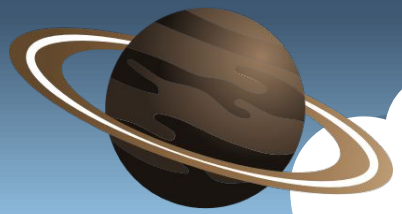
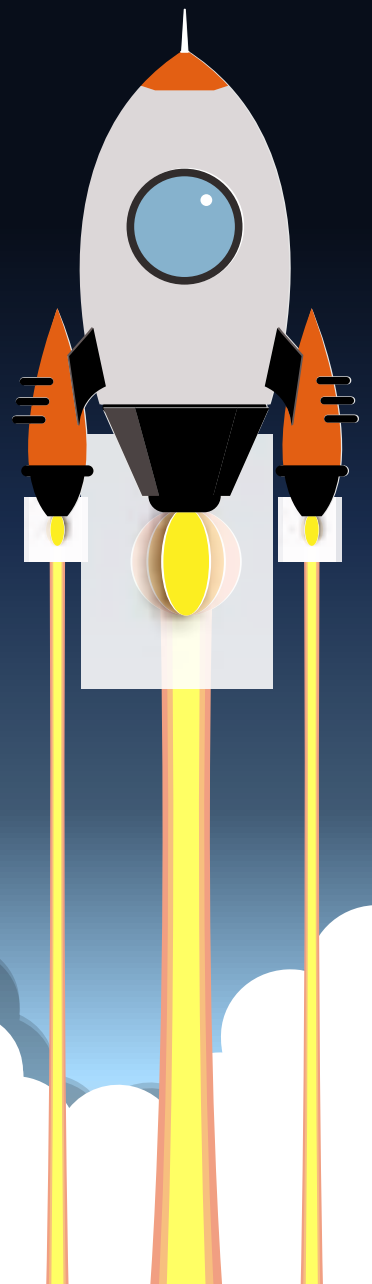
NASA

MIDTERM PROJECT





สมาชิก

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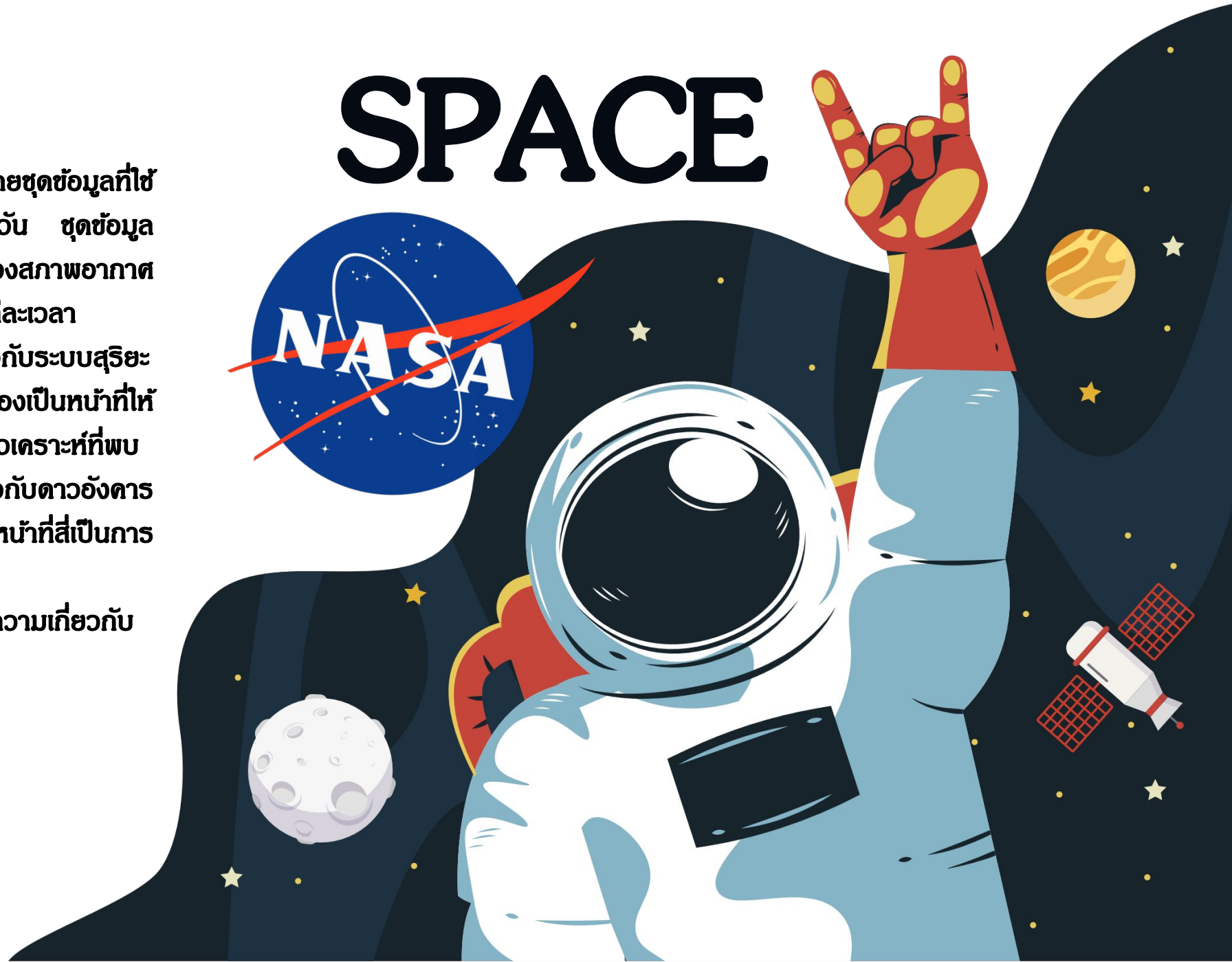
SPACE

