

Building Facebook Application using Python

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Facebook Applications

- Farmville
 - Game
 - 57.5m users
 - <http://www.facebook.com/FarmVille>



- Causes
 - Issues/Movement
 - 26.4m users
 - <http://www.facebook.com/causes>



Outline

- Facebook Applications
- Writing Applications
- Development Documentation

Facebook Applications

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- Each application asks for permission during sign up
- Facebook provided them information on your behalf


Request for Permission

Cool Social App requires certain permissions in order to work. Are you comfortable allowing Cool Social App to do the following?

**Access my public information**
Includes name, profile picture, list of friends, and all other public parts of my profile

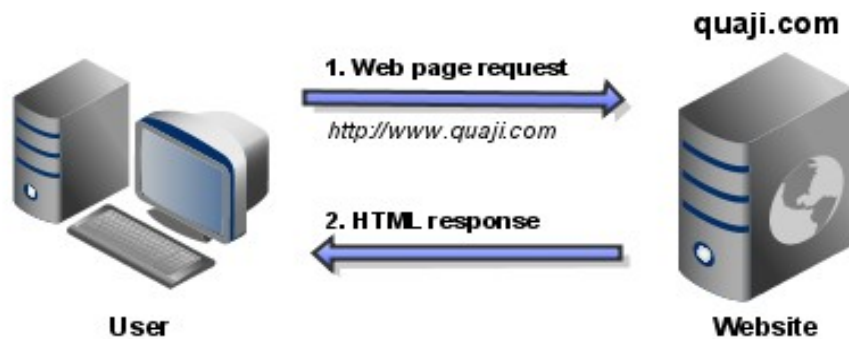
**Send me email**
Cool Social App may email me directly at example@gmail.com
[Change](#)

**Access my profile information**
Birthday

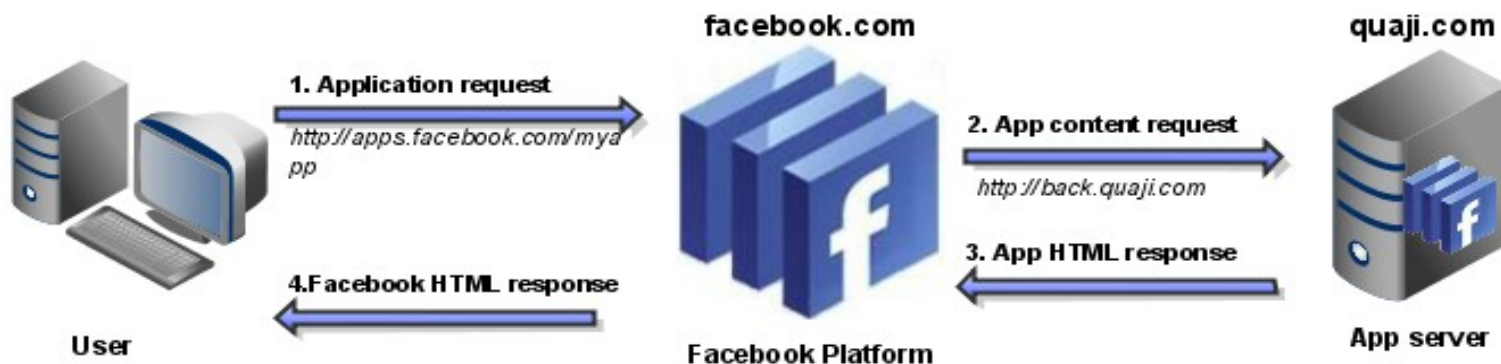

Cool Social App
★★★★★
[Report Application](#)

[Allow](#) [Don't Allow](#)

Regular Website architecture



Facebook application architecture



From <http://blog.quaji.com/2009/08/facebook-csrf-attack-full-disclosure.html>

Facebook Application Model

- Application lives on your server, you register the base url of your app with Facebook

(<http://www.example.com/canvas>)

