DATE:	10 NOV 2022
TEAM ID:	PNT2022TMID42344
PROJECT NAME:	CUSTOMER CARE REGISTRY

STEP 1:

REQUIREMENTS:

Python 2.6, 2.7, 3.4 or 3.5.

STEP 2:

Create an API key

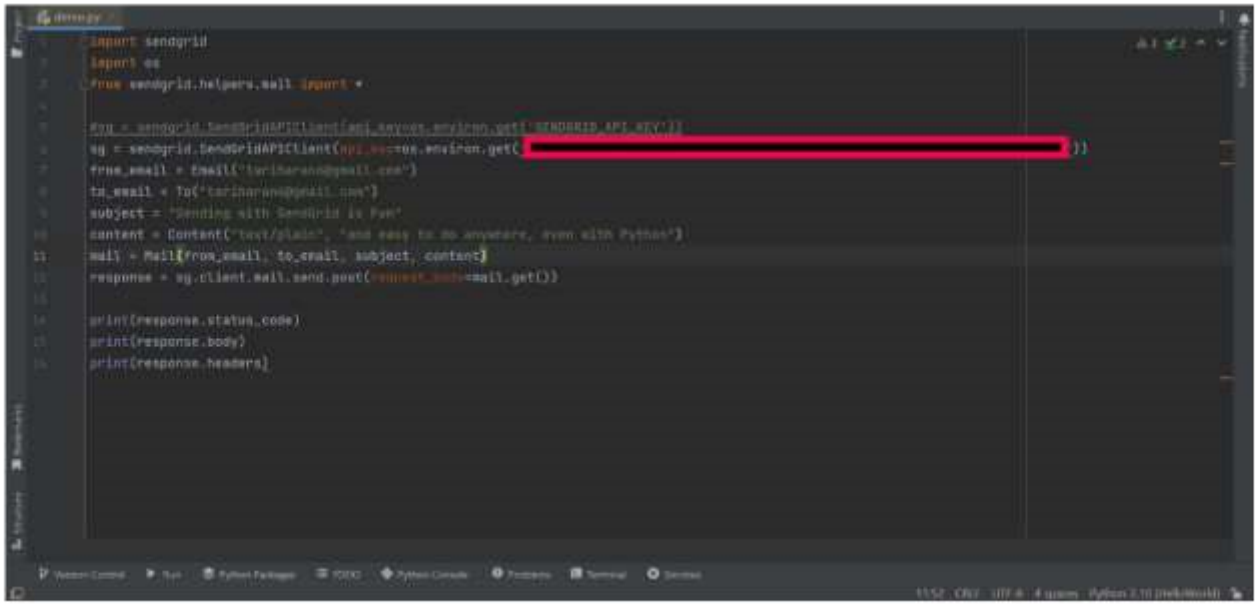
STEP 3:

INSTALL PAKAGE:

> pip install sendgrid

SETP 4:

SEND EMAIL



SENDGRID PYTHON CODE :

```
import os
from sendgrid import SendGridAPIClient 3 from sendgrid.helpers.mail import Mail

message = Mail(
from_email='from_email@example.com',
to_emails='to@example.com',
subject='Sending with Twilio SendGrid is Fun',
html_content='<strong>and easy to do anywhere, even with  Python</strong>')
try:
sg = SendGridAPIClient(os.environ.get('SENDGRID_API_KEY'))
response = sg.send(message) 13    print(response.status_code)
print(response.body)
print(response.headers)  16            except Exception as e:
  print(e.message)
```

HTTP CLIENT PROGRAM:

```
"""HTTP Client library"""
import json

import logging

from .exceptions import handle_error


    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
        def status_code(self):
  34    """
  35

        """
  37

  38    return self._status_code  39
40        @property
        def body(self):
41      """
42

        """
44

45        return self._body

46
```

```
47  @property
```

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

```
        applied on all calls
        :type request_headers: dictionary
        :param version: The version number of the API.
        Subclass _build_versioned_url for custom behavior.
        Or just pass the version as part of the URL
        (e.g. client._("/v3"))
        :type version: integer
        :param url_path: A list of the url path segments
        :type url_path: list of strings
        """
        self.host = host
        self.request_headers = request_headers or {}
        self._version = version
        # _url_path keeps track of the dynamically built url
        self._url_path = url_path or []
        # APPEND SLASH set
        self.append_slash = append_slash
        self.timeout = timeout

    def _build_versioned_url(self, url):
        """Subclass this function for your own needs.
        Or just pass the version as part of the URL
        (e.g. client._('/v3'))
        :param url: URI portion of the full URL being requested
        :type url: string
        :return: string
        """
        return '{}/v{}{}'.format(self.host, str(self._version), url)

    def _build_url(self, query_params):
        """Build the final URL to be passed to urllib
```

```
: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 [redacted]
146
147   def _build_client(self,       name=None):
```