เว็บของเราใช้ข้อมูล API ของ NASA โดยชุดข้อมูลที่ใช้จะประกอบไปด้วย ชุดข้อมูลภาพถ่ายประจำวัน ชุดข้อมูลดาวเคราะห์ที่พบเจอในแต่ละวัน ชุดข้อมูลของสภาพอากาศดาวอังคาร และภาพถ่ายของโลกในแต่ละวันแต่ละเวลา

โดยหน้าแรกใช้เป็นการแสดงข้อมูลเกี่ยวกับระบบสุริยะและมีการแสดงภาพถ่ายประจำวัน หน้าที่สองเป็นหน้าที่ให้ความรู้เกี่ยวกับดาวเคราะห์และแสดงข้อมูลดาวเคราะห์ที่พบเจอในแต่ละวัน หน้าที่สามเป็นหน้าข้อมูลเกี่ยวกับดาวอังคารมีการแสดงสภาพอากาศของดาวอังคาร หน้าที่สี่เป็นการแสดงภาพของโลกในแต่ละวันและ

ผู้ใช้สามารถค้นหาตามวันที่ได้และมีบทความเกี่ยวกับพระจันทร์ประกอบอยู่



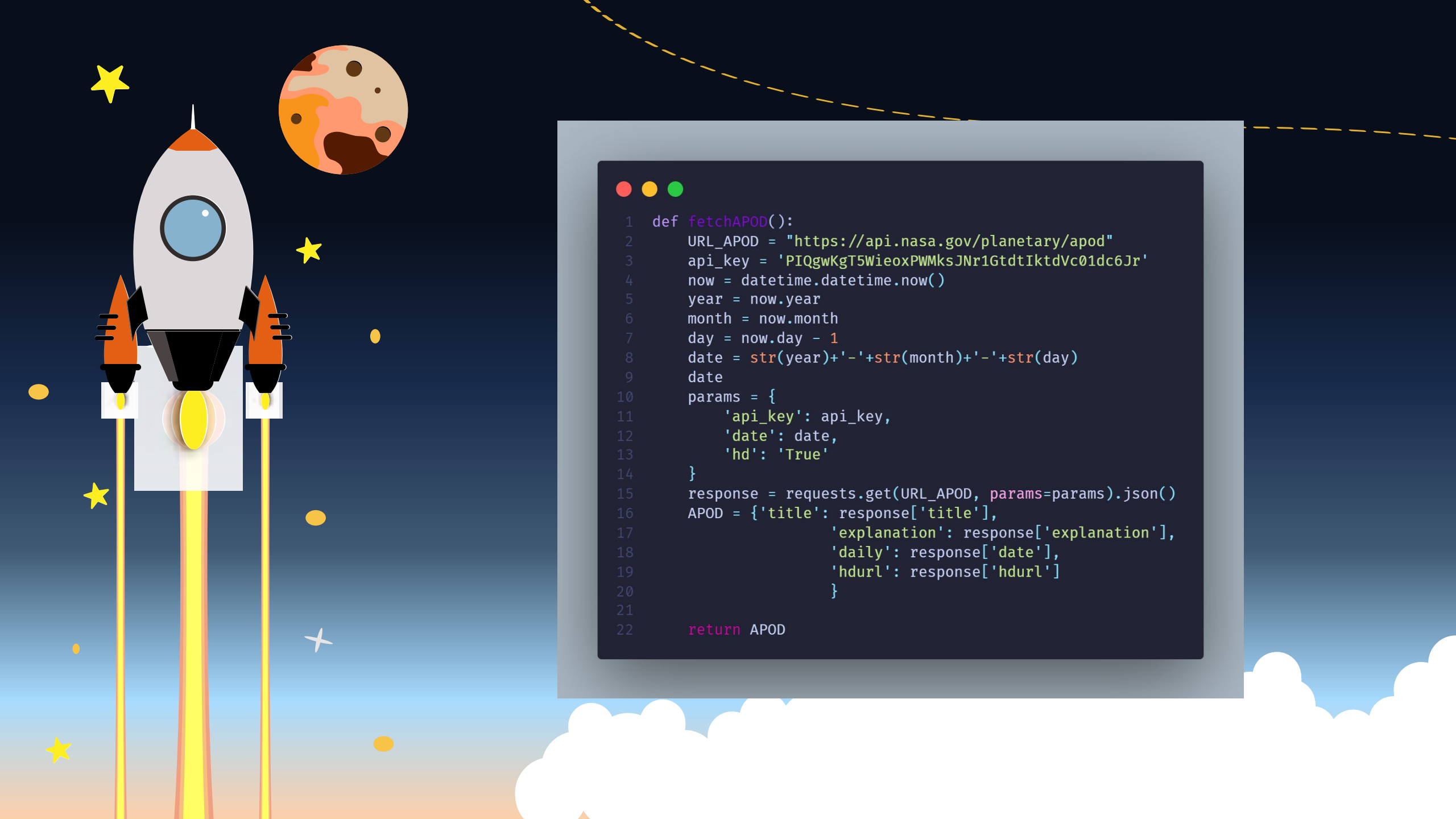
FRONT-END : HTML CSS JAVASCRIPT

BACK-END : FLASK


1

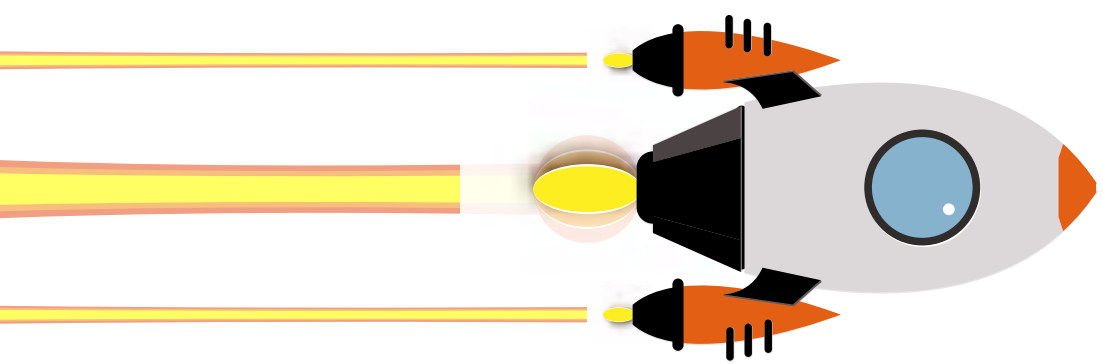
API：https://api.nasa.gov/planetary/apod

{'copyright': 'Chuck Ayoub',
'date': '2018-11-14',
'explanation': "What's inside this cosmic cave? A stellar nursery 10 "
'light-years deep. The featured skyscape is dominated by '
'dusty Sh2-155, the Cave Nebula. In the telescopic image, data '
'taken through a narrowband filters tracks the nebular glow of '
'hydrogen, oxygen, and sulfur, colors that together form the '
'Hubble Palette. About 2,400 light-years away, the scene lies '
'along the plane of our Milky Way Galaxy toward the royal '
'northern constellation of Cepheus. Astronomical explorations '
'of the region reveal that it has formed at the boundary of '
'the massive Cepheus B molecular cloud and the hot, young '
'stars of the Cepheus OB 3 association. The bright rim of '
'ionized hydrogen gas is energized by radiation from the hot '
'stars, dominated by the bright star just to the left of the '
'cave entrance. Radiation driven ionization fronts are likely '
'triggering collapsing cores and new star formation within.',
'hdurl': 'https://apod.nasa.gov/apod/image/1811/CaveNebula_Ayoub_2469.jpg',
'media_type': 'image',
'service_version': 'v1',
'title': 'The Cave Nebula in Hydrogen, Oxygen, and Sulfur',
'url': 'https://apod.nasa.gov/apod/image/1811/CaveNebula_Ayoub_960.jpg'}



```python
def fetchAPOD():