- When user visits your application, Facebook calls the corresponding url

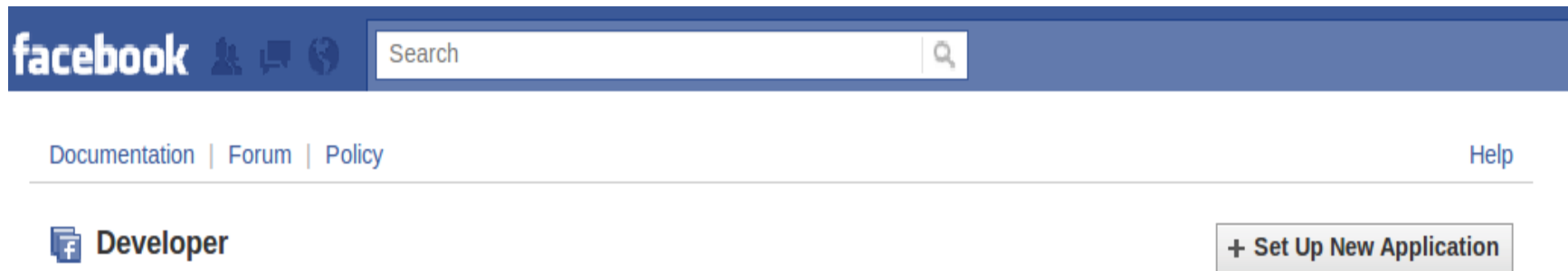
(http://apps.facebook.com/your_app)

- Application calls Facebook API to get information about user and their friends

Writing Applications

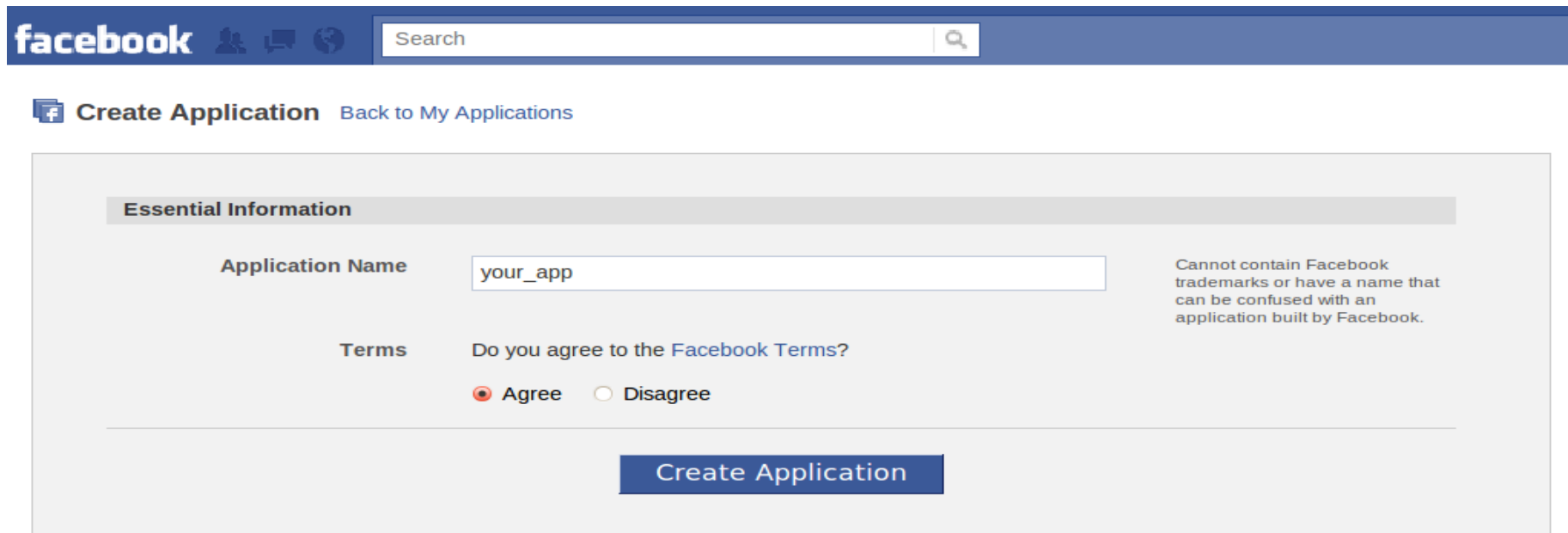
Getting Started

- First visit <http://www.facebook.com/developers/>
- You have to sign up and authenticate [developers](#) application
- Next step: [Set Up New Application](#)









Getting Started

- Provide your application name: your_app
- Agree to Facebook Terms and Click on Create Application to proceed



The screenshot shows the Facebook application creation interface. At the top is the Facebook navigation bar with the logo, icons for friends, messages, and a search bar. Below the navigation bar, there are links for 'Create Application' and 'Back to My Applications'. The main content area is titled 'Essential Information' and contains two sections. The first section is for the 'Application Name', with a text input field containing 'your_app'. To the right of this field is a warning message: 'Cannot contain Facebook trademarks or have a name that can be confused with an application built by Facebook.' The second section is for 'Terms', with the question 'Do you agree to the Facebook Terms?'. Below this question are two radio buttons: 'Agree' (which is selected) and 'Disagree'. At the bottom of the form is a large blue button labeled 'Create Application'.

facebook     Search 

 [Create Application](#) [Back to My Applications](#)

Essential Information

Application Name Cannot contain Facebook trademarks or have a name that can be confused with an application built by Facebook.

