DRUPALCON
ASIA
2016

Seamless inter-operability of mobility and web using Drupal

Introductions

Problem

Challenges

The Solution

How it’s done?

Live demo

The future

Introductions

Melvin & Azhan

Singapore Management University (SMU)

DRUPALCON
ASIA
2016
The team

DRUPALCON ASIA 2016

SMU Quick Facts

SMU Quick Facts

ESTABLISHED IN JANUARY 2000

ALMOST 10,000 UNDERGRADUATES & POSTGRADUATES
50% INTERNATIONAL POSTGRADUATE STUDENTS FROM 34 COUNTRIES
11% INTERNATIONAL UNDERGRADUATE STUDENTS FROM 25 COUNTRIES

OVER 14,000 ALUMNI

SMU & Drupal

Started Drupal - 2013

40-50 active webmasters

Over 100 Drupal-based sites

DRUPALCON ASIA 2016

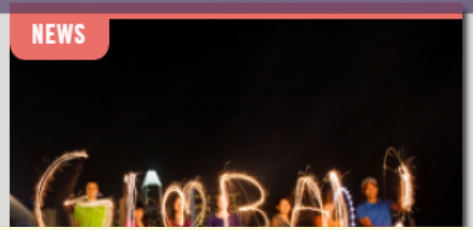
SMU
SINGAPORE MANAGEMENT UNIVERSITY

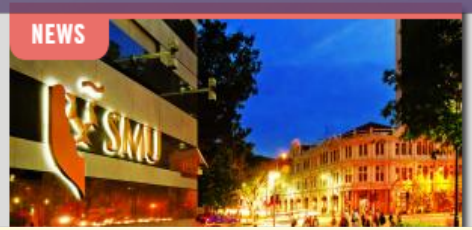
Office of
Global Learning

Search...

ABOUT US | GLOBAL PROGRAMMES | INTERNATIONAL STUDENTS | DIVERSITY & INCLUSION | CONTACT US | NEWS | EVENTS

Office of Global Learning





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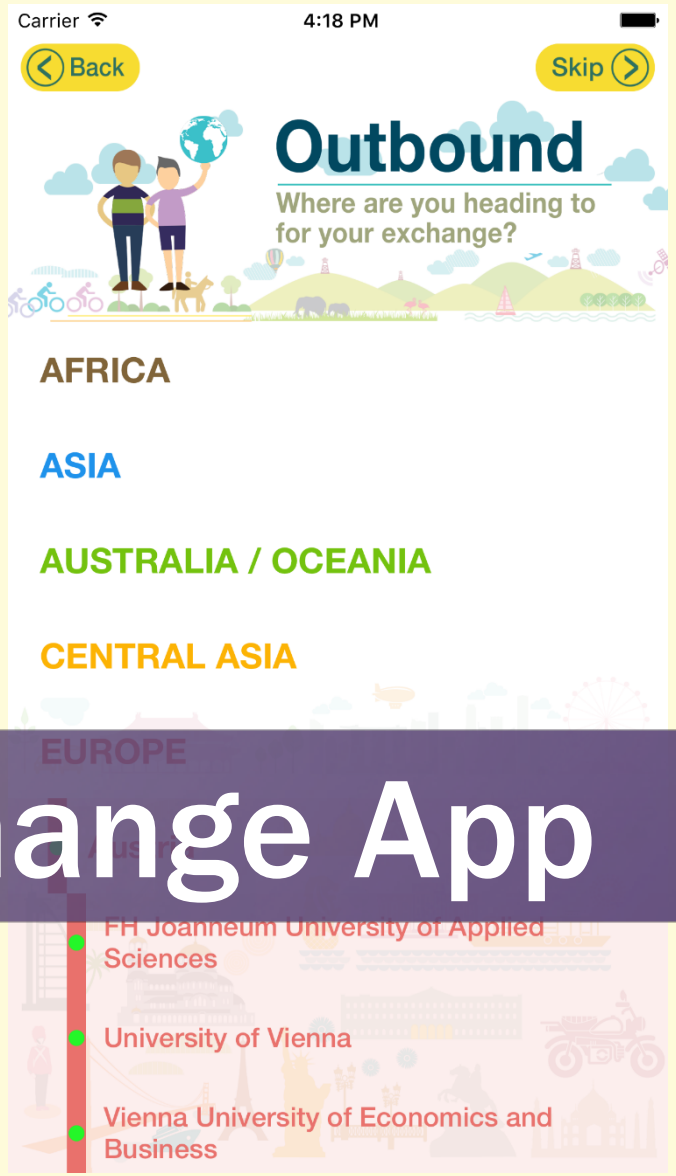
GLOBAL STUDENT PROGRAMMES

INTERNATIONAL STUDENT EXPERIENCE

DIVERSITY AND INCLUSION



The Global Exchange App

The problem

Mobile App
to improve comms
accessibility to
&
notification of
important information

Challenges

works without internet access

single source of content

simple content management

automatic content sync

notification of urgent advisories

Possible Solutions

FrontEnd: Native Mobile App

BackEnd:

Evernote-ish?

WordPress?

Drupal?

The Solution

FrontEnd: Native Mobile App

BackEnd:

~~Evernote-ish?~~

~~WordPress?~~

Drupal

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How it works

SMU GLOBAL EXCHANGE

How It Works?

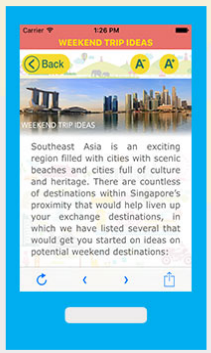
1. Student downloads App from Apple App Store, Google Play

Available on the iPhone App Store | ANDROID APP ON Google play

2. App launches and updates itself with the latest content from Web

SMU Web Portal (Drupal)

- JSON
- Images
- Videos
- Documents



3. Content Owner makes changes to a webpage and saves

Saves

SMU Web Portal (Drupal)

Internet Available

a. App transparently updates and displays new content.

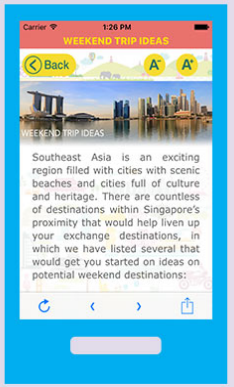
b. All the assets in the page are saved for future offline viewing.

Internet Unavailable

a. App retrieves and displays the saved copy of the page.

b. Awaits for internet to be available.

c. Updates content when there is internet.



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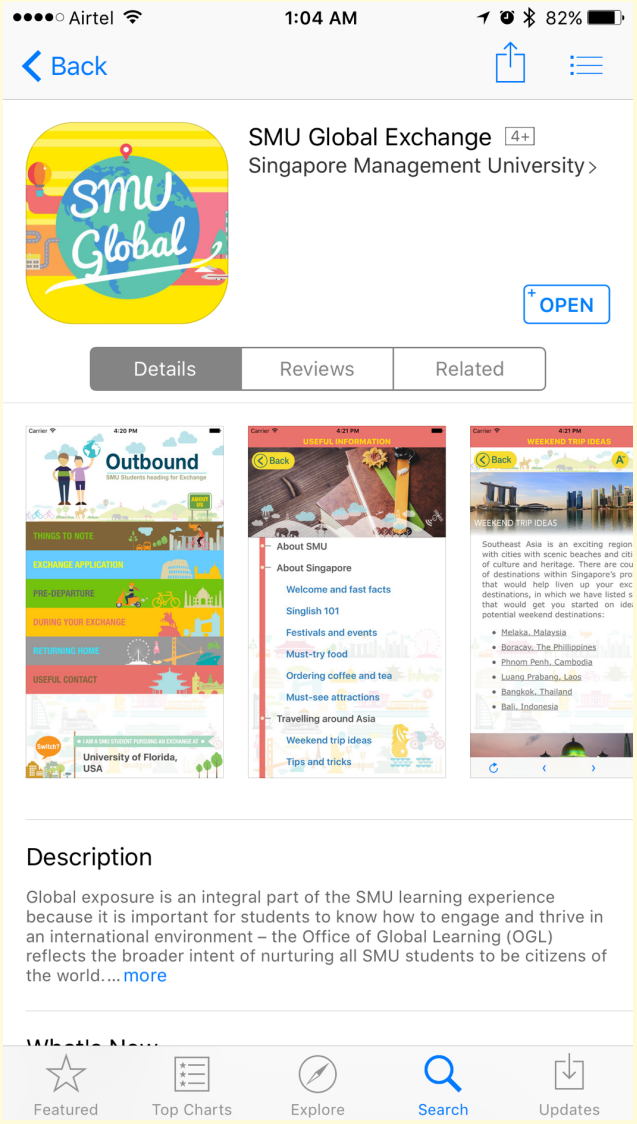
APPLE APP STORE



GOOGLE PLAY STORE

SMU Global Exchange

Singapore Management University

3+

INSTALL

50 Downloads

5.0 ★★★★★ 1

Education

Similar

2
App launches and updates itself with the latest content from Web
SMU Web Portal (Drupal)
JSON
Images
Videos
Documents
WEEKEND TRIP IDEAS
Back
Southeast Asia is an exciting region filled with cities with scenic beaches and cities full of culture and heritage. There are countless of destinations within Singapore's proximity that would help liven up your exchange destinations, in which we have listed several that would get you started on ideas on potential weekend destinations:

3 Content Owner makes changes to a webpage and saves

Internet Available

a. App transparently updates and displays new content.

b. All the assets in the page are saved for future offline viewing.

