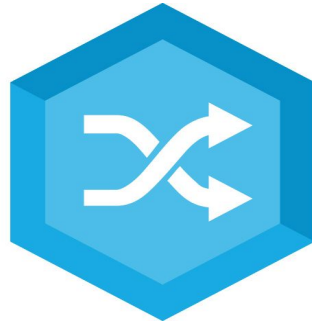
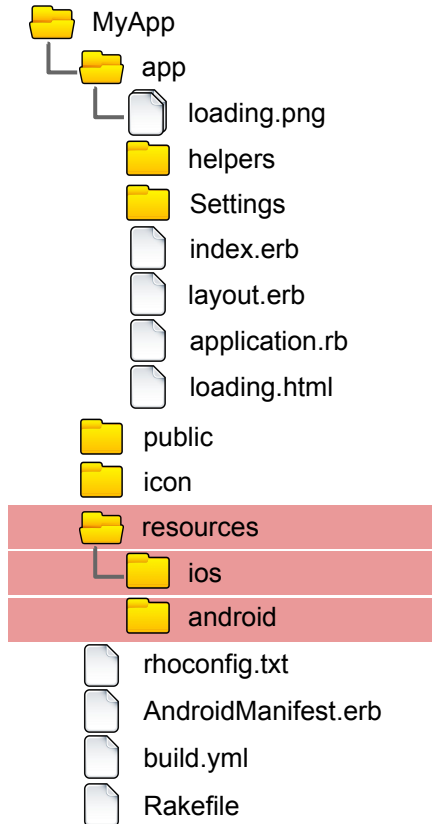


folder with resources used for application build: icon, splash image, iTunes image etc.

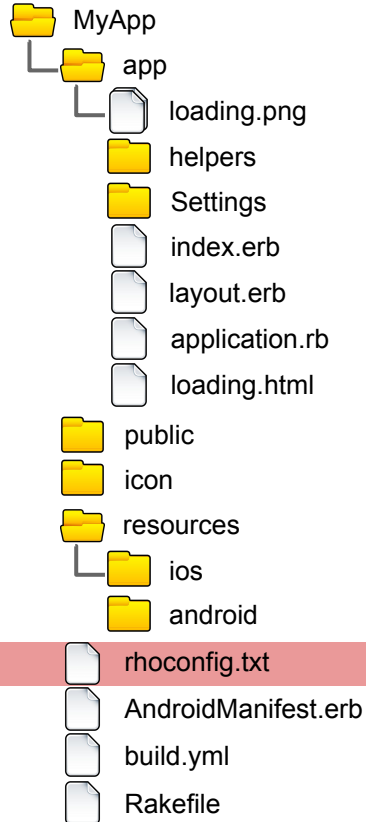
See details in documentation:

http://docs.tau-technologies.com/en/7.1/guide/app_icon_splash

http://docs.tau-technologies.com/en/7.1/guide/build_ios



application's configuration - used in run-time



```
# startup page for your application
start_path = '/app'

options_path = '/app/Settings'

# Rhodes log properties
MinSeverity = 1
LogToOutput = 1
MaxLogFileSize=50000
logserver = 'http://rhologs.heroku.com'
logname='MyApp'

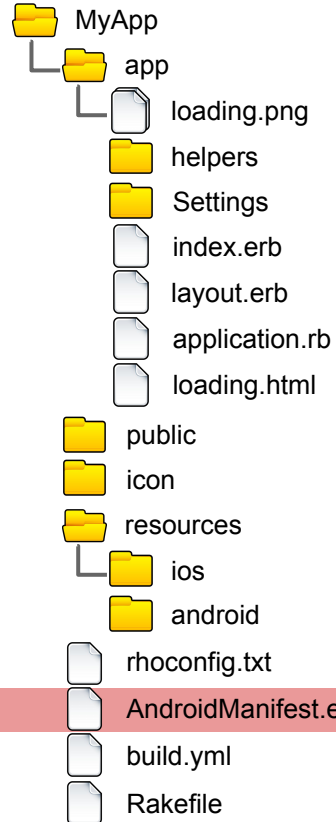
syncserver = ""
sync_poll_interval=0

...
```

template for application's Android manifest.

