

## SENDGRID INTEGRATION WITH PYTHON

Date	17 NOV 2002
Team ID	PNT2022TMID37124
Project Name	CUSTOMER CARE REGISTRY

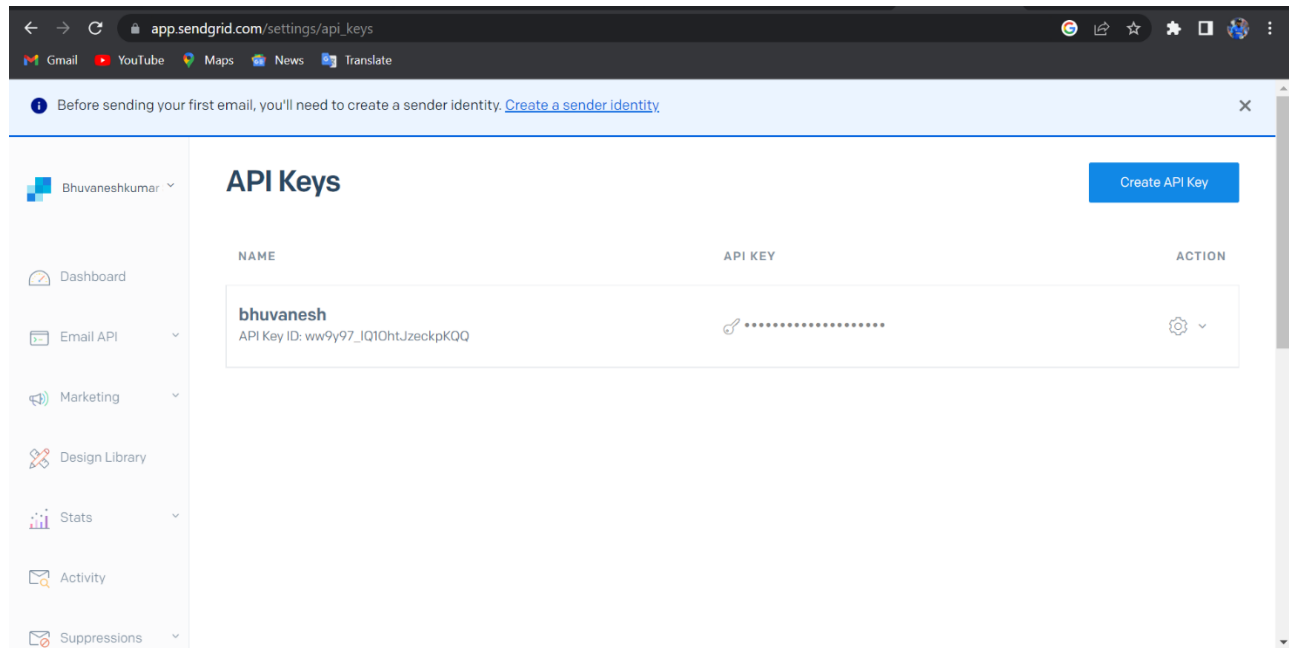
### STEP 1:

#### REQUIREMENTS:

**Python 2.6, 2.7, 3.4 or 3.5.**

### STEP 2:



Create an API key



The screenshot shows the SendGrid web interface for managing API keys. The browser address bar displays `app.sendgrid.com/settings/api_keys`. A notification banner at the top states: "Before sending your first email, you'll need to create a sender identity. [Create a sender identity](#)".

The main content area is titled "API Keys" and includes a "Create API Key" button in the top right corner. A sidebar on the left lists navigation options: Dashboard, Email API, Marketing, Design Library, Stats, Activity, and Suppressions.

The API Keys table contains one entry:

NAME	API KEY	ACTION
<b>bhuvanesh</b> API Key ID: ww9y97_IQ1OhtJzeckpKQQ	.....	 