Internet Unavailable

a. App retrieves and displays the saved copy of the page.

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How is it done?

Backend – Drupal modules

VIEWS, VIEWS UI, CTOOLS, TOKEN, LIBRARIES

SERVICES, REST SERVER, SERVICES VIEWS, SERVICES MENU

DRUPAL

Structure > Services > Add+

Home » Administration » Structure » Services

Add a new endpoint

Machine-readable name of the endpoint *

mobile

The endpoint name can only consist of lowercase letters, underscores, and numbers.

Server *

REST

Select a the server that should be used to handle requests to this endpoint.

Path to endpoint *

mobile

Debug mode enabled

Useful for developers. Do not enable on production environments

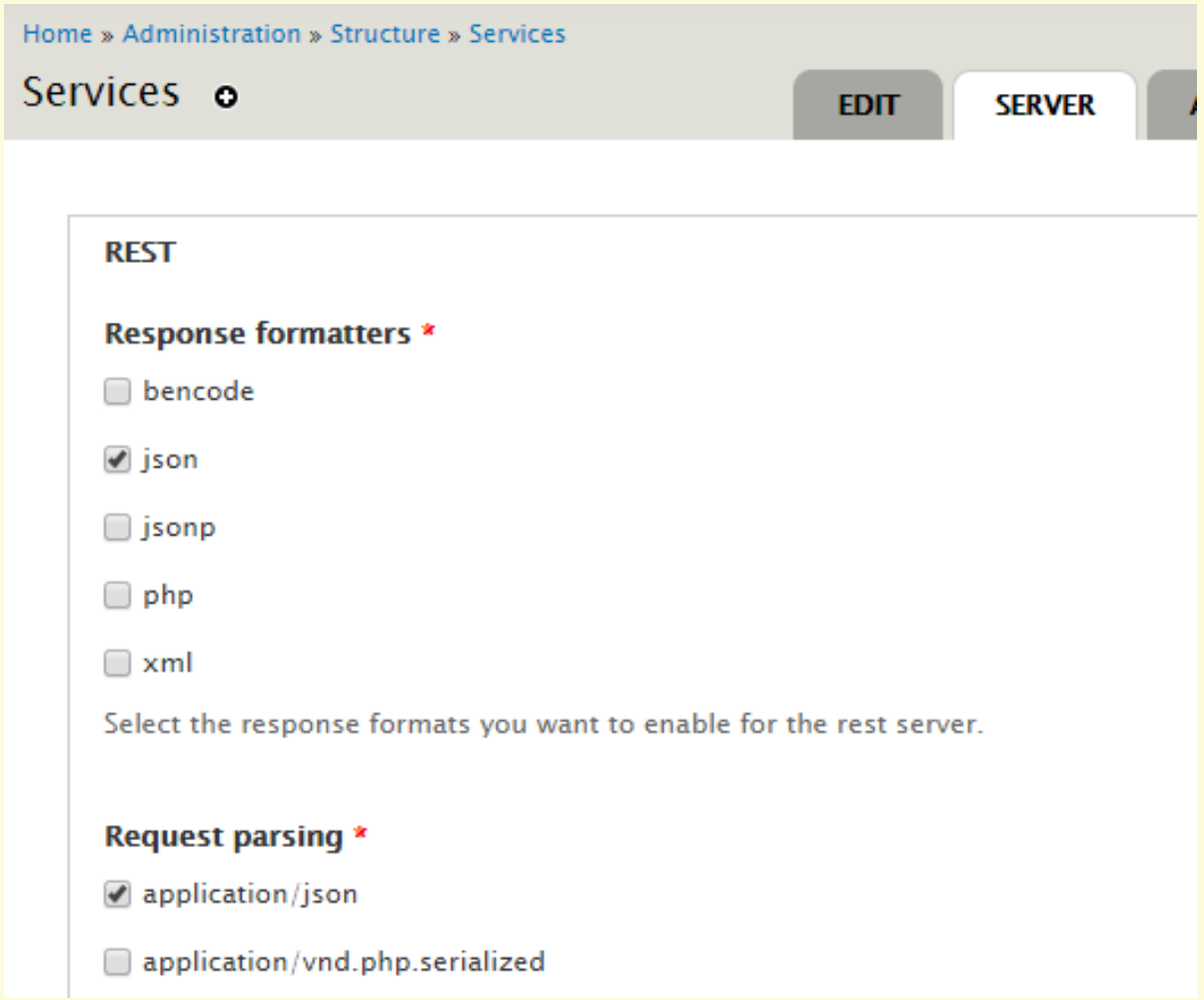
Authentication

Session authentication

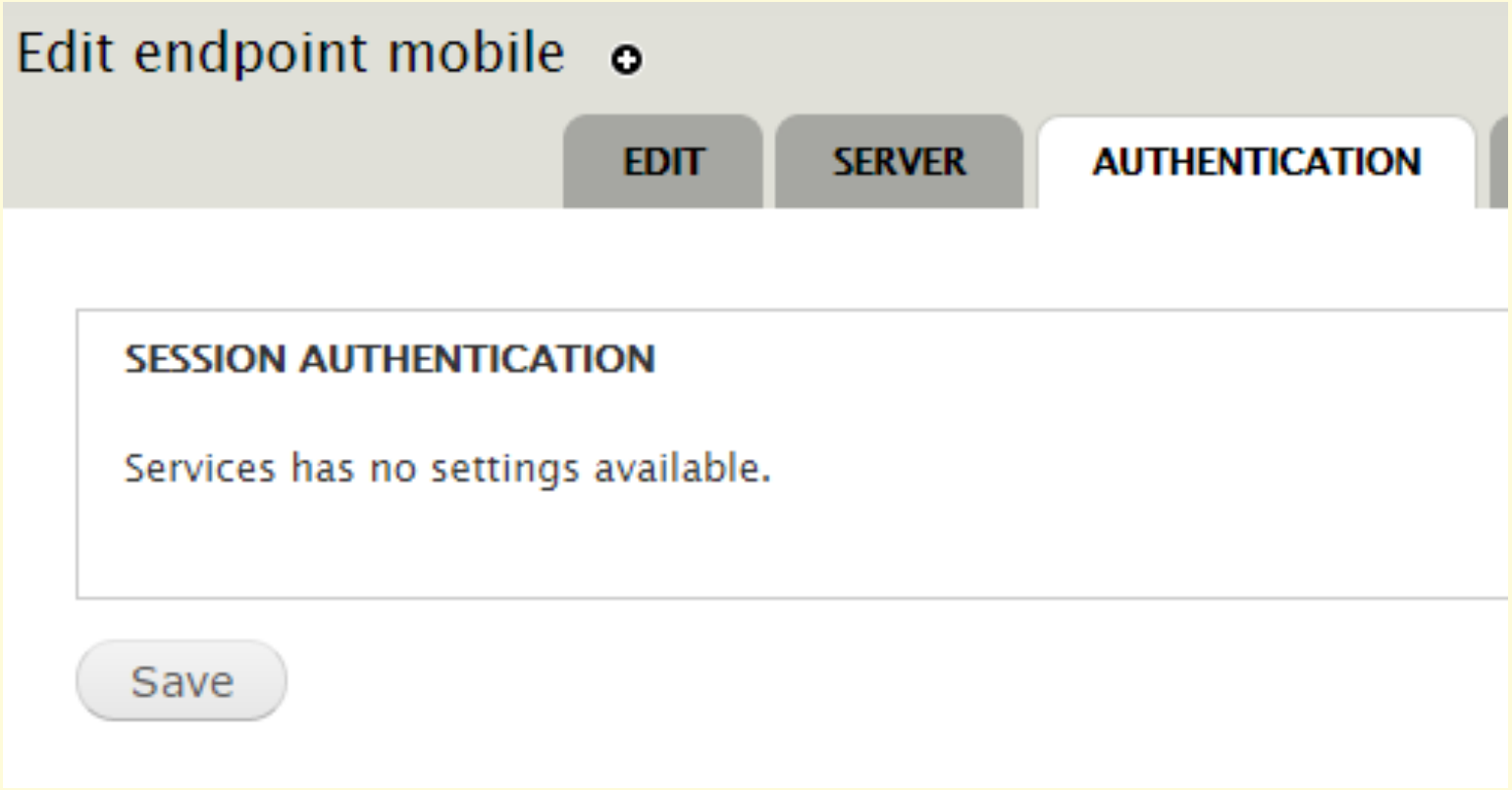
Choose which authentication schemes that should be used with your endpoint. If no a
will be done by an anonymous user.