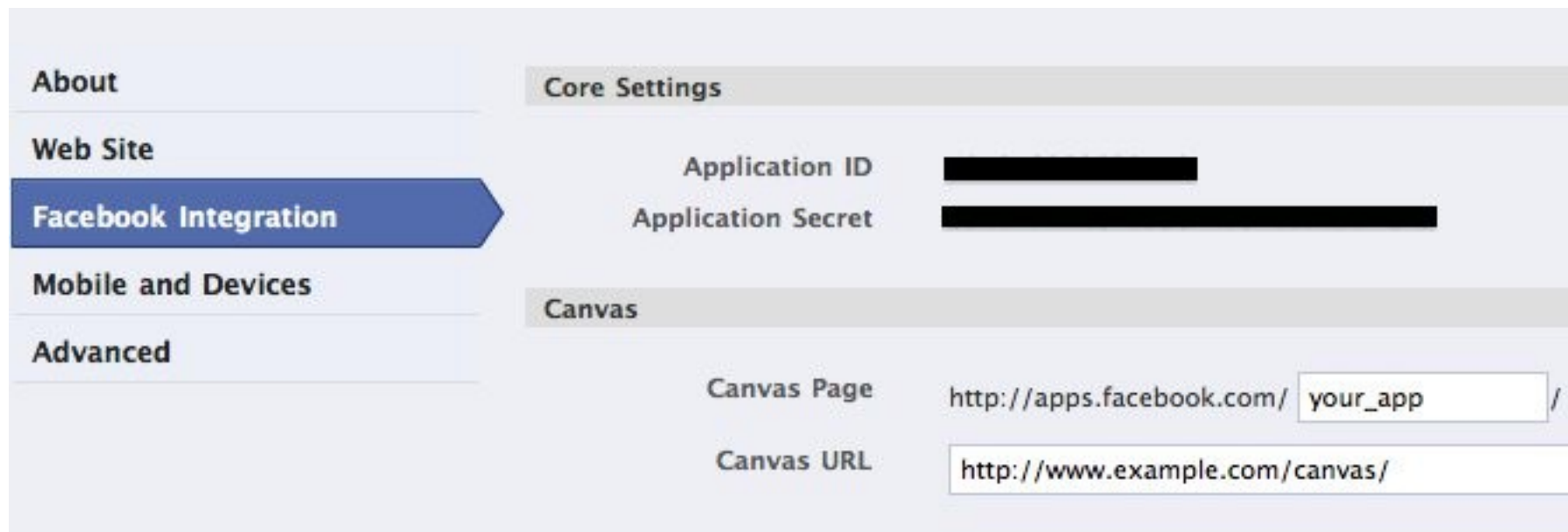
Terms Do you agree to the [Facebook Terms](#)?

☒ Agree ☐ Disagree

[Create Application](#)

Getting Started

- Register your Facebook application
 - Note down your Application ID and Application Secret



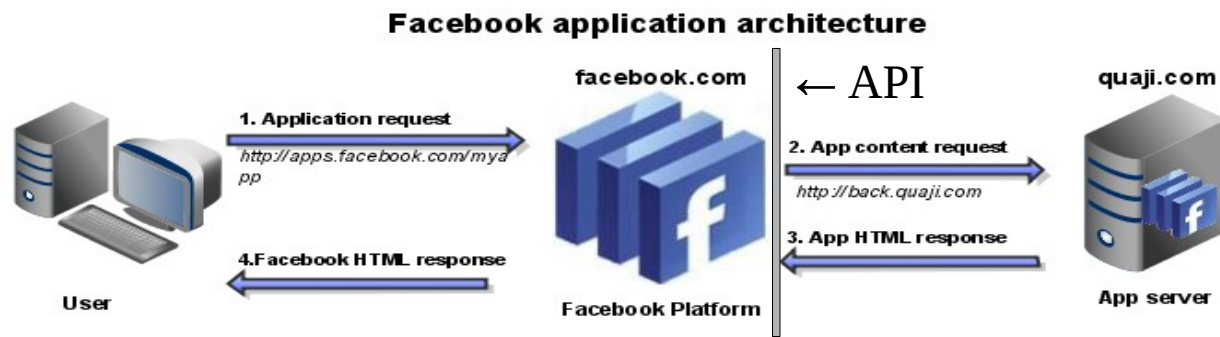
The screenshot displays the Facebook Developer console interface. On the left, a sidebar contains navigation links: 'About', 'Web Site', 'Facebook Integration' (highlighted with a blue arrow), 'Mobile and Devices', and 'Advanced'. The main content area is divided into two sections. The 'Core Settings' section contains 'Application ID' and 'Application Secret', both of which are redacted with black bars. The 'Canvas' section contains 'Canvas Page' and 'Canvas URL'. The 'Canvas Page' field is populated with 'http://apps.facebook.com/ your_app /', where 'your_app' is inside a text input box. The 'Canvas URL' field is populated with 'http://www.example.com/canvas/' inside a text input box.