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

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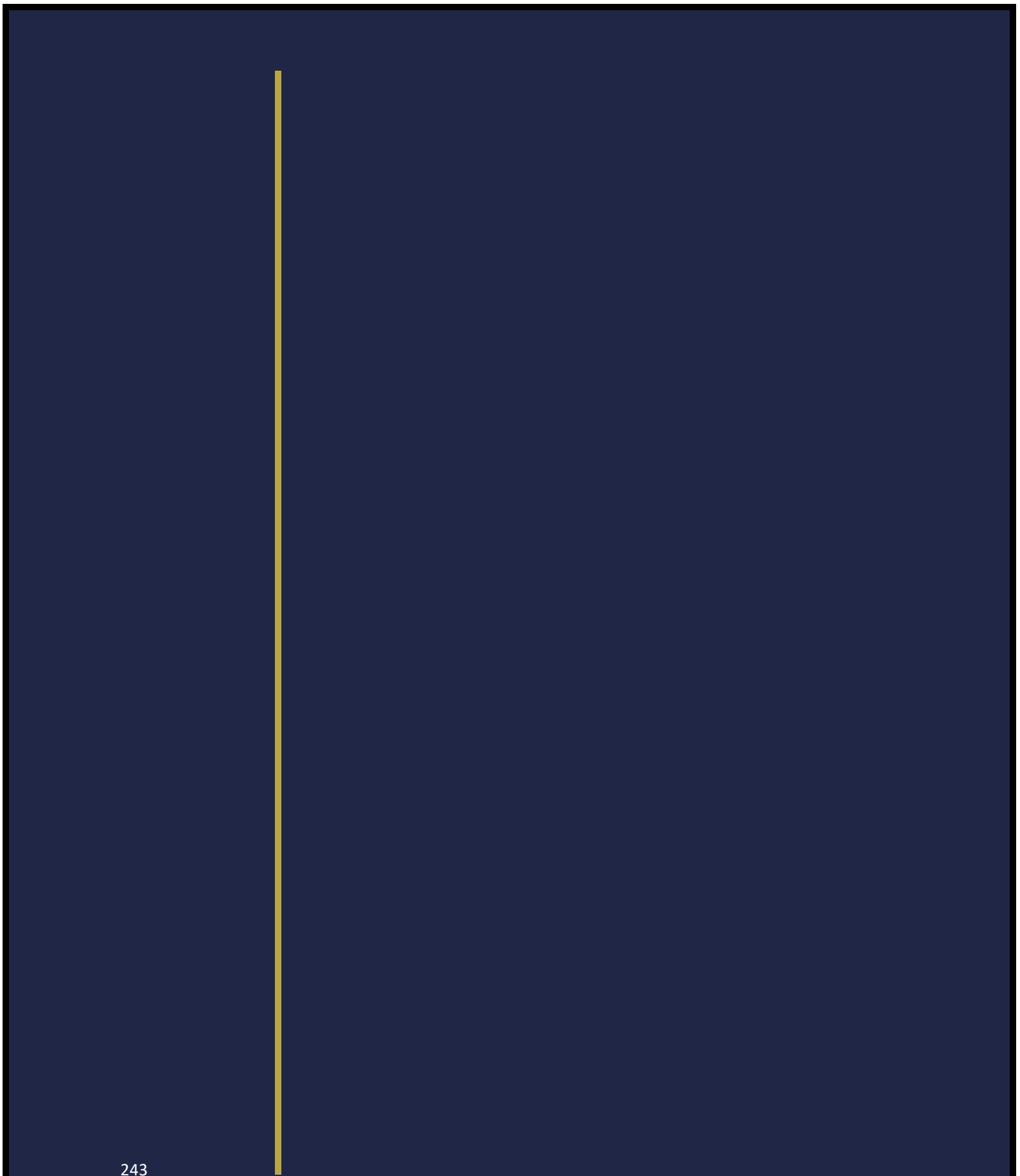
```
        :return: string, version
        """
        self._version = args[0]  return
        self._build_client()      return
        get_version

    # We have reached the end of the method chain, make the API call
    if name in self.methods:   method = name.upper()

            def          http_request(
            request_body=None,
            query_params=None,
            request_headers=None,
            timeout=None,  **_):
            """Make the API call
            :param timeout: HTTP request timeout. Will be propagated to  urllib client
            :type timeout: float
            :param request_headers: HTTP headers. Will be merged into  current
            client object state
            :type request_headers: dict
            :param query_params: HTTP query parameters
            :type query_params: dict
            :param request_body: HTTP request body
            :type request_body: string or json-serializable object  :param kwargs:
            :return: Response object
            """  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
```

```
                                        response = Response(
                                        self._make_request(opener, request, timeout=timeout)
                    )


                                        _logger.debug('{method} Response: {status} {body}'.format(
                                        method=method,
                                        status=response.status_code,
                                        body=response.body))

        return response                 return

                    http_request
                      else:
            # Add a segment to the URL
            return self._(name)
    def __getstate__(self):
    return self.__dict__
def __setstate__(self, state):
```