    URL_APOD = "https://api.nasa.gov/planetary/apod"
    api_key = 'PIQgwKgT5WieoxPWMksJNr1GtdtIktdVc01dc6Jr'
    now = datetime.datetime.now()
    year = now.year
    month = now.month
    day = now.day - 1
    date = str(year)+'-'+str(month)+'-'+str(day)
    date
    params = {
        'api_key': api_key,
        'date': date,
        'hd': 'True'
    }
    response = requests.get(URL_APOD, params=params).json()
    APOD = {'title': response['title'],
                    'explanation': response['explanation'],
                    'daily': response['date'],
                    'hdurl': response['hdurl']
                    }

    return APOD
```


2



API:https://api.nasa.gov/neo/rest/v1/feed


```
[{'absolute_magnitude_h': 19.7,
  'close_approach_data': [{'close_approach_date': '2021-03-09',
    'close_approach_date_full': '2021-Mar-09 13:49',
    'epoch_date_close_approach': 1615297740000,
    'miss_distance': {'astronomical': '0.1716840417',
     'kilometers': '25683566.951311179',
     'lunar': '66.7850922213',
     'miles': '15959028.4735611102'},
    'orbiting_body': 'Earth',
    'relative_velocity': {'kilometers_per_hour': '72146.4174182538',
     'kilometers_per_second': '20.0406715051',
     'miles_per_hour': '44828.9780896922'}}],
  'estimated_diameter': {'feet': {'estimated_diameter_max': 2238.8501681036,
    'estimated_diameter_min': 1001.2442334633},
   'kilometers': {'estimated_diameter_max': 0.6824015094,
    'estimated_diameter_min': 0.3051792326},
   'meters': {'estimated_diameter_max': 682.4015094011,
    'estimated_diameter_min': 305.1792325939},
   'miles': {'estimated_diameter_max': 0.4240245083,
    'estimated_diameter_min': 0.1896295249}},
  'id': '2523637',
  'is_potentially_hazardous_asteroid': False,
  'is_sentry_object': False,
  'links': {'self': 'http://www.neowsapp.com/rest/v1/neo/2523637?api_key=PIQgwKgT5WieoxPWMksJNr1GtdtIktdVc01dc6Jr'},
  'name': '523637 (2010 LT108)',
  'nasa_jpl_url': 'http://ssd.jpl.nasa.gov/sbdb.cgi?sstr=2523637',
  'neo_reference_id': '2523637'},
```

