

SENDGRID INTEGRATION WITH PYTHON

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TEAM ID: PNT2022TMID28009

PROJECT NAME: CUSTOMER CARE REGISTRY

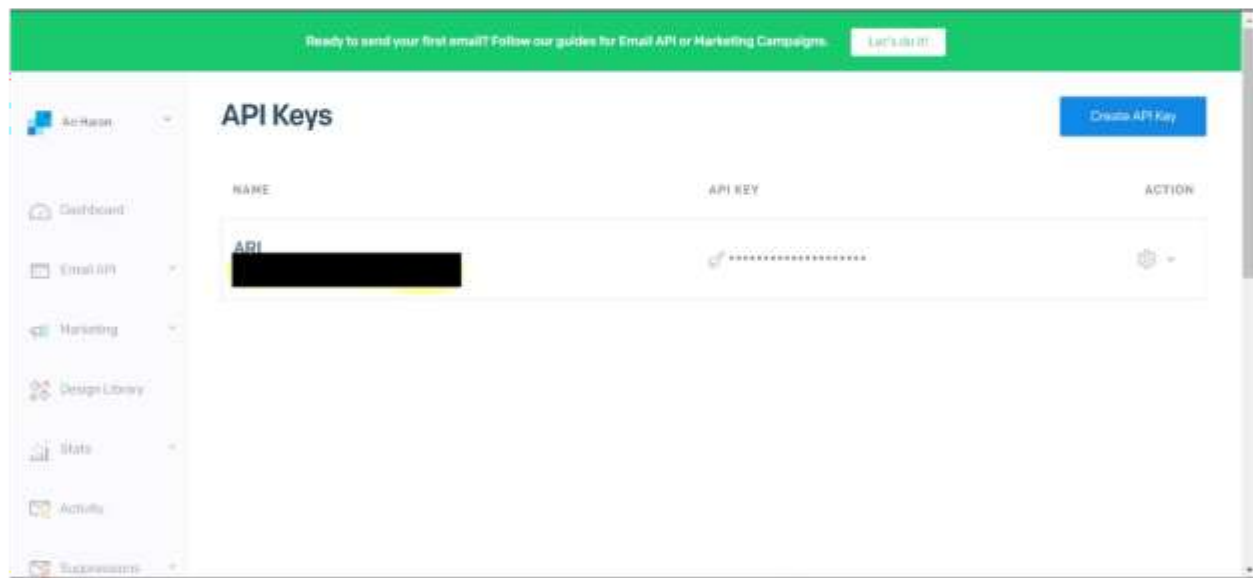
STEP 1:

REQUIREMENTS:

Python 2.6, 2.7, 3.4 or 3.5.

STEP 2:

Create an API key



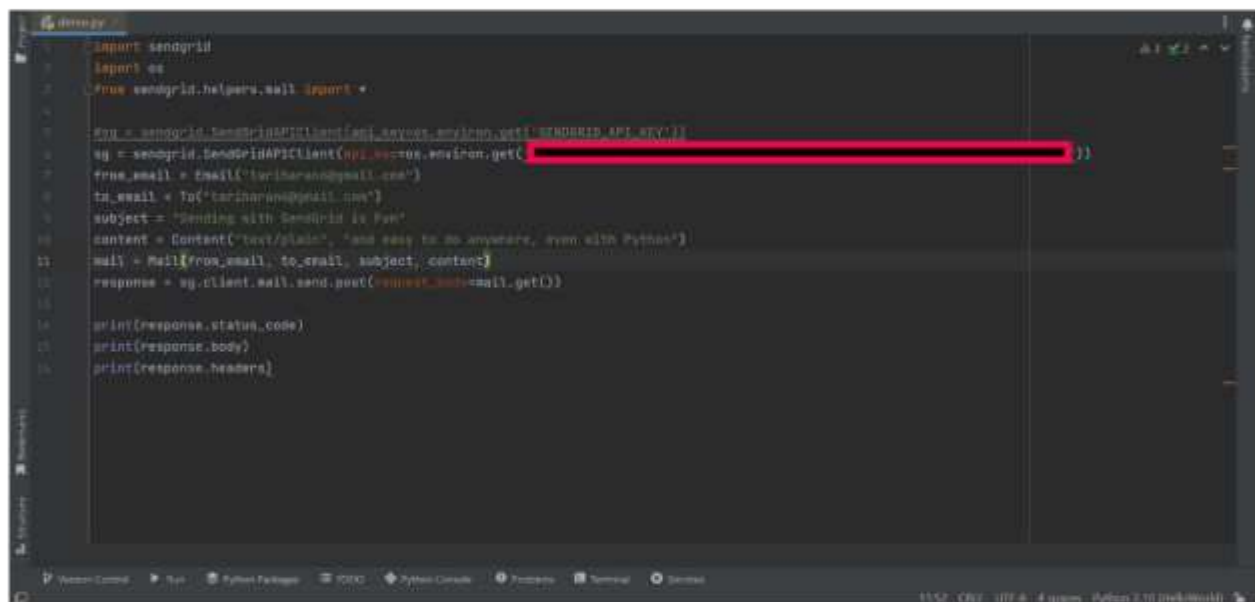
STEP 3:

INSTALL PACKAGE:

> pip install sendgrid

STEP 4:

SEND EMAIL



```
1 import sendgrid
2 import os
3 from sendgrid.helpers.mail import *
4
5 sg = sendgrid.SendGridAPIClient(api_key=os.environ.get('SENDGRID_API_KEY'))
6 sg = sendgrid.SendGridAPIClient(api_key=os.environ.get('SENDGRID_API_KEY'))
7 from_email = Email('tcarinar@sendgrid.com')
8 to_email = To('tcarinar@sendgrid.com')
9 subject = 'Sending with SendGrid is Fun'
10 content = Content('text/plain', 'and easy to do anywhere, even with Python')
11 mail = Mail(from_email, to_email, subject, content)
12 response = sg.client.mail.send.post(request_body=mail.get())
13
14 print(response.status_code)
15 print(response.body)
16 print(response.headers)
```

The screenshot shows a code editor with a dark theme. The code is written in Python and uses the SendGrid library to send an email. The code is numbered 1 through 16. A red horizontal bar highlights the line `sg = sendgrid.SendGridAPIClient(api_key=os.environ.get('SENDGRID_API_KEY'))` on line 6. The editor has a sidebar on the left with icons for Explorer, Search, and Run and Debug. The bottom status bar shows the file path `11.52 - C:\... - 4 lines - Python 3.10 (env:local)`.

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
```


16

17 _logger =

18

19

22

32

34 def

35 """

37 """

41 def

42 """

44 """

46

13 import urllib2 as urllib

14 from urllib2 import HTTPError

15 from urllib import urlencode

logging.getLogger(_name_)

20 class Response(object):

21 """Holds the response from an API call."""

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()

33 @property

status_code(self):

36 :return: integer, status code of API call

38 return self._status_code 39

40 @property

body(self):

43 :return: response from the API

45 return self._body


```

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. https://api.sendgrid.com)
80     :type host: string
81     :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         , url): your
102         wn needs. art
103         def _build_versioned_url(self, url)
104         f the URL
105         """Subclass this function for
106         full URL being requested
107         Or just pass the version as p
108         (e.g. client._('/v3'))
109         :param url: URI portion of th
110         :type url: string
111         st, str(self._version), url)
112         :return: string
113         """
114         ): d to
115         return '{}{}/{}'.format(self.h urllib
116
117 def _build_url(self, query_param
118 """Build the final URL to be passe

```

:param query_params: A dictionary of all


```

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()), True)
130         url = '{}?{}'.format(url, url_values)
131
132     if self._version:
133         url = self._build_versioned_url(url)
134     else:
135         url = '{}{}'.format(self.host, url)
136     return url
137
138     def _update_headers(self, request_headers):
139         """Update the headers for the request 140
141         :param request_headers: headers to set for the API call
142         :type request_headers: dictionary
143         :return: dictionary
144         """
145         self.request_headers.update(request_headers)
146
147     def _build_client(self, name=None):

```






```

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

```



```

        {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
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
213         :return: string, version
214         """
215         self._version = args[0] return
216         self._build_client() return
217         get_version
218
219     # We have reached the end of the method chain, make the API call
220     if name in self.methods:
221         method = name.upper()
222
223         def http_request(
224             request_body=None,
225             query_params=None,
226             request_headers=None,
227             timeout=None, **_):
228             """Make the API call
229             :param timeout: HTTP request timeout. Will be propagated to urllib
230             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 :param
239             kwargs:
240             :return: Response object
241             """ if
242             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, timeout=timeout)
278     )
279
280     _logger.debug('{method} Response: {status} {body}'.format(
281         method=method,
282         status=response.status_code,
283         body=response.body))
284
285     return response
286
287     return http_request
288
289     else:
290         # Add a segment to the URL
291         return self._(name)
292
293     def __getstate__(self):
294         return self.__dict__
295
296     def __setstate__(self, state):

```