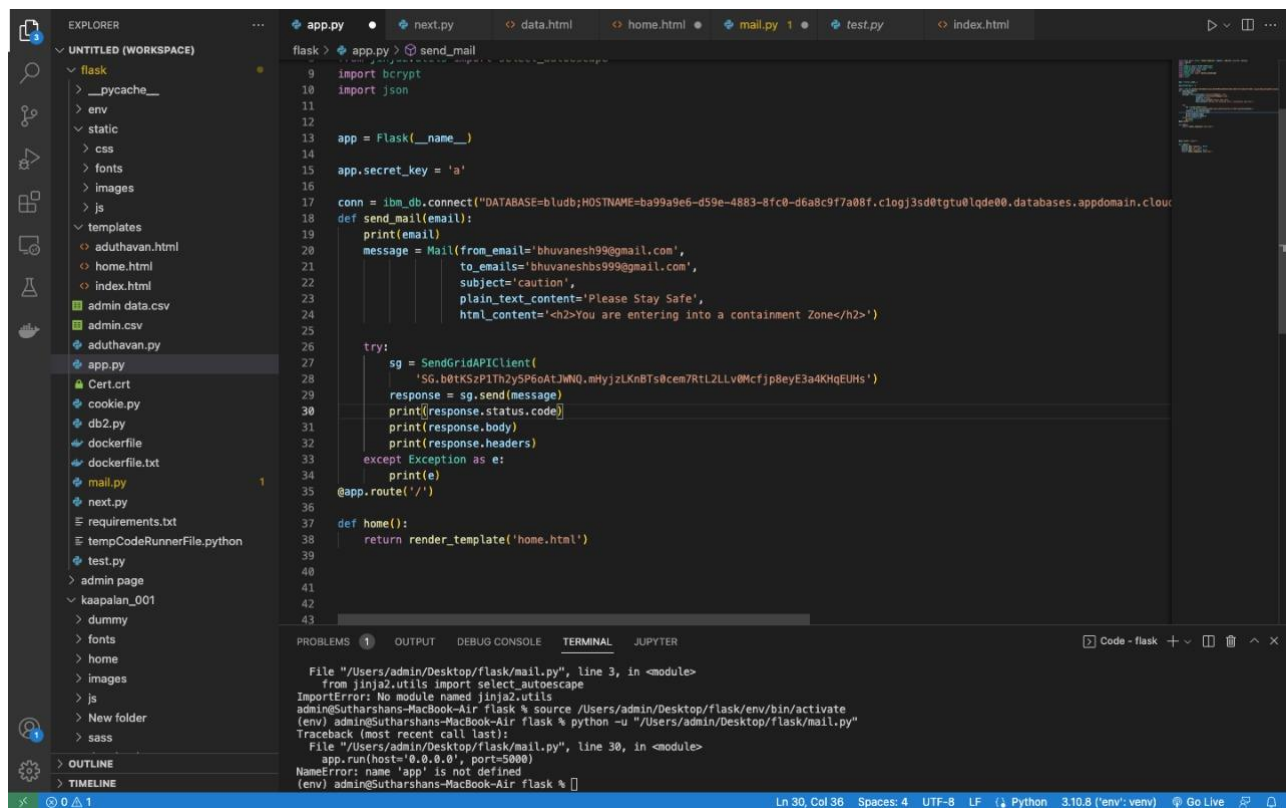
## STEP

3: INSTALL

PACKAGE: `> pip install sendgrid`

STEP 4:

## SEND EMAIL



```
flask > app.py > send_mail
9 import bcrypt
10 import json
11
12
13 app = Flask(__name__)
14
15 app.secret_key = 'a'
16
17 conn = ibm_db.connect("DATABASE=bludb;HOSTNAME=ba99a9e6-d59e-4883-8fc0-d6a8c9f7a08f.clogj3sd8tgtu0lqde00.databases.appdomain.cloud;PORT=1422;UID=ibmadmin;PWD=ibmadmin")
18
19 def send_mail(email):
20     print(email)
21     message = Mail(from_email='bhuvanesh99@gmail.com',
22                   to_emails='bhuvanesbbs99@gmail.com',
23                   subject='caution',
24                   plain_text_content='Please Stay Safe',
25                   html_content='<h2>You are entering into a containment Zone</h2>')
26
27     try:
28         sg = SendGridAPIClient(
29             'SG.b0tKSzP1Th2ySP6oAtJMNQ.mHyjzLKnbTs0cem7Rtl2LLv0Mcfjp8EY3a4KHqEUHs')
30         response = sg.send(message)
31         print(response.status_code)
32         print(response.body)
33         print(response.headers)
34     except Exception as e:
35         print(e)
36
37 @app.route('/')
38 def home():
39     return render_template('home.html')
40
41
42
43
```

PROBLEMS 1 OUTPUT DEBUG CONSOLE TERMINAL JUPYTER

```
File "/Users/admin/Desktop/flask/mail.py", line 3, in <module>
  from jinja2.utils import select_autoescape
ImportError: No module named jinja2.utils
admin@Sutharshans-MacBook-Air flask % source /Users/admin/Desktop/flask/env/bin/activate
(env) admin@Sutharshans-MacBook-Air flask % python -u "/Users/admin/Desktop/flask/mail.py"
Traceback (most recent call last):
  File "/Users/admin/Desktop/flask/mail.py", line 30, in <module>
    app.run(host='0.0.0.0', port=5000)
NameError: name 'app' is not defined
(env) admin@Sutharshans-MacBook-Air flask %
```