See details:

http://docs.tau-technologies.com/en/7.1/guide/build_android



Build configuration - settings used for application building, enable/disable capabilities, link extensions etc.



```
name: MyApp
version: 1.0
vendor: rhomobile
build: debug
applog: rholog.txt

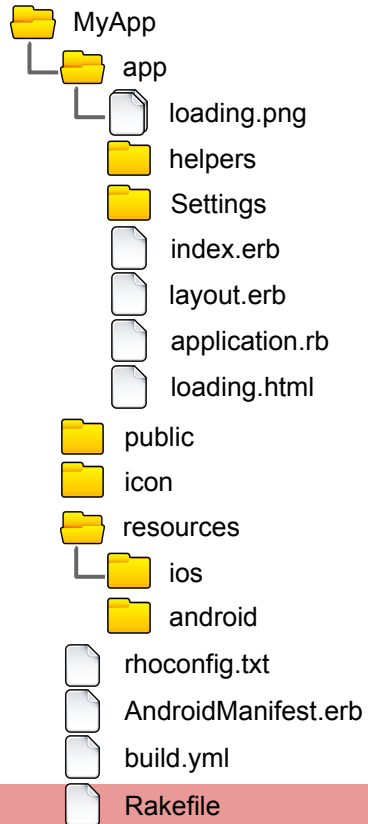
capabilities:
  - camera

iphone:
  configuration: Release
  sdk: latest
  BundleIdentifier: com.rhomobile.myapp
  BundleURLScheme: myapp

android:
  version: 4.1.0
  logcatFilter: APP:I StrictMode:I DEBUG:I *:E

extensions: []
```


Standard Ruby script for rake commands (build, run, etc.)



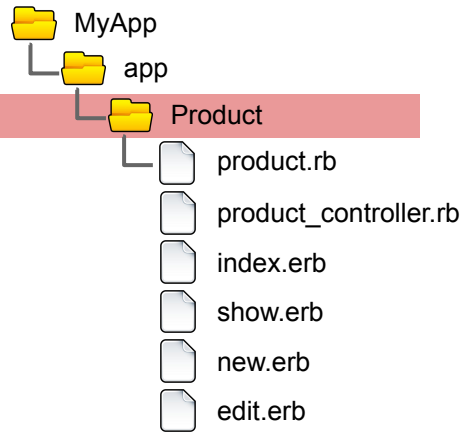
Let's add simple DB model to our application - Rhodes generator makes model Ruby file and set of views (erb files) for view, edit, delete etc.

(details: http://docs.tau-technologies.com/en/7.1/guide/rhom_ruby)

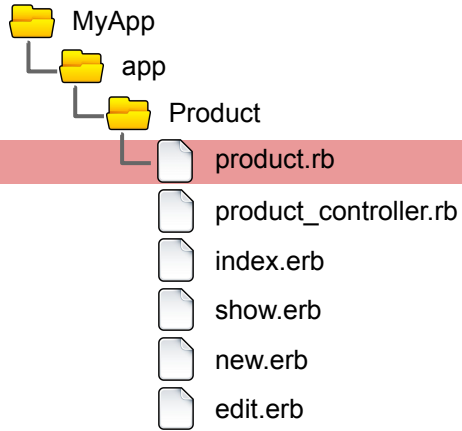
Run Rhodes generator from application's folder :

```
$ rhodes model Product name,brand,price
```

You can see some new content in **app** folder: **Product** folder with set of files



This file contains model definition code. PropertyBag scheme is used by default.

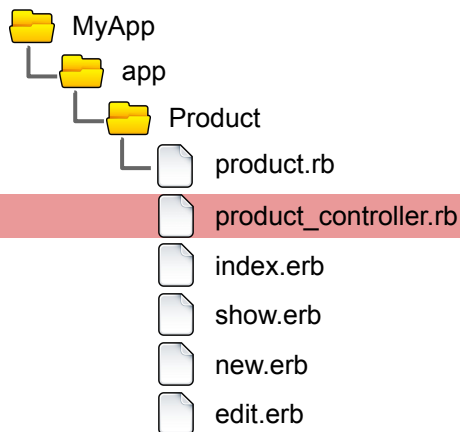


```
# The model has already been created by the framework, and extends Rhom::RhomObject
# You can add more methods here
class Product
  include Rhom::PropertyBag

  # Uncomment the following line to enable sync with Product.
  # enable :sync

  #add model specific code here
end
```