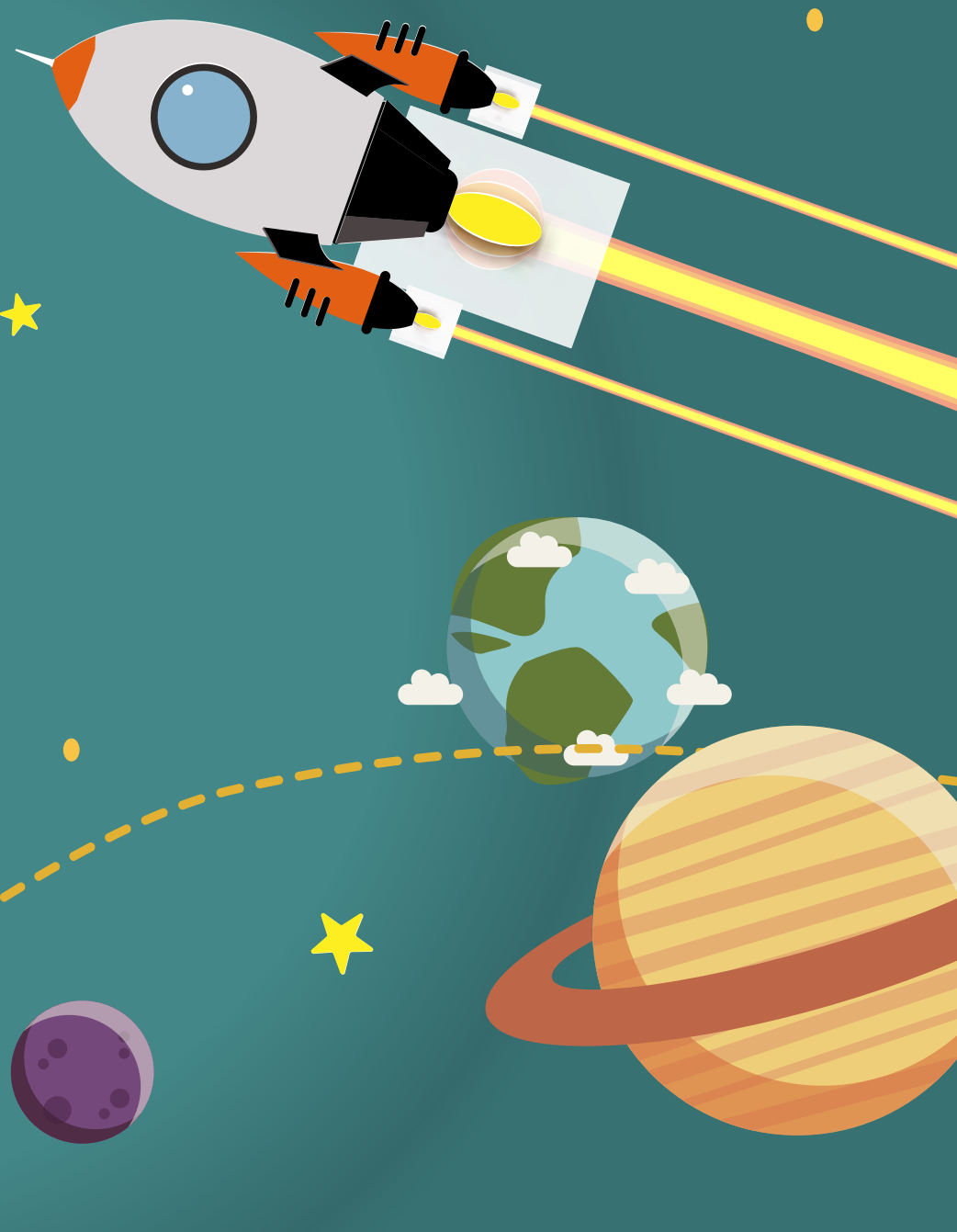

def fetchAsteroidNeowsFeed():
URL_NeoFeed = "https://api.nasa.gov/neo/rest/v1/feed"
api_key = '7UbkT3dVXEXJHRbZ7VV0J2eJ6aXMK7XGAgXba2UH'
params = {
'api_key': api_key,
'start_date': '2021-03-09'
}
response = requests.get(URL_NeoFeed, params=params).json()
NEO = response['near_earth_objects']['2021-03-09']
ID = []
name = []
link = []
for i in range(1,13):
myNeoFeed = NEO[i]
ID.append(myNeoFeed['id'])
name.append(myNeoFeed['name'])
link.append(myNeoFeed['nasa_jpl_url'])
myFeed = zip(ID,name,link)
return myFeed