Save

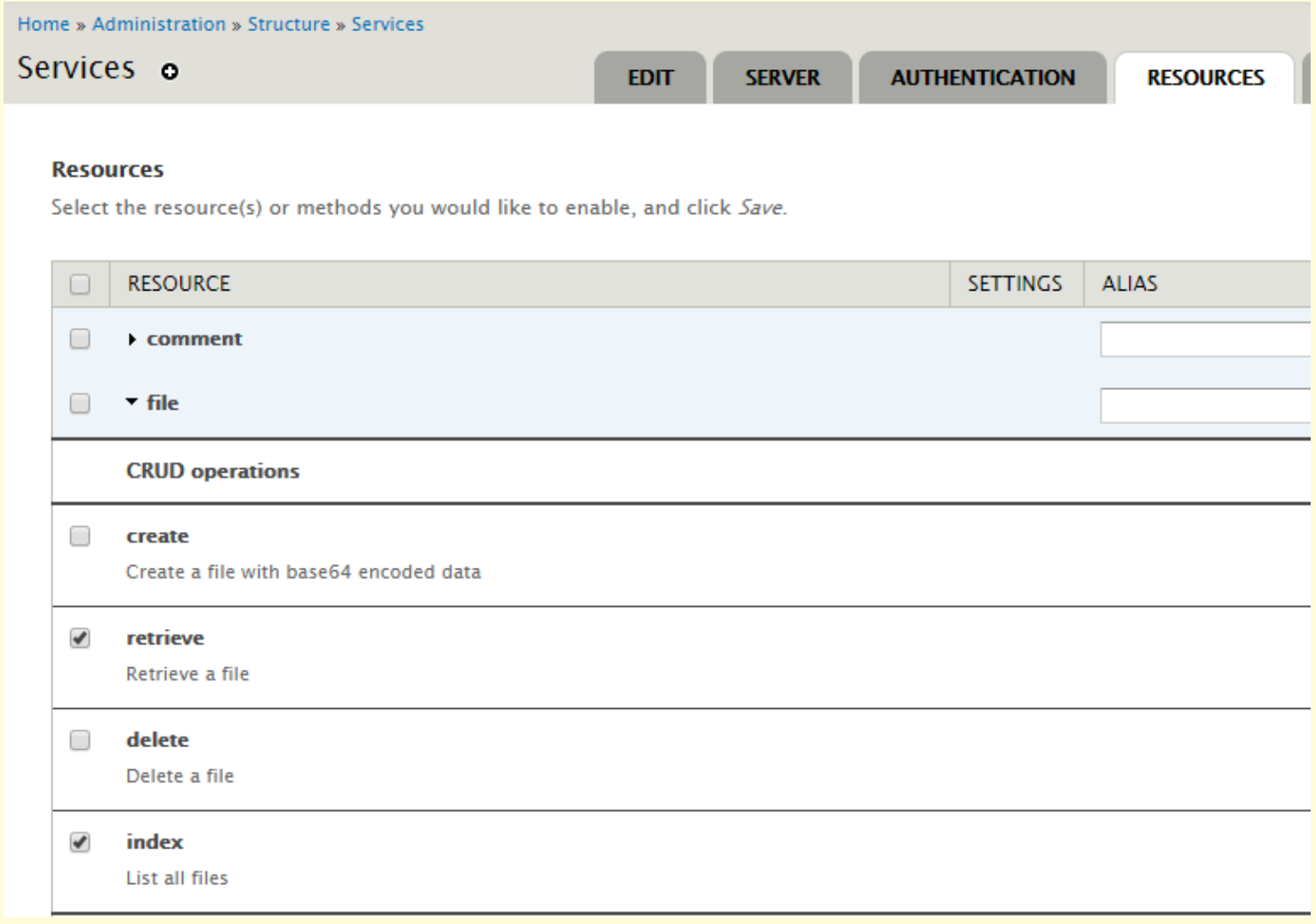
Structure > Services > Server



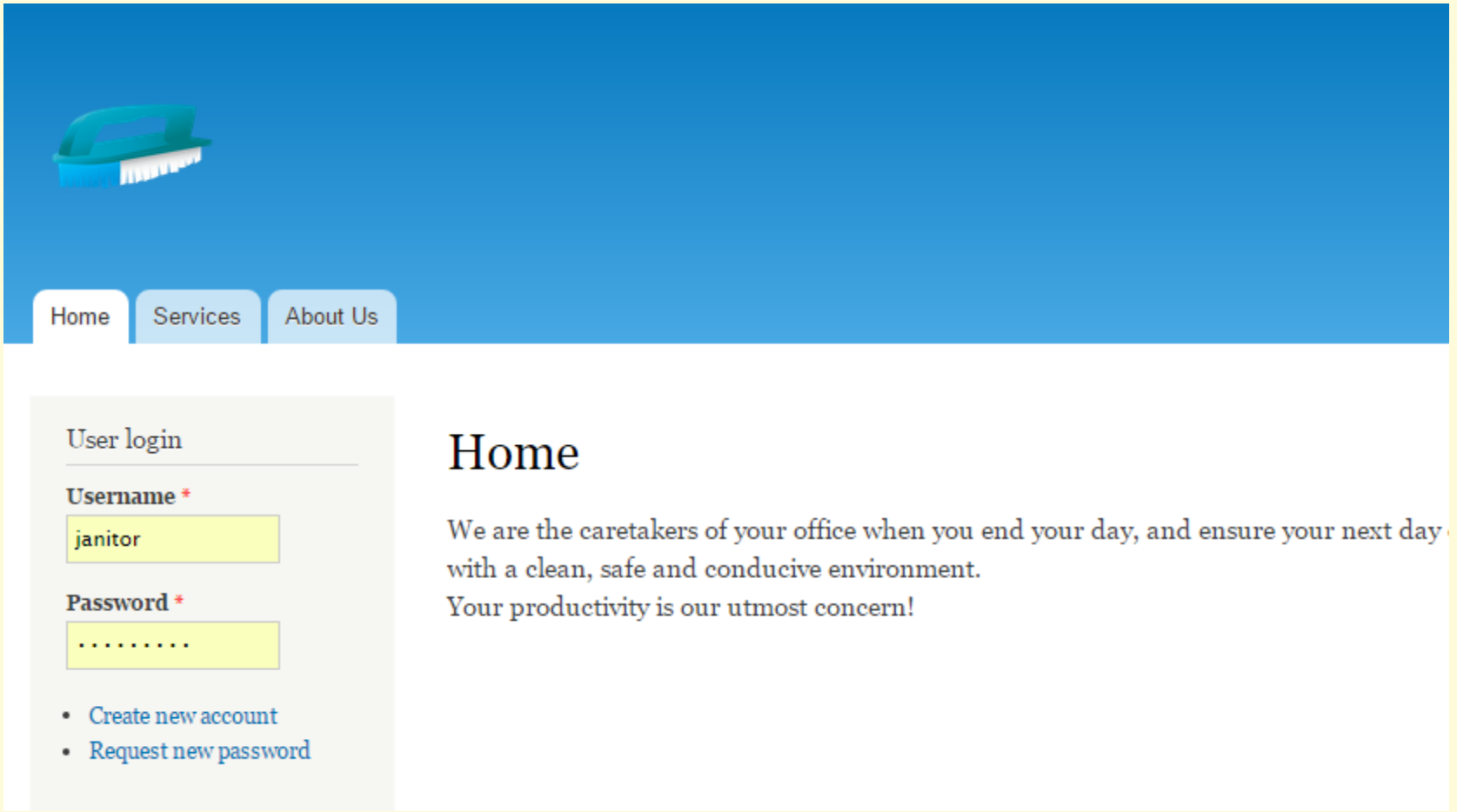
Structure > Services > Auth