Look into generated code



product_controller.rb - Ruby code for controller class.
 Controller's methods are called from WebView by URL like
 /app/Controller/**method** and return HTML page generated from erb template
 named **method**.erb by default (can be overridden by controller's code).
 If method is not exists then simple content generation used by erb template.

```

require 'rho/rhocontroller'
require 'helpers/browser_helper'

class ProductController < Rho::RhoController
  include BrowserHelper

  def index
    @products = Product.find(:all)
    render :back => '/app'
  end

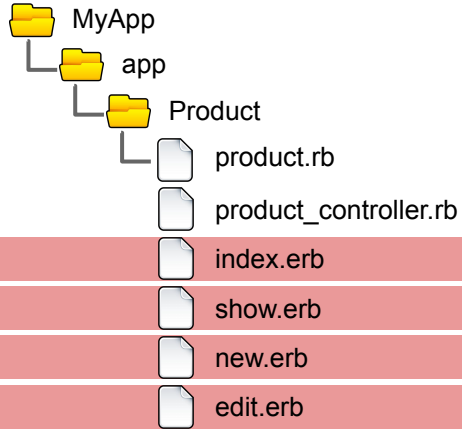
  def edit
    @product = Product.find(@params[:id])
    if @product
      render :action => :edit, :back => url_for(:action => :index)
    else
      redirect :action => :index
    end
  end
end

```

Find all object from **Product** model

@params - hash with all parameters of request (query part of URL)

...



set of **views** - **erb** templates to generate main model access pages.
index.erb is default page. Controller's **index** functions also executed by default, when local server answer request like **/app/Controller/**

```
<div class="container-fluid">
  <div class="row page-title">
  ...
</div>

<div class="row">
  <div class="list-group">
    <% @products.each do |product| %>

      <a href="<%= url_for :action => :show, :id => product.object %>" class="list-group-item">
        <span class="glyphicon glyphicon-chevron-right pull-right" aria-hidden="true"></span>
        <%= product.name %>
      </a>

    <% end %>
  </div>
</div>

</div>
```

enumerate all objects from model and make HTML list with links to view each object

Final change - modify our application start URL in **rhoconfig.txt** to Product page:

```
# startup page for your application  
start_path = '/app/Product'
```

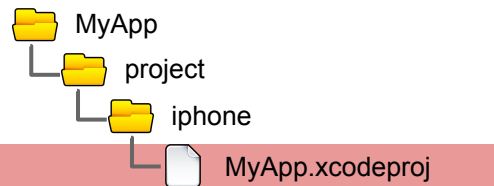
Let's run our application on iPhone Simulator:

```
$ rake run:iphone
```

Also you can generate XCode project and use XCode for build/run etc.
Generate XCode project :

```
$ rake rake build:iphone:setup_xcode_project
```

Generated XCode project located in:



Details: http://docs.tau-technologies.com/en/7.1/guide/build_ios

Run application on Android Emulator:

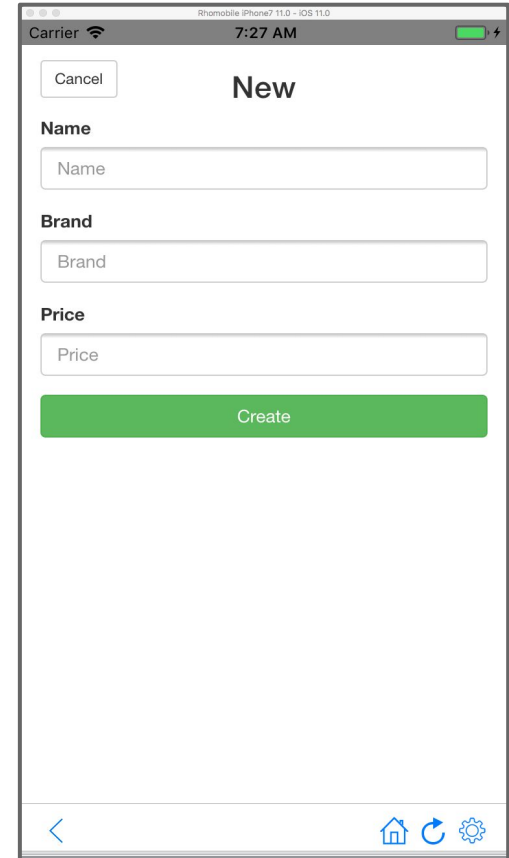
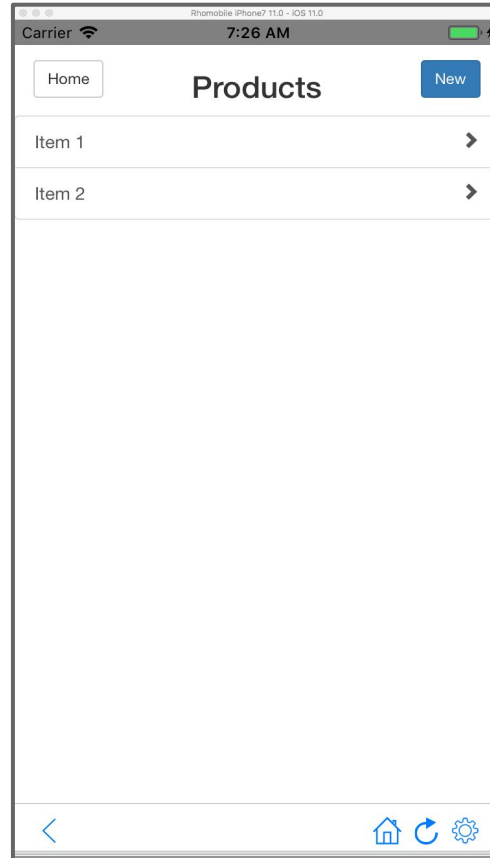
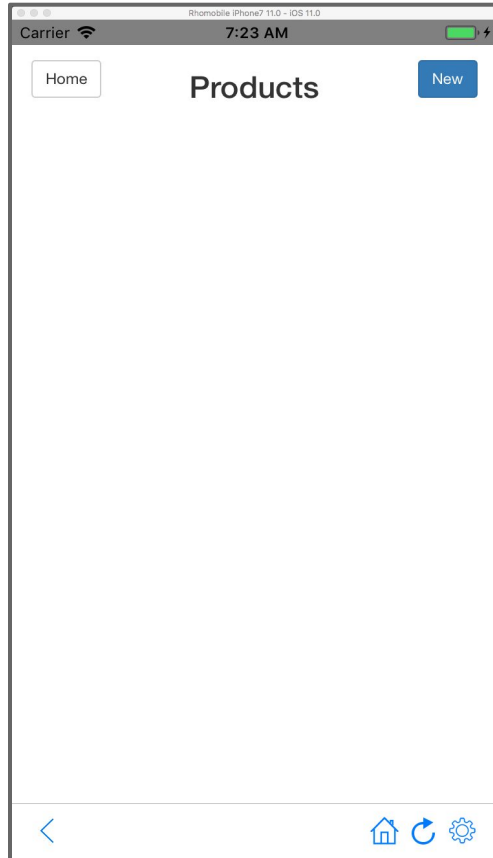
```
$ rake run:android
```

Build and run application on USB-linked Android device :

```
$ rake run:android:device
```

Details: http://docs.tau-technologies.com/en/7.1/guide/build_android

Application's screenshots:



APi list :

<http://docs.tau-technologies.com/en/7.1/guide/apisummary>

Work with remote server via RestAPI from Ruby and JS in Rhodes :

http://docs.tau-technologies.com/en/7.1/guide/web_services

How use third party GEMs in Rhodes application :

http://docs.tau-technologies.com/en/7.1/guide/ruby_extensions

How make native extensions for Rhodes application :

http://docs.tau-technologies.com/en/7.1/guide/native_extensions

How easy sync local DB with remote server DB :

<http://docs.tau-technologies.com/en/7.1/guide/synchronization>

Additional examples :

<https://github.com/tauplatform/rhodes-system-api-samples>

<https://github.com/tauplatform/kitchensinkRuby>

<https://github.com/tauplatform/inventoryDemo-mobileApp>

<https://github.com/tauplatform/kitchensinkJS>

<https://github.com/tauplatform/universal-push-example>

Please visit our website for details, documentation, forum, downloads etc.



<http://tau-technologies.com>