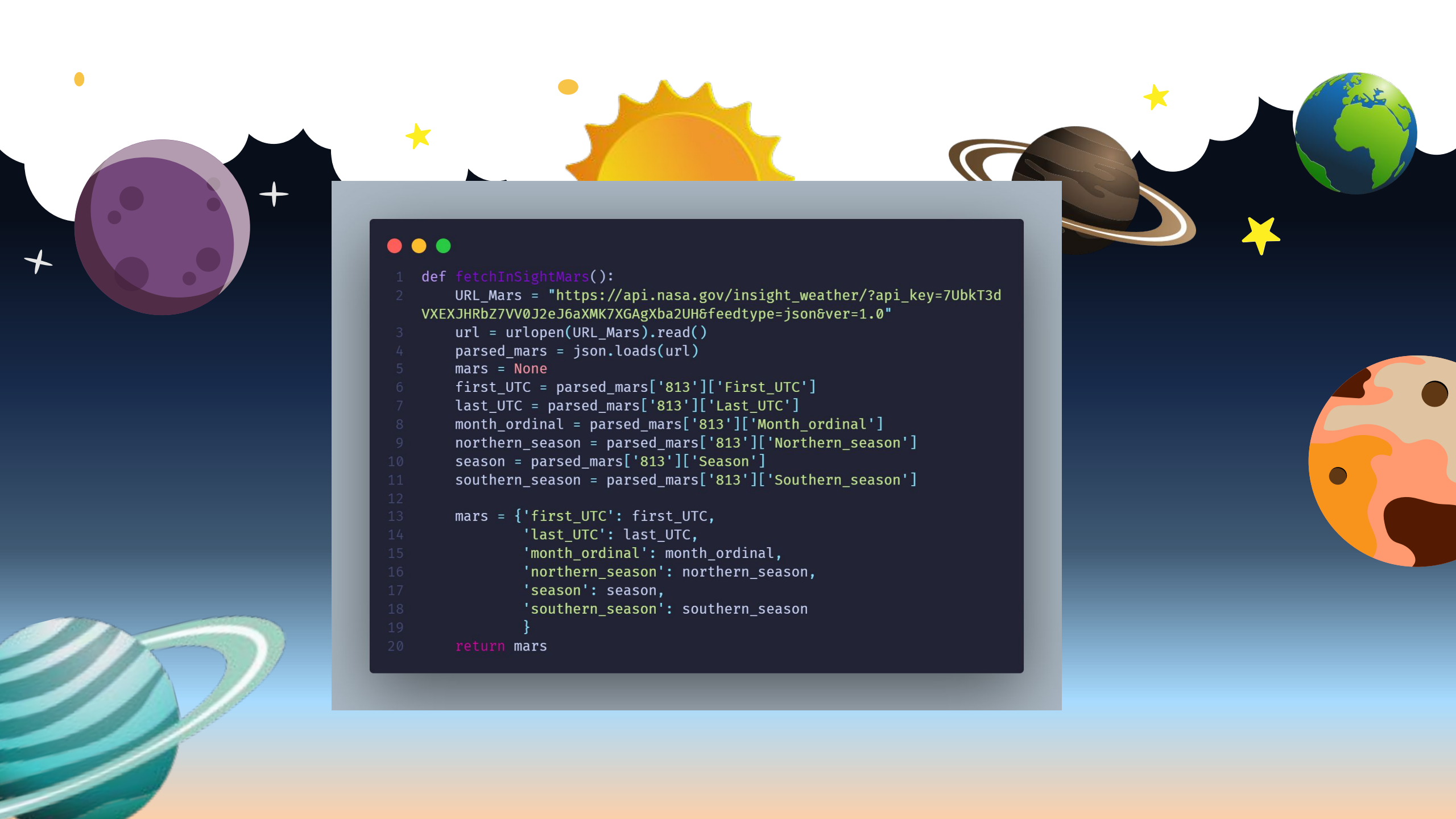

3

API：https://api.nasa.gov/insight_weather/

?api_key=DEMO_KEY&feedtype=json&ver=1.0


```
{
  "813": {
    "First_UTC": "2021-03-10T13:35:28Z",
    "Last_UTC": "2021-03-11T14:14:59Z",
    "Month_ordinal": 12,
    "Northern_season": "late winter",
    "PRE": {
      "av": 727.909,
      "ct": 100620,
      "mn": 706.2391,
      "mx": 743.8608
    },
    "Season": "winter",
    "Southern_season": "late summer",
    "WD": {
      "most_common": null
    }
  },
```