## SENDGRID PYTHON CODE :

```
1 import os
2 from sendgrid import SendGridAPIClient
3 from sendgrid.helpers.mail import Mail
4
5 message = Mail(
6     from_email='from_email@example.com',
7     to_emails='to@example.com',
8     subject='Sending with Twilio SendGrid is Fun',
9     html_content='<strong>and easy to do anywhere, even with
    Python</strong>')
10 try:
11     sg = SendGridAPIClient(os.environ.get('SENDGRID_API_KEY'))
12     response = sg.send(message)
13     print(response.status_code)
14     print(response.body)
15     print(response.headers)
16 except Exception as e:
17     print(e.message)
```

## HTTP CLIENT PROGRAM:

```
1 """HTTP Client library"""
2 import json
3 import logging
4 from .exceptions import handle_error
5
6 try:
7     # Python 3
8     import urllib.request as urllib
9     from urllib.parse import urlencode
10    from urllib.error import HTTPError
11 except ImportError:
12    # Python 2
```

```
13     import urllib2 as urllib
14     from urllib2 import HTTPError
15     from urllib import urlencode
16
17     _logger = logging.getLogger(__name__)
18
19
20     class Response(object):
21         """Holds the response from an API call."""
22
23         def __init__(self, response):
24             """
25             :param response: The return value from a open call
26                             on a urllib.build_opener()
27             :type response: urllib response object
28             """
29             self._status_code = response.getcode()
30             self._body = response.read()
31             self._headers = response.info()
32
33         @property
34         def status_code(self):
35             """
36             :return: integer, status code of API call
37             """
38             return self._status_code
39
40         @property
41         def body(self):
42             """
43             :return: response from the API
44             """
45             return self._body
46
47         @property
```

```

48     def headers(self):
49         """
50         :return: dict of response headers
51         """
52         return self._headers
53
54     @property
55     def to_dict(self):
56         """
57         :return: dict of response from the API
58         """
59         if self.body:
60             return json.loads(self.body.decode('utf-8'))
61         else:
62             return None
63
64
65 class Client(object):
66     """Quickly and easily access any REST or REST-like API."""
67
68     # These are the supported HTTP verbs
69     methods = {'delete', 'get', 'patch', 'post', 'put'}
70
71     def __init__(self,
72                 host,
73                 request_headers=None,
74                 version=None,
75                 url_path=None,
76                 append_slash=False,
77                 timeout=None):
78         """
79         :param host: Base URL for the api. (e.g.
80             https://api.sendgrid.com)
81         :type host: string
82         :param request_headers: A dictionary of the headers you want

```

```

82             applied on all calls
83         :type request_headers: dictionary
84         :param version: The version number of the API.
85             Subclass _build_versioned_url for custom
            behavior.
86             Or just pass the version as part of the URL
87             (e.g. client._("/v3"))
88         :type version: integer
89         :param url_path: A list of the url path segments
90         :type url_path: list of strings
91         """
92         self.host = host
93         self.request_headers = request_headers or {}
94         self._version = version
95         # _url_path keeps track of the dynamically built url
96         self._url_path = url_path or []
97         # APPEND SLASH set
98         self.append_slash = append_slash
99         self.timeout = timeout
100
101     def _build_versioned_url(self, url):
102         """Subclass this function for your own needs.
103             Or just pass the version as part of the URL
104             (e.g. client._('/v3'))
105         :param url: URI portion of the full URL being requested
106         :type url: string
107         :return: string
108         """
109         return '{}{/v{}}{}'.format(self.host, str(self._version),
            url)
110
111     def _build_url(self, query_params):
112         """Build the final URL to be passed to urllib
113
114         :param query_params: A dictionary of all the query

```

```

parameters
115         :type query_params: dictionary
116         :return: string
117         """
118         url = ''
119         count = 0
120         while count < len(self._url_path):
121             url += '/{}'.format(self._url_path[count])
122             count += 1
123
124         # add slash
125         if self.append_slash:
126             url += '/'
127
128         if query_params:
129             url_values = urlencode(sorted(query_params.items()),
130                                     True)
131
132             url = '{}?{}'.format(url, url_values)
133
134         if self._version:
135             url = self._build_versioned_url(url)
136         else:
137             url = '{}{}'.format(self.host, url)
138         return url
139
140     def _update_headers(self, request_headers):
141         """Update the headers for the request
142
143         :param request_headers: headers to set for the API call
144         :type request_headers: dictionary
145         :return: dictionary
146         """
147         self.request_headers.update(request_headers)
148
149     def _build_client(self, name=None):

