

## SENDGRID INTEGRATION WITH PYTHON

|              |                                 |
|--------------|---------------------------------|
| Date         | 15 NOV 2022                     |
| Team ID      | PNT2022TMID51683                |
| Project Name | NUTRITION ASSISTANT APPLICATION |

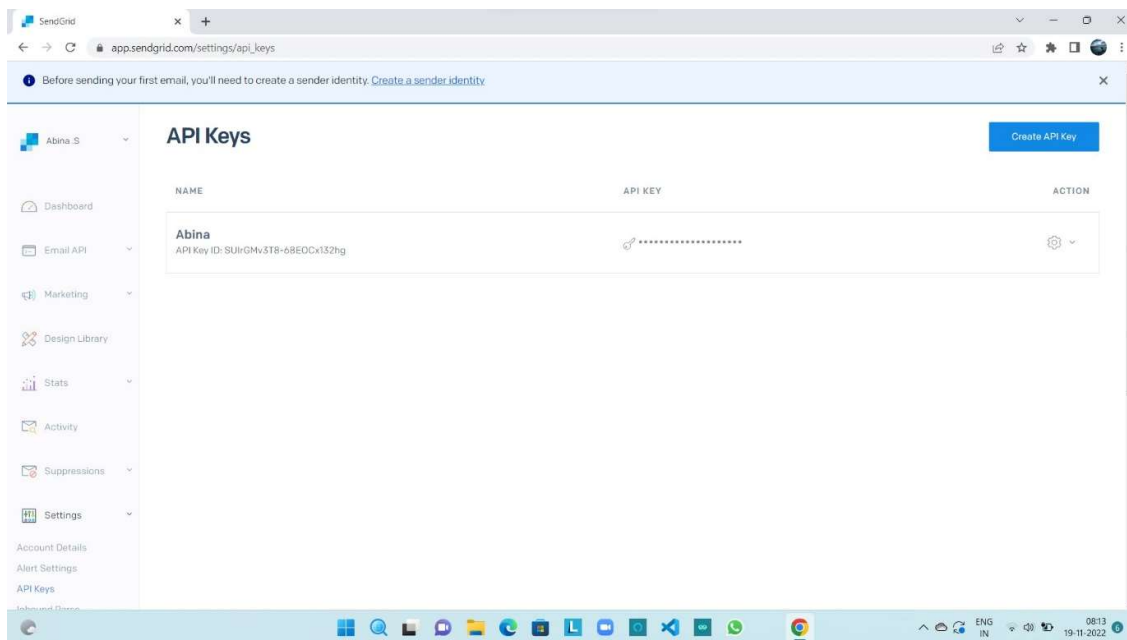
### STEP 1:

#### REQUIREMENTS:

Python 2.6,2.7,3.4 or 3.5.

### STEP 2:

#### CREATE AN API KEY:



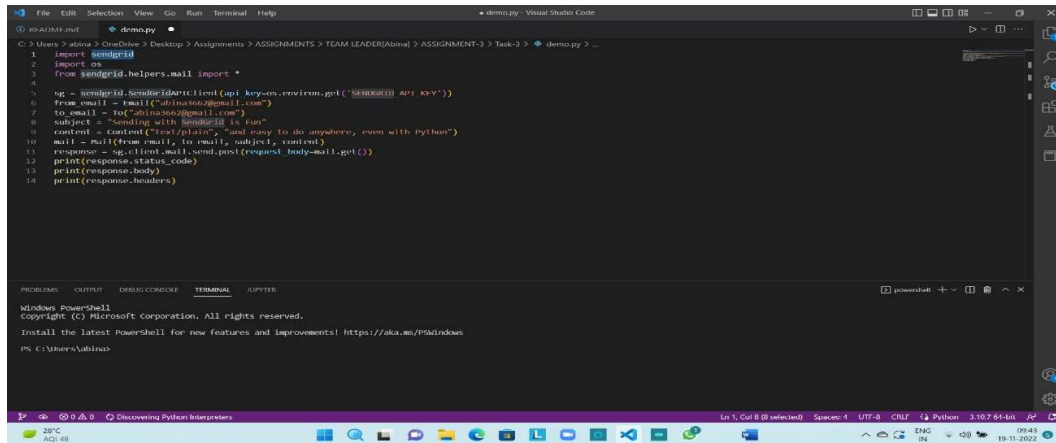
### STEP 3:

Install

PACKAGE:> pip install sendgrid

## STEP 4:

### SEND EMAIL



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

## 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
```

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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

```

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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         :param query_params: A dictionary of all the query
parameters
114
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):

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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}

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{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,
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     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):

```