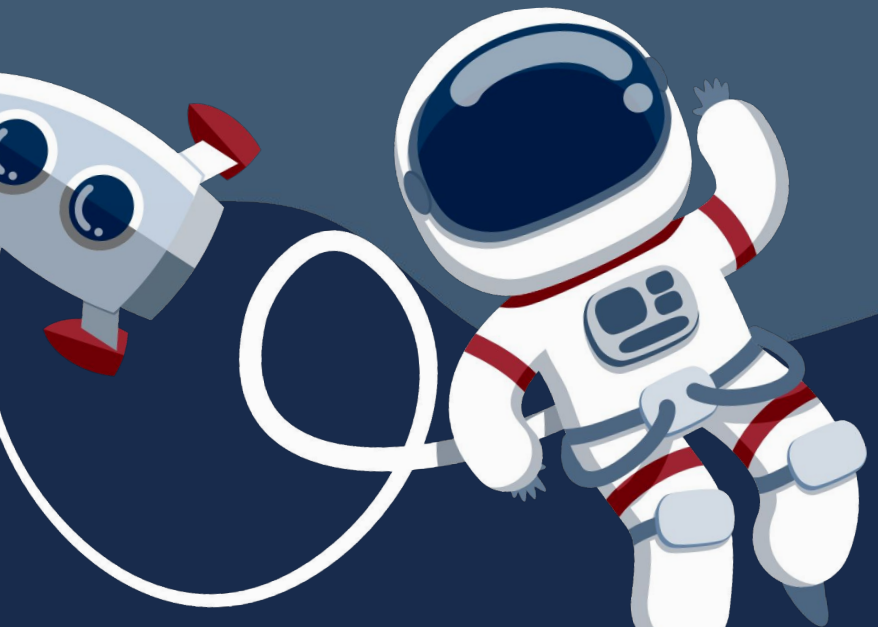





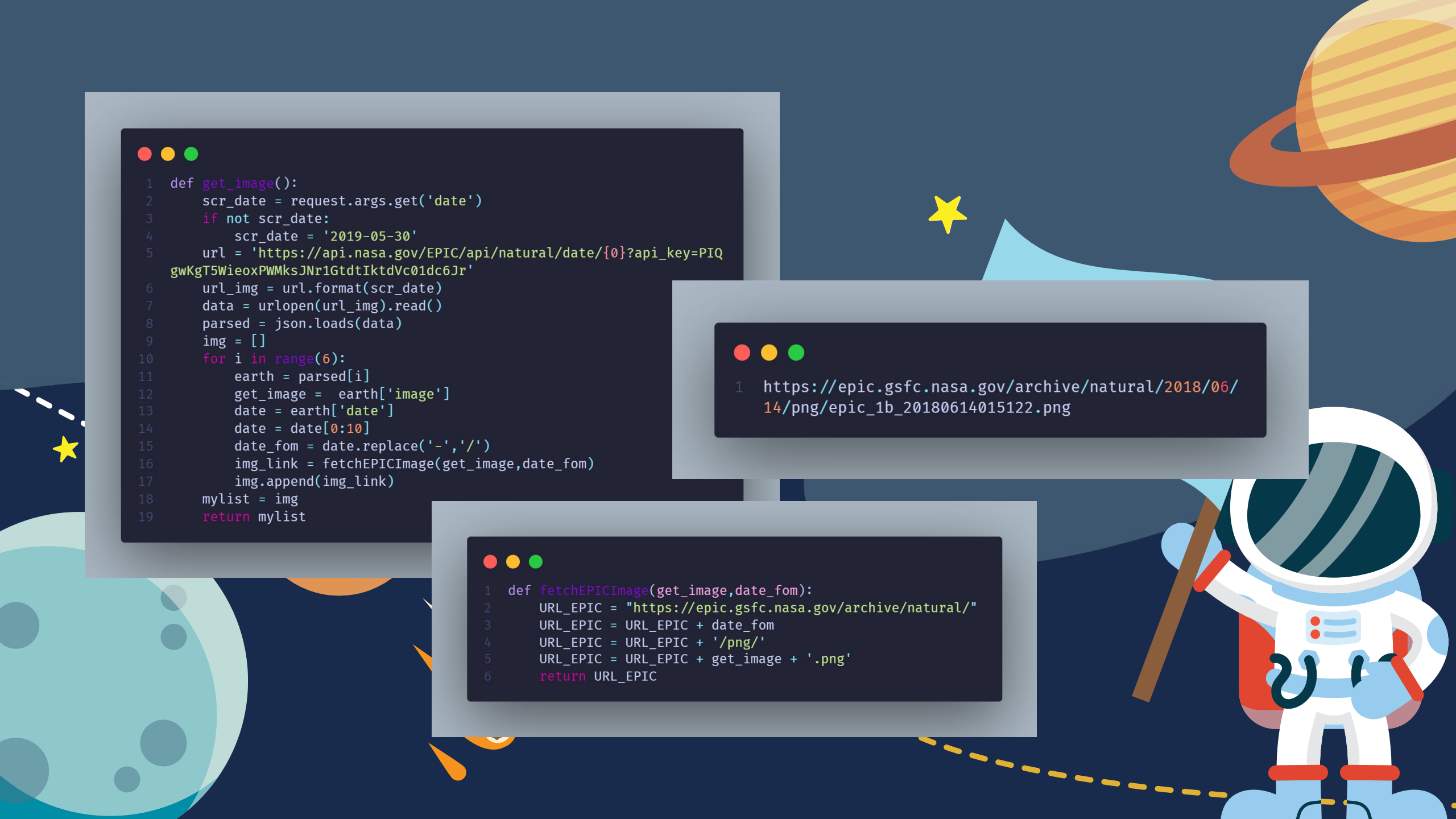
```python
def fetchInSightMars():
    URL_Mars = "https://api.nasa.gov/insight_weather/?api_key=7UbkT3dVXEXJHRbZ7VV0J2eJ6aXMK7XGAgXba2UH&feedtype=json&ver=1.0"
    url = urlopen(URL_Mars).read()
    parsed_mars = json.loads(url)
    mars = None
    first_UTC = parsed_mars['813']['First_UTC']
    last_UTC = parsed_mars['813']['Last_UTC']
    month_ordinal = parsed_mars['813']['Month_ordinal']
    northern_season = parsed_mars['813']['Northern_season']
    season = parsed_mars['813']['Season']
    southern_season = parsed_mars['813']['Southern_season']

    mars = {'first_UTC': first_UTC,
            'last_UTC': last_UTC,
            'month_ordinal': month_ordinal,
            'northern_season': northern_season,
            'season': season,
            'southern_season': southern_season
            }
    return mars
```