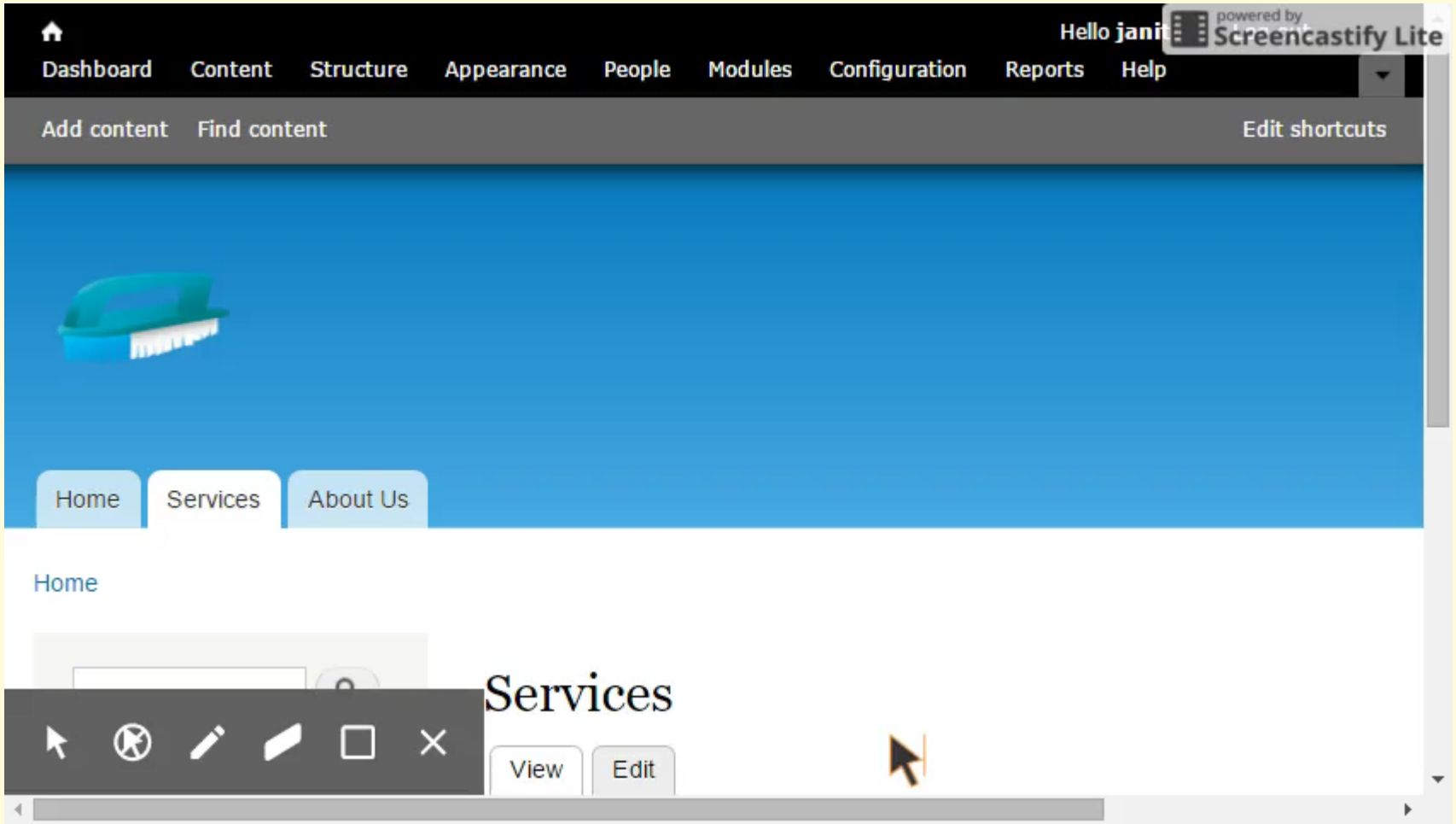
Structure > Services > Resources



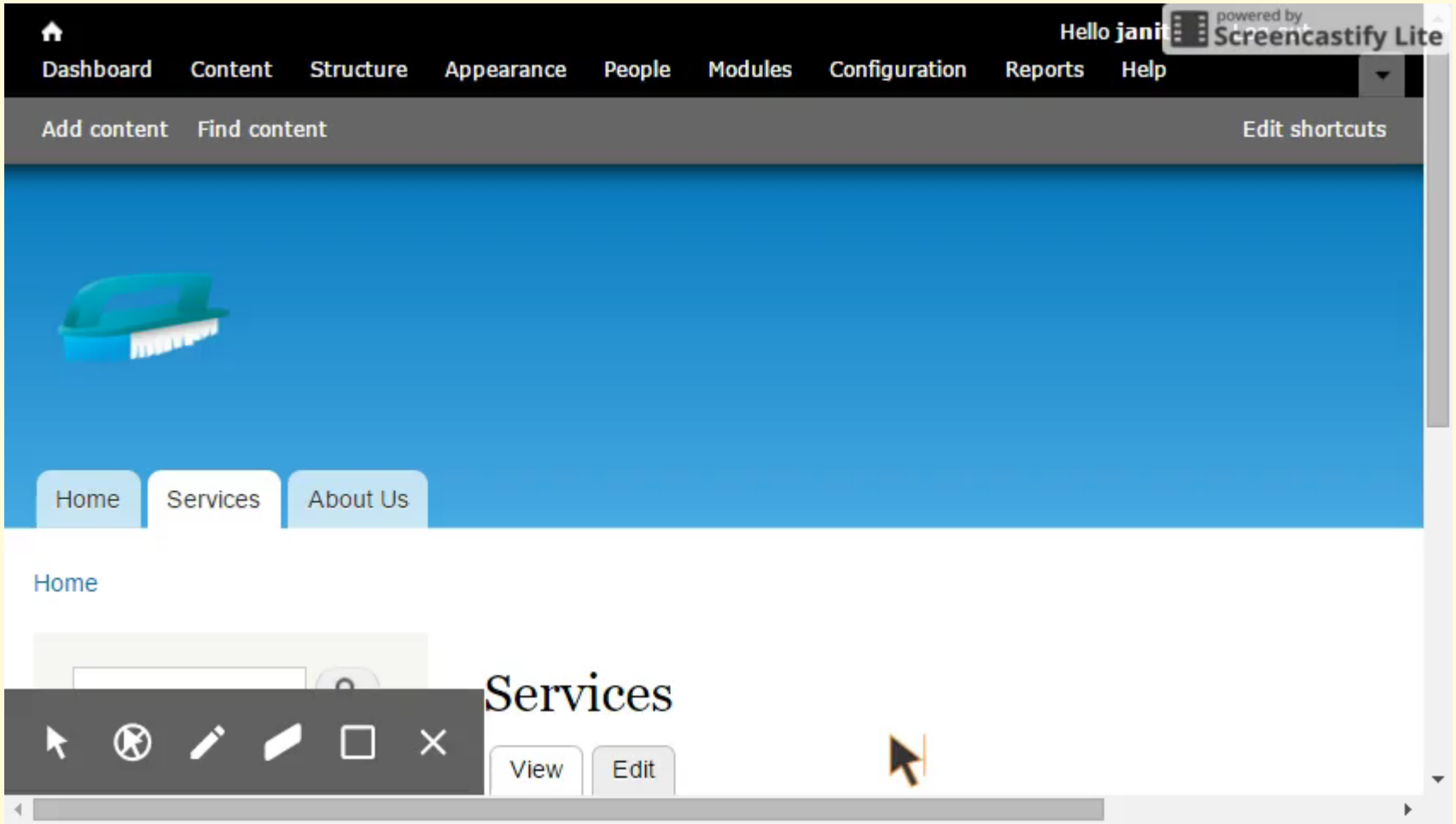
The Drupal site



Drupal node (normal view)