```

```

148         """Make a new Client object
149
150         :param name: Name of the url segment
151         :type name: string
152         :return: A Client object
153         """
154         url_path = self._url_path + [name] if name else
            self._url_path
155         return Client(host=self.host,
156                       version=self._version,
157                       request_headers=self.request_headers,
158                       url_path=url_path,
159                       append_slash=self.append_slash,
160                       timeout=self.timeout)
161
162     def _make_request(self, opener, request, timeout=None):
163         """Make the API call and return the response. This is
            separated into
164             it's own function, so we can mock it easily for testing.
165
166         :param opener:
167         :type opener:
168         :param request: url payload to request
169         :type request: urllib.Request object
170         :param timeout: timeout value or None
171         :type timeout: float
172         :return: urllib response
173         """
174         timeout = timeout or self.timeout
175         try:
176             return opener.open(request, timeout=timeout)
177         except HTTPError as err:
178             exc = handle_error(err)
179             exc.__cause__ = None
180             _logger.debug('{method} Response: {status}

```



```

        {body}'.format(
181             method=request.get_method(),
182             status=exc.status_code,
183             body=exc.body))
184         raise exc
185
186     def _(self, name):
187         """Add variable values to the url.
188         (e.g. /your/api/{variable_value}/call)
189         Another example: if you have a Python reserved word,
        such as global,
190         in your url, you must use this method.
191
192         :param name: Name of the url segment
193         :type name: string
194         :return: Client object
195         """
196         return self._build_client(name)
197
198     def __getattr__(self, name):
199         """Dynamically add method calls to the url, then call a
        method.
200         (e.g. client.name.name.method())
201         You can also add a version number by using
        .version(<int>)
202
203         :param name: Name of the url segment or method call
204         :type name: string or integer if name == version
205         :return: mixed
206         """
207         if name == 'version':
208             def get_version(*args, **kwargs):
209                 """
210                 :param args: dict of settings
211                 :param kwargs: unused

```

```

212         :return: string, version
213         """
214         self._version = args[0]
215         return self._build_client()
216     return get_version
217
218     # We have reached the end of the method chain, make the API
    call
219     if name in self.methods:
220         method = name.upper()
221
222         def http_request(
223             request_body=None,
224             query_params=None,
225             request_headers=None,
226             timeout=None,
227             **_):
228             """Make the API call
229             :param timeout: HTTP request timeout. Will be
    propagated to
230             urllib client
231             :type timeout: float
232             :param request_headers: HTTP headers. Will be
    merged into
233             current client object state
234             :type request_headers: dict
235             :param query_params: HTTP query parameters
236             :type query_params: dict
237             :param request_body: HTTP request body
238             :type request_body: string or json-serializable
    object
239             :param kwargs:
240             :return: Response object
241             """
242             if request_headers:

```

```

243         self._update_headers(request_headers)
244
245         if request_body is None:
246             data = None
247         else:
248             # Don't serialize to a JSON formatted str
249             # if we don't have a JSON Content-Type
250             if 'Content-Type' in self.request_headers and \
251                 self.request_headers['Content-Type'] != \
252                 'application/json':
253                 data = request_body.encode('utf-8')
254             else:
255                 self.request_headers.setdefault(
256                     'Content-Type', 'application/json')
257                 data =
                json.dumps(request_body).encode('utf-8')
258
259         opener = urllib.build_opener()
260         request = urllib.Request(
261             self._build_url(query_params),
262             headers=self.request_headers,
263             data=data,
264         )
265         request.get_method = lambda: method
266
267         _logger.debug('{method} Request: {url}'.format(
268             method=method,
269             url=request.get_full_url()))
270         if request.data:
271             _logger.debug('PAYLOAD: {data}'.format(
272                 data=request.data))
273         _logger.debug('HEADERS: {headers}'.format(
274             headers=request.headers))
275

```

```
276         response = Response(
277             self.make_request(opener, request,
278                 timeout=timeout)
279         )
280         _logger.debug('{method} Response: {status}
281             {body}'.format(
282                 method=method,
283                 status=response.status_code,
284                 body=response.body))
285         return response
286
287         return http_request
288     else:
289         # Add a segment to the URL
290         return self. (name)
291
292     def __getstate__(self):
293         return self.__dict__
294
295     def setstate (self, state):
```