4

API：https://api.nasa.gov/EPIC/api/natural/date/{YYYY-MM-DD}?api_key=DEMO_KEY




```
[{'attitude_quaternions': {'q0': 0.495585,
   'q1': -0.356553,
   'q2': -0.694341,
   'q3': 0.380992},
  'caption': "This image was taken by NASA's EPIC camera onboard the NOAA DSCOVR spacecraft",
  'centroid_coordinates': {'lat': 24.56543, 'lon': 170.683594},
  'coords': {'attitude_quaternions': {'q0': 0.495585,
    'q1': -0.356553,
    'q2': -0.694341,
    'q3': 0.380992},
   'centroid_coordinates': {'lat': 24.56543, 'lon': 170.683594},
   'dscovr_j2000_position': {'x': 339005.145834,
    'y': 1368757.776568,
    'z': 645861.927788},
   'lunar_j2000_position': {'x': 381104.35964,
    'y': 104675.95663,
    'z': -35701.90868},
   'sun_j2000_position': {'x': 56531896.481815,
    'y': 129098775.627199,
    'z': 55963516.666649}},
  'date': '2019-05-30 01:09:10',
  'dscovr_j2000_position': {'x': 339005.145834,
   'y': 1368757.776568,
   'z': 645861.927788},
  'identifier': '20190530011359',
  'image': 'epic_1b_20190530011359',
  'lunar_j2000_position': {'x': 381104.35964,
   'y': 104675.95663,
   'z': -35701.90868},
  'sun_j2000_position': {'x': 56531896.481815,
   'y': 129098775.627199,
   'z': 55963516.666649},
  'version': '03'},
```


def get_image():
scr_date = request.args.get('date')
if not scr_date:
scr_date = '2019-05-30'
url = 'https://api.nasa.gov/EPIC/api/natural/date/{0}?api_key=PIQgwKgT5WieoxPWMksJNr1GtdtIktdVc01dc6Jr'
url_img = url.format(scr_date)
data = urlopen(url_img).read()
parsed = json.loads(data)
img = []
for i in range(6):
earth = parsed[i]
get_image = earth['image']
date = earth['date']
date = date[0:10]
date_fom = date.replace('-','/')
img_link = fetchEPICImage(get_image,date_fom)
img.append(img_link)
mylist = img
return mylist
https://epic.gsfc.nasa.gov/archive/natural/2018/06/14/png/epic_1b_20180614015122.png
def fetchEPICImage(get_image,date_fom):
URL_EPIC = "https://epic.gsfc.nasa.gov/archive/natural/"
URL_EPIC = URL_EPIC + date_fom
URL_EPIC = URL_EPIC + '/png/'
URL_EPIC = URL_EPIC + get_image + '.png'
return URL_EPIC


THANK
YOU