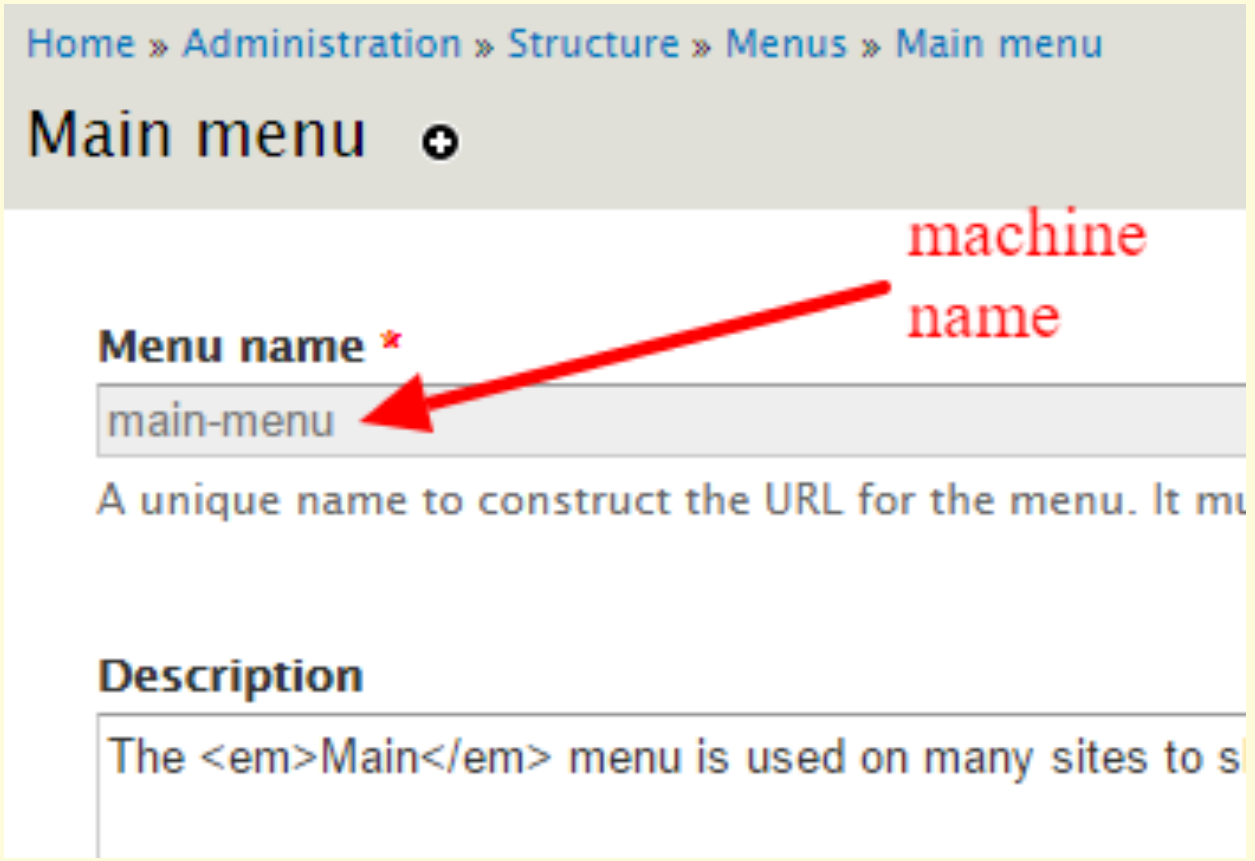


Drupal node (normal view)

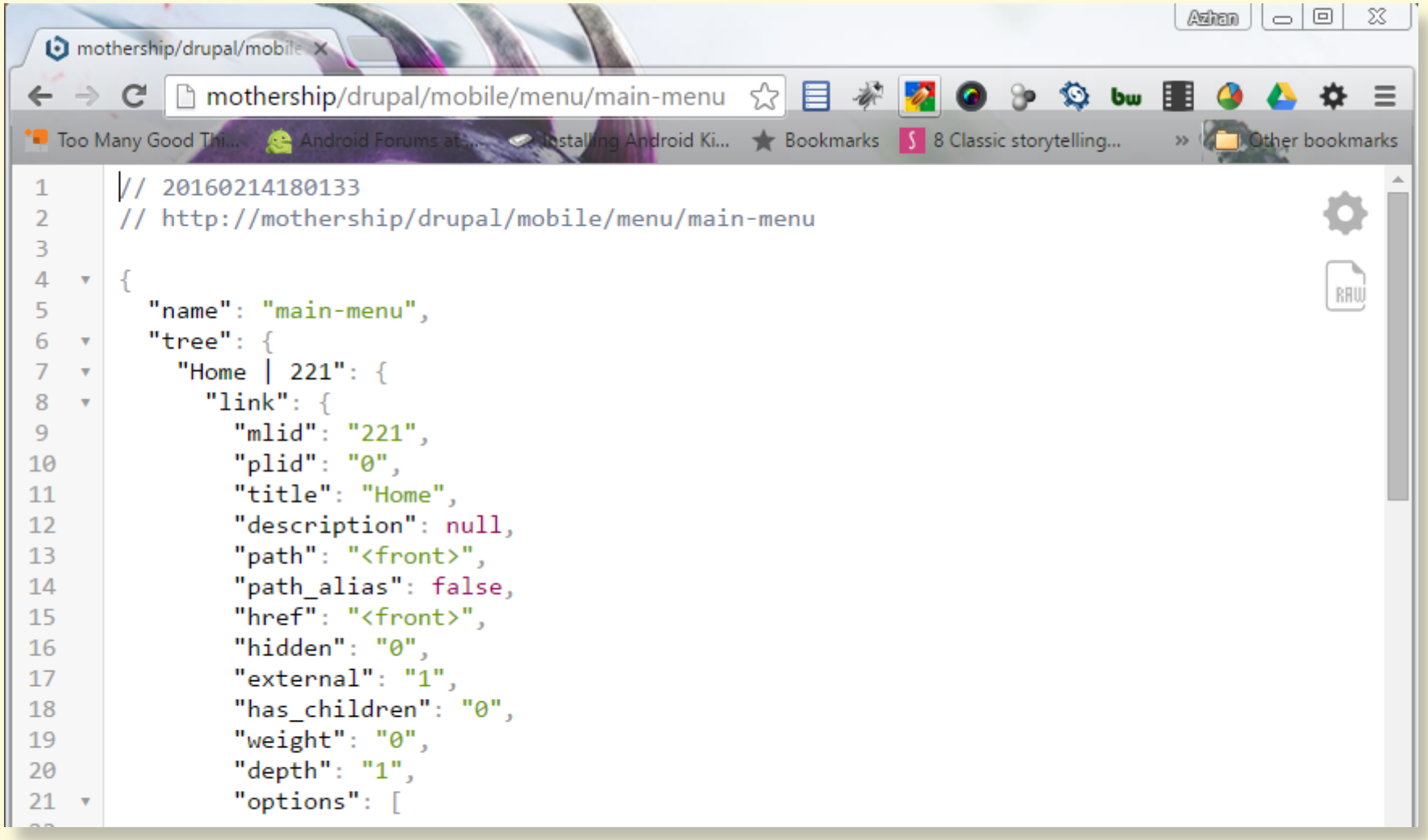


Drupal node as JSON feed

Exporting the Main menu



Drupal menu as JSON feed



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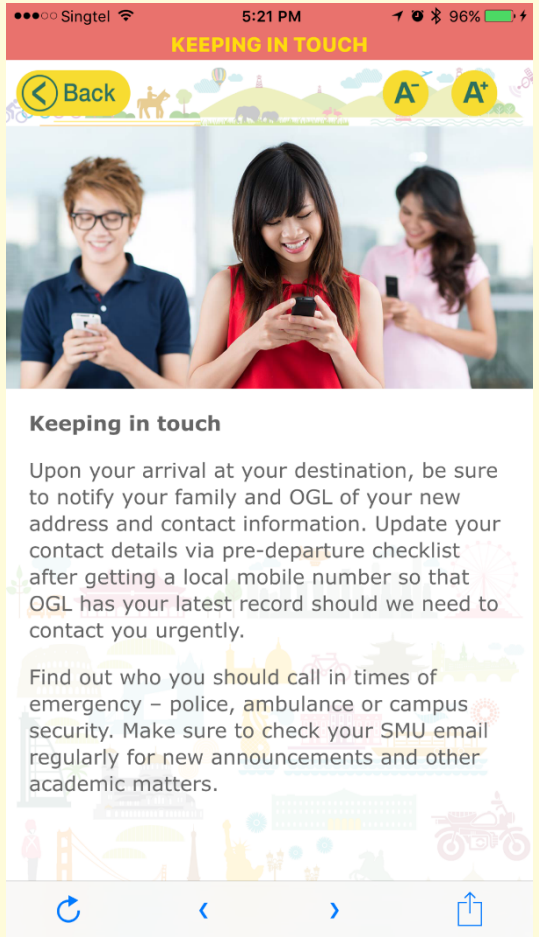
Drupal with iOS and Android