Core Settings	
Application ID	[REDACTED]
Application Secret	[REDACTED]

Canvas	
Canvas Page	http://apps.facebook.com/ <input type="text" value="your_app"/> /
Canvas URL	<input type="text" value="http://www.example.com/canvas/"/>

Facebook APIs

- API (Application Programming Interface)
 - Facebook APIs to interact with Facebook Servers
- Core APIs
 - Graph API
<http://developers.facebook.com/docs/reference/api/>
 - Social Plugin
<http://developers.facebook.com/docs/reference/plugins/>



Facebook SDKs

- JavaScript SDK
- PHP SDK
- Python
 - Python SDK (github.com/facebook/python-sdk)
 - PyFacebook (github.com/scioshi/pyfacebook)
- iOS SDK for iPhone and iPad
- Android SDK

PyFacebook

- Download and extract the library
- Install PyFacebook
 - `sudo python setup.py install`
- Example Code at
<http://github.com/sciyoshi/pyfacebook/blob/master/examples/examples.py>

Desktop Application example

```
def desktop_app():
    from facebook import Facebook

    # Get api_key and secret_key from a file
    facebook = Facebook('48c351b8adaae5a1600a1bbc3a7dc132', '8e12c35cef98919a5c9ee915d5829463')

    facebook.auth.createToken()
    # Show login window
    facebook.login()

    # Login to the window, then press enter
    print 'After logging in, press enter...'
    raw_input()

    facebook.auth.getSession()
    info = facebook.users.getInfo([facebook.uid], ['name', 'birthday', 'affiliations', 'sex'])[0]

    for attr in info:
        print '%s: %s' % (attr, info[attr])

    friends = facebook.friends.get()
    friends = facebook.users.getInfo(friends[0:5], ['name', 'birthday', 'relationship_status'])

    for friend in friends:
        if 'birthday' in friend:
            print friend['name'], 'has a birthday on', friend['birthday'], 'and is', friend['relationship_status']
        else:
            print friend['name'], 'has no birthday and is', friend['relationship_status']

    arefriends = facebook.friends.areFriends([friends[0]['uid']], [friends[1]['uid']])

if __name__=="__main__":
    desktop_app()
```

Run Example

- Save file as `python-fb_example.py` in your canvas folder
- Open a terminal and type
 - `python python-fb_example.py`

Example (Contd)

- Example code also has sample code to run Web application framework
- Give it a try

```
info = facebook.users.getInfo([facebook.uid],  
['name', 'birthday', 'affiliations', 'sex'])[0]
```

```
for attr in info:
```

```
    print '%s: %s' % (attr, info[attr])
```

- users.getInfo is a Facebook API
- Read more about users.getInfo at developers.facebook.com/docs/reference/rest/users.getInfo

Development Documentation

More Facebook APIs

- Graph Realtime API
- Facebook Query Language (FQL)
- Facebook Markup Language (FBML)
- Old REST API
- Old JavaScript Client Library
- Internationalization
- Integrating with Facebook Chat
- Facebook Ads API

Old REST API

- developers.facebook.com/docs/reference/rest/
- Data Retrieval Methods
 - `users.getInfo`
 - `pages.getInfo`

pages.getInfo

```
info_pages = facebook.pages.getInfo(uid)
for info in info_pages:
    for attr in info:
        print '%s: %s' % (attr, info[attr])
```

- Returns you list of all pages a user is a fan
- You can go to each page at [http://www.facebook.com/profile.php?id=%s" % \(info\[attr\]\)](http://www.facebook.com/profile.php?id=%s)
- Let's look at it more closely

Parameters

Name	Type	Description
fields	string	List of desired fields to return. This is a comma-separated list of field strings and is described below.
callback	string	Wrap the response inside a function call. This is primarily to enable cross-domain javascript requests using the <script> tag, sometimes known as "JSONP". This works with both XML and JSON.
page_ids	string	List of page IDs. This is a comma-separated list of page IDs.
uid	int	The ID of the user. Defaults to the logged in user if the session_key is valid, and no page_ids are passed. Used to get the pages a given user is a fan of.