Consuming JSON feed

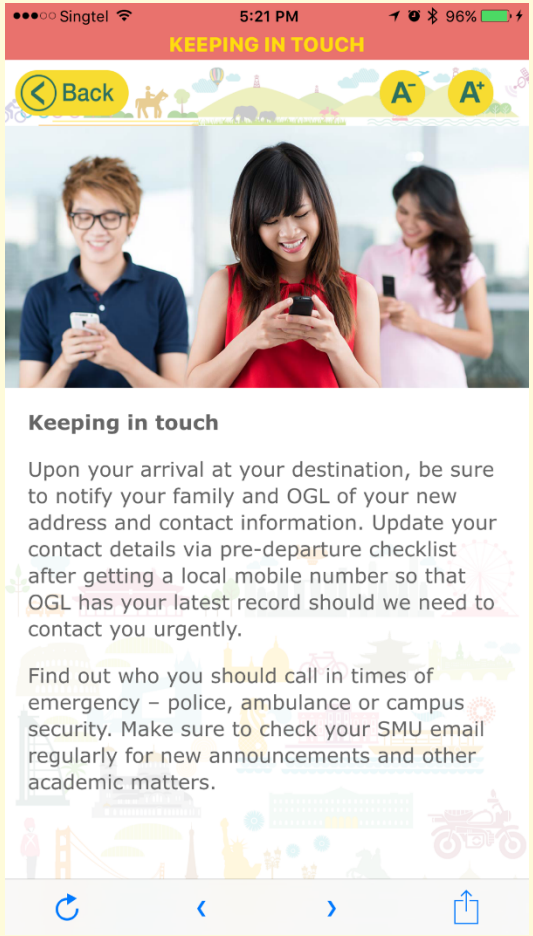
MAIN MENU

SUB MENU

CONTENT



Consuming JSON feed



Node 871

https://www.smu.edu.sg/global/mobile/node/871

www.smu.edu.sg/global/mobile/node/871

https://www.smu.edu.sg/global/mobile/node/871


```
{"vid":"876","uid":"31","title":"Outgoing - During your Exchange - Keeping in
Touch","log":"","status":"1","comment":"1","promote":"0","sticky":"0","nid":"871","type":"page","language":"
und","created":"1439887261","changed":"1443782640","tnid":"0","translate":"0","revision_timestamp":"14437826
40","revision_uid":"11","body":{"und":[{"value":"<!--NoBodyMargin--><!--NoDivPadding-->\r\n<p><img alt=\"\"
src=\"/global/sites/smu.edu.sg.global/files/oglmobile/Outbound/DuringExchange/Outgoing-DuringExchange-a-
1.jpg\" style=\"width: 100%;\"></p><div style=\"padding-left: 18px; padding-right: 18px;\"><p>
<strong>Keeping in touch</strong> <p>Upon your arrival at your destination, be sure to notify your family
and OGL of your new address and contact information. Update your contact details via pre-departure checklist
after getting a local mobile number so that OGL has your latest record should we need to contact you
urgently.</p>\r\n\t<p>Find out who you should call in times of emergency \u2013 police, ambulance or campus
security. Make sure to check your SMU email regularly for new announcements and other academic matters.
</p>\r\n</div>\r\n<p></p>\r\n","summary":"","format":"full_html","safe_value":"<!--NoBodyMargin--><!--
NoDivPadding-->\n<p><img alt=\"\"
src=\"/global/sites/smu.edu.sg.global/files/oglmobile/Outbound/DuringExchange/Outgoing-DuringExchange-a-
1.jpg\" style=\"width: 100%;\"></p><div style=\"padding-left: 18px; padding-right: 18px;\"><p>
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security. Make sure to check your SMU email regularly for new announcements and other academic matters.
</p>\n</div>\n<p></p>\n","safe_summary":""}]},"field_banner_image":[],"field_background_colour":{"und":
[{"value":"#d9d9d9"}]},"rdf_mapping":{"rdftype":["foaf:Document"],"title":{"predicates":
["dc:title"]},"created":{"predicates":
["dc:date","dc:created"],"datatype":"xsd:dateTime","callback":"date_iso8601"},"changed":{"predicates":
["dc:modified"],"datatype":"xsd:dateTime","callback":"date_iso8601"},"body":{"predicates":
["content:encoded"]},"uid":{"predicates":["sioc:has_creator"],"type":"rel"},"name":{"predicates":
["foaf:name"]},"comment_count":{"predicates":["sioc:num_replies"],"datatype":"xsd:integer"},"last_activity":
{"predicates":
["sioc:last_activity_date"],"datatype":"xsd:dateTime","callback":"date_iso8601"}},"cid":"0","last_comment_ti
mestamp":"1439887261","last_comment_name":null,"last_comment_uid":"31","comment_count":"0","locations":
[],"location":
[],"name":"derekchiang","picture":"0","data":"b:0;","path":"https://www.smu.edu.sg/global/content/outgoing-
during-your-exchange-keeping-touch"}
```

Consuming JSON feed

Node 871

https://www.smu.edu.sg/global/mobile/node/871


```
{
 "vid": "876",
 "uid": "31",
 "title": "Outgoing - During your Exchange - Keeping in Touch",
 "log": "",
 "status": "1",
 "comment": "1",
 "promote": "0",
 "sticky": "0",
 "nid": "871",
 "type": "page",
 "language": "und",
 "created": "1439887261",
 "changed": "1443782640",
 "tnid": "0",
 "translate": "0",
 "revision_timestamp": "1443782640",
 "revision_uid": "11",
 "body": {
  "und": [
   {
    "value": "<!--NoBodyMargin--><!--NoDivPadding-->\r\n<p><img alt=\"\" src=\"/global/sites/smu.edu.sg.global/files/oglmobile/Outbound
      /DuringExchange/Outgoing-DuringExchange-a-1.jpg\" style=\"width: 100%;\"></p><div style=\"padding-left: 18px; padding-right: 18px;\"><p><strong
      >Keeping in touch</strong> <p>Upon your arrival at your destination, be sure to notify your family and OGL of your new address and contact
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      Make sure to check your SMU email regularly for new announcements and other academic matters.</p>\r\n</div>\r\n<p></p>\r\n",
    "summary": "",
    "format": "full_html",
    "safe_value": "<!--NoBodyMargin--><!--NoDivPadding-->\n<p><img alt=\"\" src=\"/global/sites/smu.edu.sg.global/files/oglmobile/Outbound
      /DuringExchange/Outgoing-DuringExchange-a-1.jpg\" style=\"width: 100%;\"></p><div style=\"padding-left: 18px; padding-right: 18px;\"><p><strong
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      Make sure to check your SMU email regularly for new announcements and other academic matters.</p>\n</div>\n<p></p>\n",
    "safe_summary": ""
   }
  ]
 },
```

JSON Field ‘safe_value’


```
"safe_value": "<p><img alt=\"\" src=\"/global/sites/smu.edu.sg
  .global/files/oglmobile/Outbound/DuringExchange/Outgoing
  -DuringExchange-a-1.jpg\" style=\"width: 100%;\"></p><div style
  =\"padding-left: 18px; padding-right: 18px;\"><p><strong
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  of emergency – police, ambulance or campus security. Make sure
  to check your SMU email regularly for new announcements and
  other academic matters.</p>\n</div>\n<p></p>\n",
```

Relative Path and Base URL

```
"safe_value": "<p><img alt=\"\" src=\"/global/sites
  /smu.edu.sg.global/files/oglmobile/Outbound
  /DuringExchange/Outgoing-DuringExchange-a-1.jpg\"
  style=\"width: 100%;\"></p><div style=\"padding-left
```

Base URL

<img src="https://www.smu.edu.sg/global/sites/smu.edu.sg.global/files/oglmobile/Outbound/DuringExchange/Outgoing-DuringExchange-a-1.jpg">

Consuming JSON feed on iOS

```
NSURLResponse *response;
NSError *error = nil;
NSURL *url = [NSURL URLWithString:@"https://www.smu.edu.sg/global/mobile/node/871"];
NSMutableURLRequest *urlReq=[NSMutableURLRequest requestWithURL:url];

NSData *receivedData = [NSURLConnection sendSynchronousRequest:urlReq
                                             returningResponse:&response
                                                         error:&error];


if(receivedData !=nil)
{
    NSError *jError = nil;
    NSDictionary* jsonDict = [NSJSONSerialization JSONObjectWithData:receivedData options:0 error:&jError];


    NSDictionary *body = (NSDictionary *)[jsonDict objectForKey:@"body"];

    NSArray *array = [body objectForKey:@"und"];
    NSDictionary *und = [array objectAtIndex:0];
    contentHTML = [und objectForKey:@"safe_value"];

    [self.webView loadHTMLString:contentHTML baseURL:[NSURL URLWithString:@"https://www.smu.edu.sg"]];
}
```

Consuming JSON feed on Android

```
private void loadWebView() {
    final WebView webView = (WebView) findViewById(R.id.webview);
    webView.post(new Runnable() {
        @Override
        public void run() {
            try {
                URL url = new URL("https://www.smu.edu.sg/global/mobile/node/871");
                HttpURLConnection urlConnection = (HttpURLConnection) url.openConnection();

                InputStream in = new BufferedInputStream(urlConnection.getInputStream());

                JSONObject response = new JSONObject(convertInputStreamToString(in));
                JSONObject body = response.getJSONObject("body");
                JSONArray und_array = body.optJSONArray("und");
                JSONObject und = und_array.optJSONObject(0);
                String safe_value = und.optString("safe_value");

                webView.loadDataWithBaseURL("https://www.smu.edu.sg", safe_value, "text/html", "UTF-8", null);
            }
            catch (Exception e) { e.printStackTrace(); }
        }
    });
}

private String convertInputStreamToString(InputStream inputStream) throws IOException {
    String line = ""; String result = "";
    BufferedReader bufferedReader = new BufferedReader(new InputStreamReader(inputStream));

    while((line = bufferedReader.readLine()) != null)
        result += line;

    return result;
}
```

JSON feed on native WebView


```
"safe_value": "<!--NoBodyMargin--><!--NoDivPadding-->\n
  <p><img alt=\"\" src=\"/global/sites/smu.edu.sg.global
  /files/oglmobile/Outbound/DuringExchange/Outgoing
  -DuringExchange-a-1.jpg\" style=\"width: 100%;\"></p
  ><div style=\"padding-left: 18px; padding-right: 18px
  ;\"><p><strong>Keeping in touch</strong> <p>Upon your
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  academic matters.</p>\n</div>\n<p></p>\n",
```


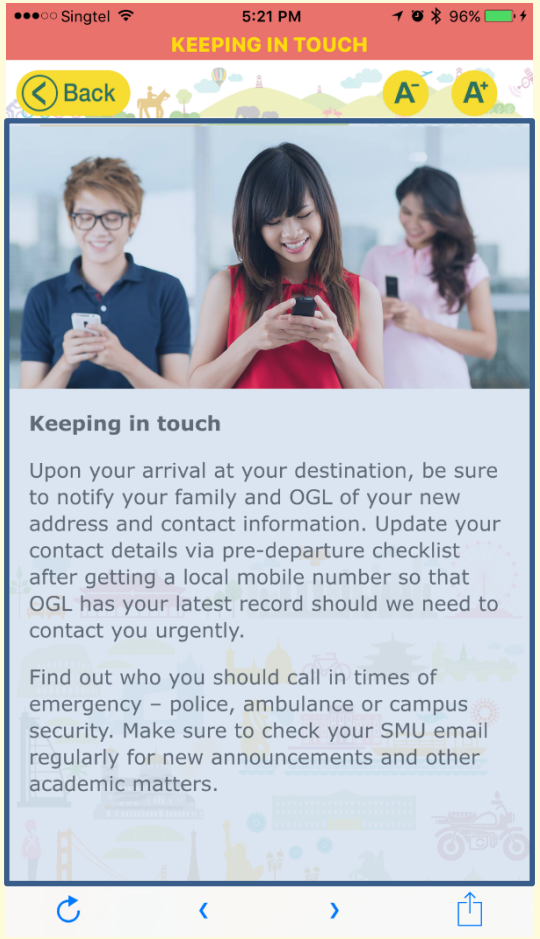

Offline Caching

3 Content Owner makes changes to a webpage and saves

Internet Available

a. App transparently updates and displays new content.

b. All the assets in the page are saved for future offline viewing.

Internet Unavailable

a. App retrieves and displays the saved copy of the page.

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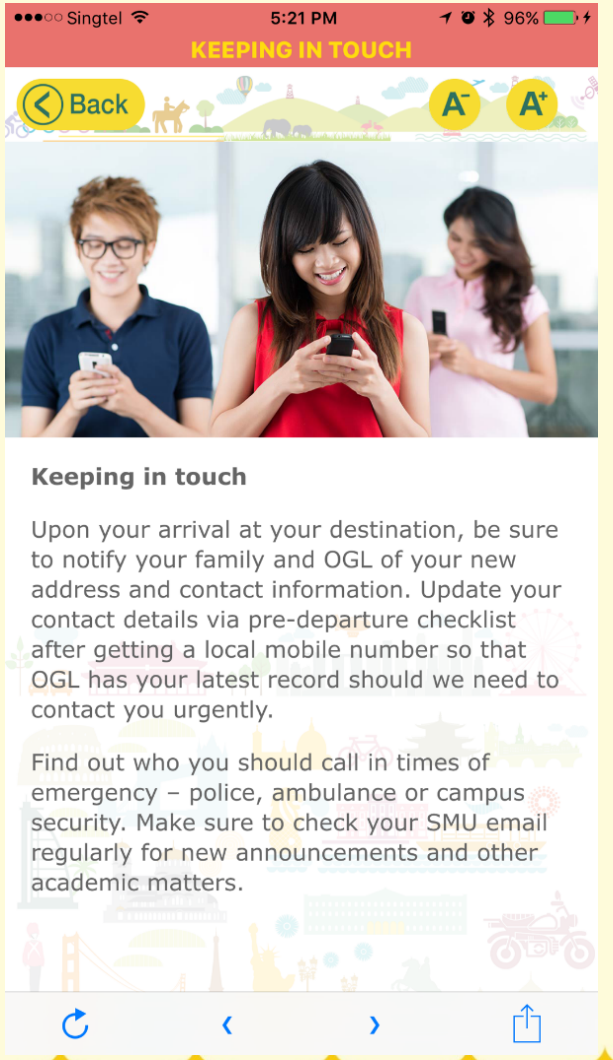
Offline Caching