Response

The Page info elements returned are those visible to Facebook Platform. Following is a list of arguments and the elements they return

```
info_pages =  
    facebook.pages.getInfo(fields='page_id,website',uid=uid)  
  
print info_pages  
print "\n\n"  
for info in info_pages:  
    print info  
    for attr in info:  
        print attr,":",str(info[attr]).replace("\n","\t")  
print "\n"
```


Sample Response

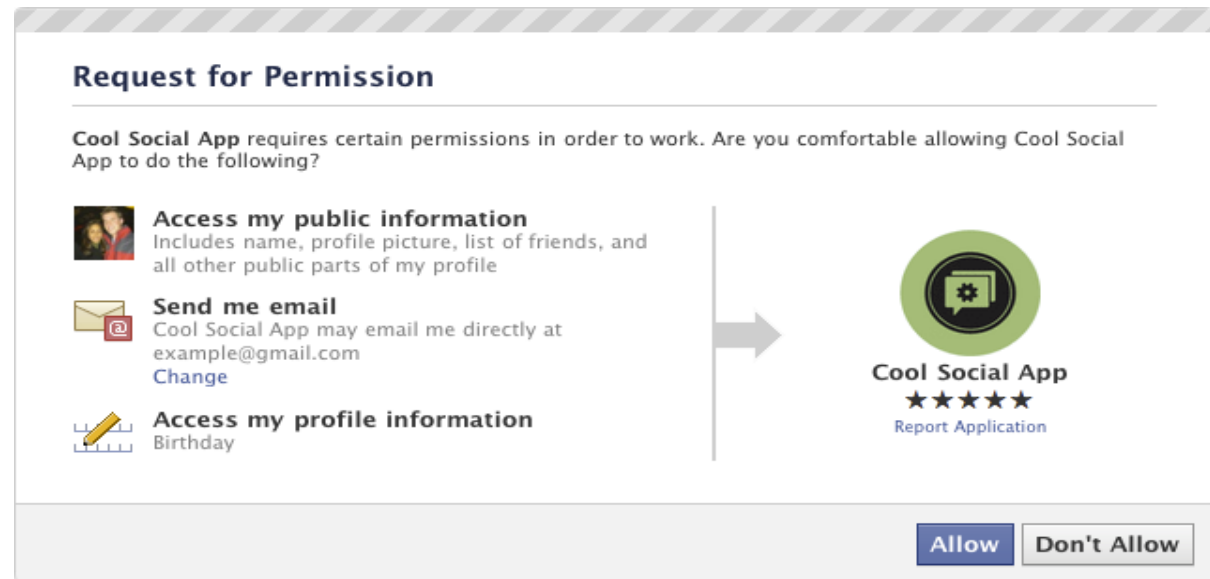
```
[{u'website': u'http://www.familyguy.com/\nhttp://www.fox.com', u'page_id': 24609282673L},  
 {u'website': u'http://abc.go.com/shows/castle/\n\n', u'page_id': 50812608637L}, {u'website':  
 u'http://www.mirchmasala.me/\n\nhttp://soimarriedameataholic.blogspot.com/', u'page_id':  
 284961680127L}]
```

```
{u'website': u'http://www.familyguy.com/\nhttp://www.fox.com', u'page_id': 24609282673L}  
website : http://www.familyguy.com/  http://www.fox.com  
page_id : 24609282673
```

```
{u'website': u'http://abc.go.com/shows/castle/\n\n', u'page_id': 50812608637L}  
website : http://abc.go.com/shows/castle/  
page_id : 50812608637
```

Privacy Note

- Before your application can get data or publish data on behalf of the user, they need user approved permission
 - developers.facebook.com/docs/authentication/permissions



Thank You!

Disclaimer: All figures used in this presentation are reproduced from Facebook Documentation or are made by taking screen-shots from Facebook pages unless otherwise referenced.