Image

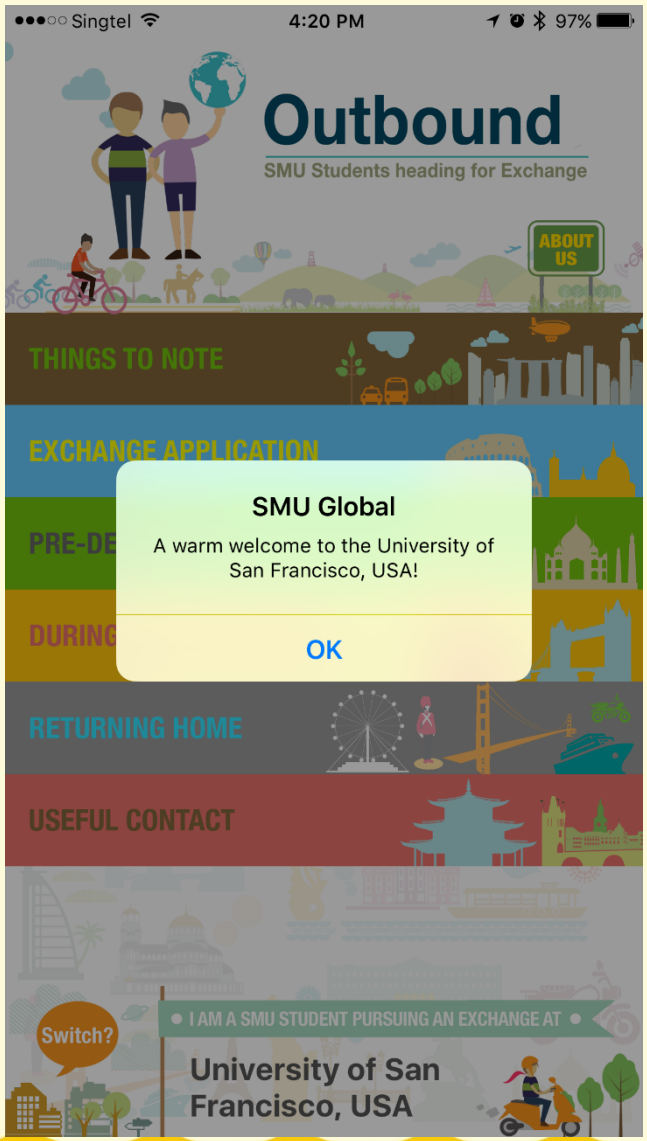
HTML Text

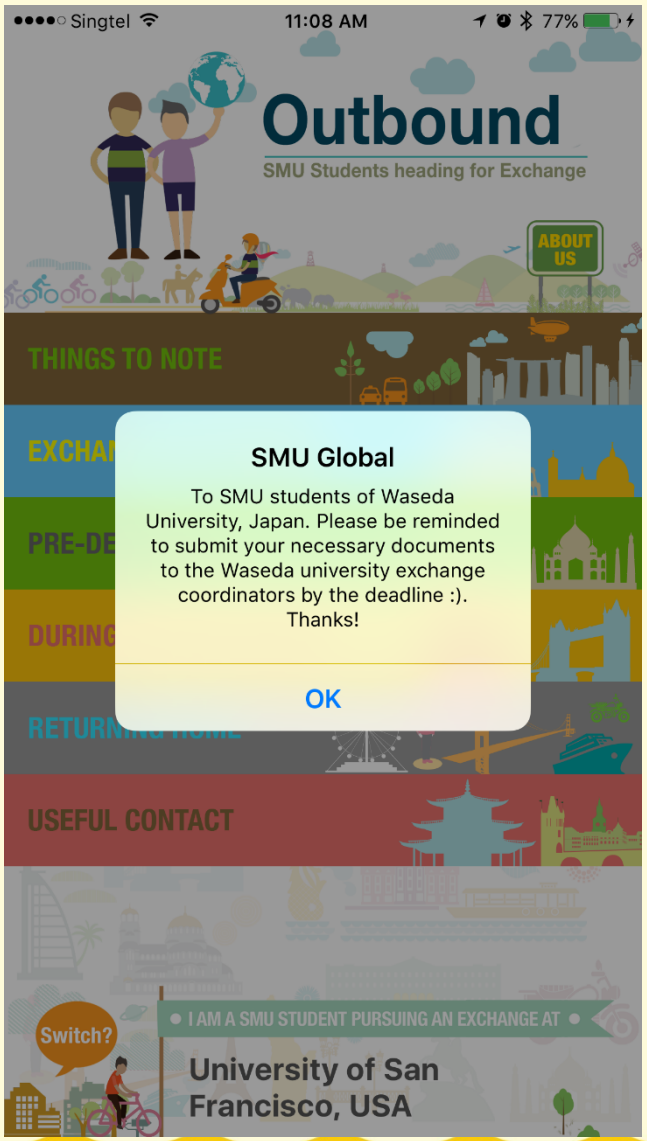
Keeping in touch

Upon your arrival at your destination, be sure to notify your family and OGL of your new address and contact information. Update your contact details via pre-departure checklist after getting a local mobile number so that OGL has your latest record should we need to contact you urgently.

Find out who you should call in times of emergency – police, ambulance or campus security. Make sure to check your SMU email regularly for new announcements and other academic matters.

Push Notifications





Push Notifications - Channels

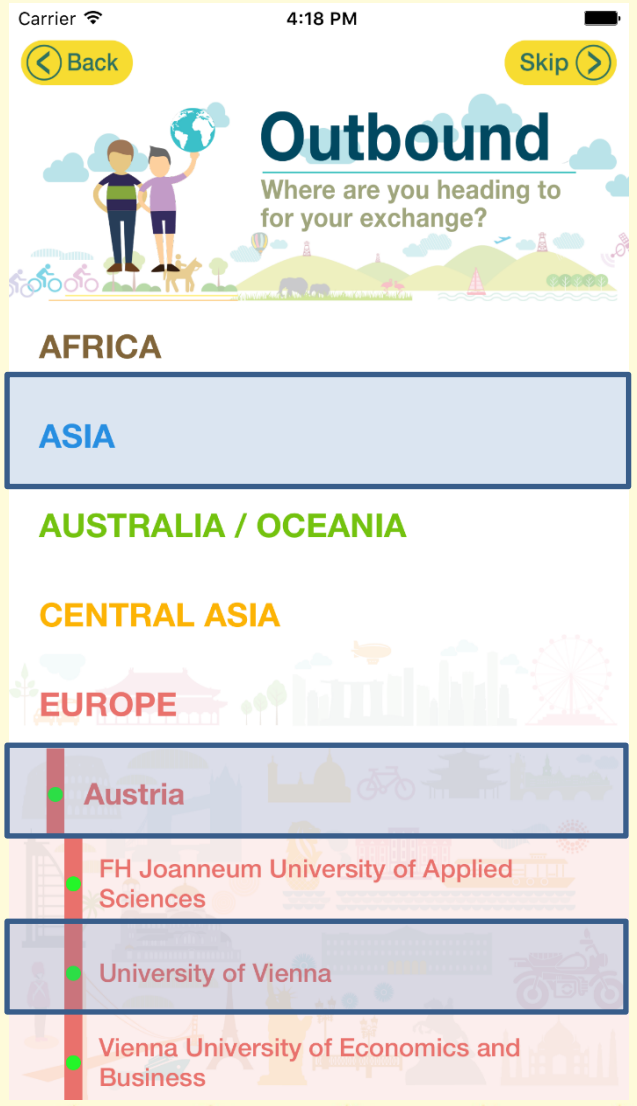
Outbound
SMU students visiting overseas Universities

Inbound
Overseas students visiting SMU

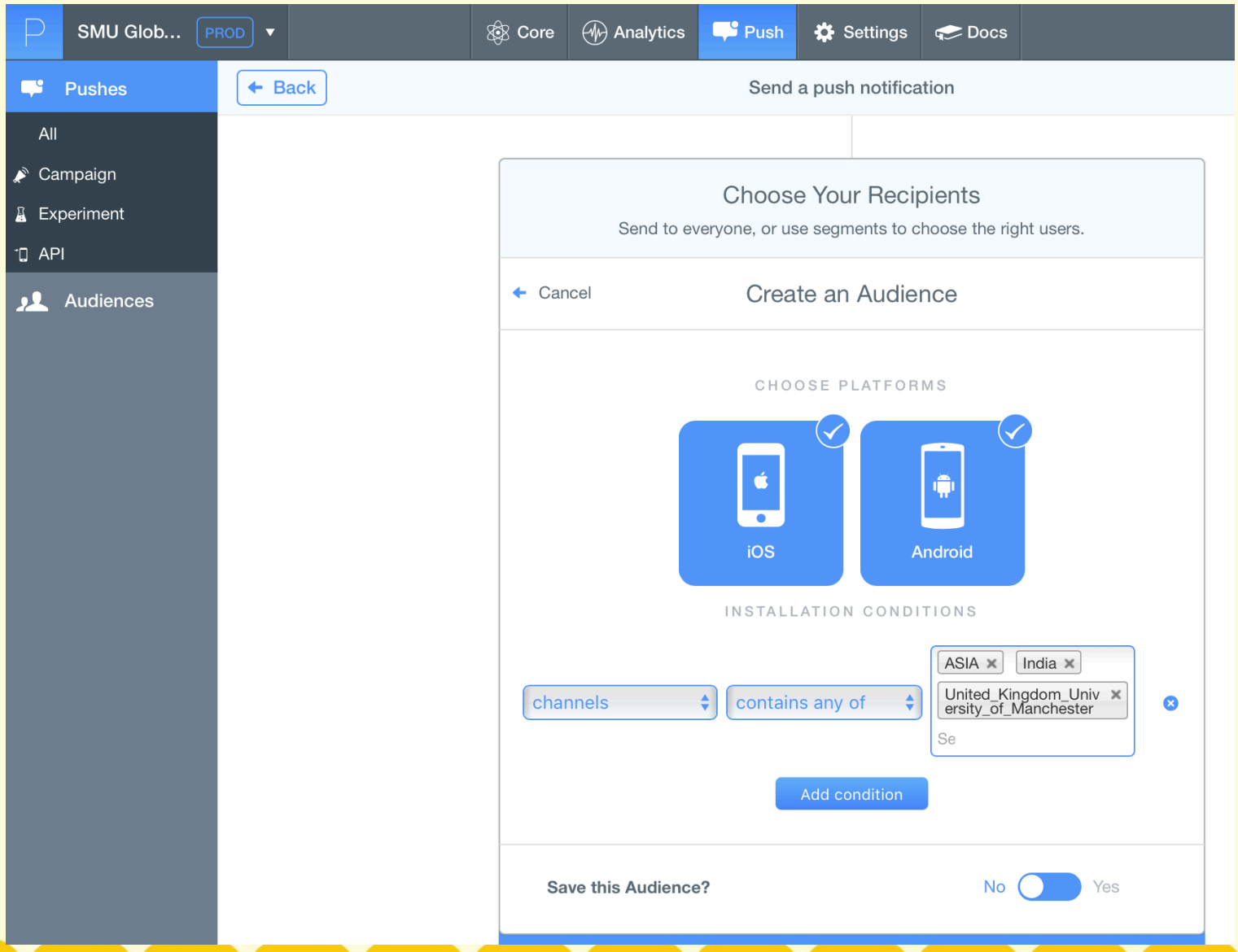
Region

Country

University



Push Notifications using Parse



Live Demo

The Future of inter-operability

Opportunities, Resources

More “Evernote-like” apps

“Save” a website offline

Other sessions

“The New Mobile Web Trinity” -callahad

Thank You!

Email us:
nextweb@smu.edu.sg

WHAT DID YOU THINK?

EVALUATE THIS SESSION

asia2016.drupal.org/schedule