Algorithm To build a Python program to download YouTube videos, you will need to:

1. Import the necessary libraries. In this case, you will need to import the requests library to make requests to the YouTube API, the re library to parse the URL, and the os library to create directories.
2. Define a function to download the YouTube video. This function should take the video URL as its argument, and it should return the path to the downloaded video file.
3. Get the video ID from the URL. This can be done using the re library.
4. Make a request to the YouTube API to get the video details. This can be done using the requests library.
5. Extract the video title and thumbnail URL from the response.
6. Create a directory to store the video.
7. Download the video file and thumbnail.
8. Print a message stating that the video was downloaded successfully.

that program in (youtube scraper.py)first gets the video ID from the URL. Then, it makes a request to the YouTube API to get the video details. The video title and thumbnail URL are then extracted from the response. A directory is created to store the video, and the video file and thumbnail are downloaded. The program then prints a message stating that the video was downloaded successfully.

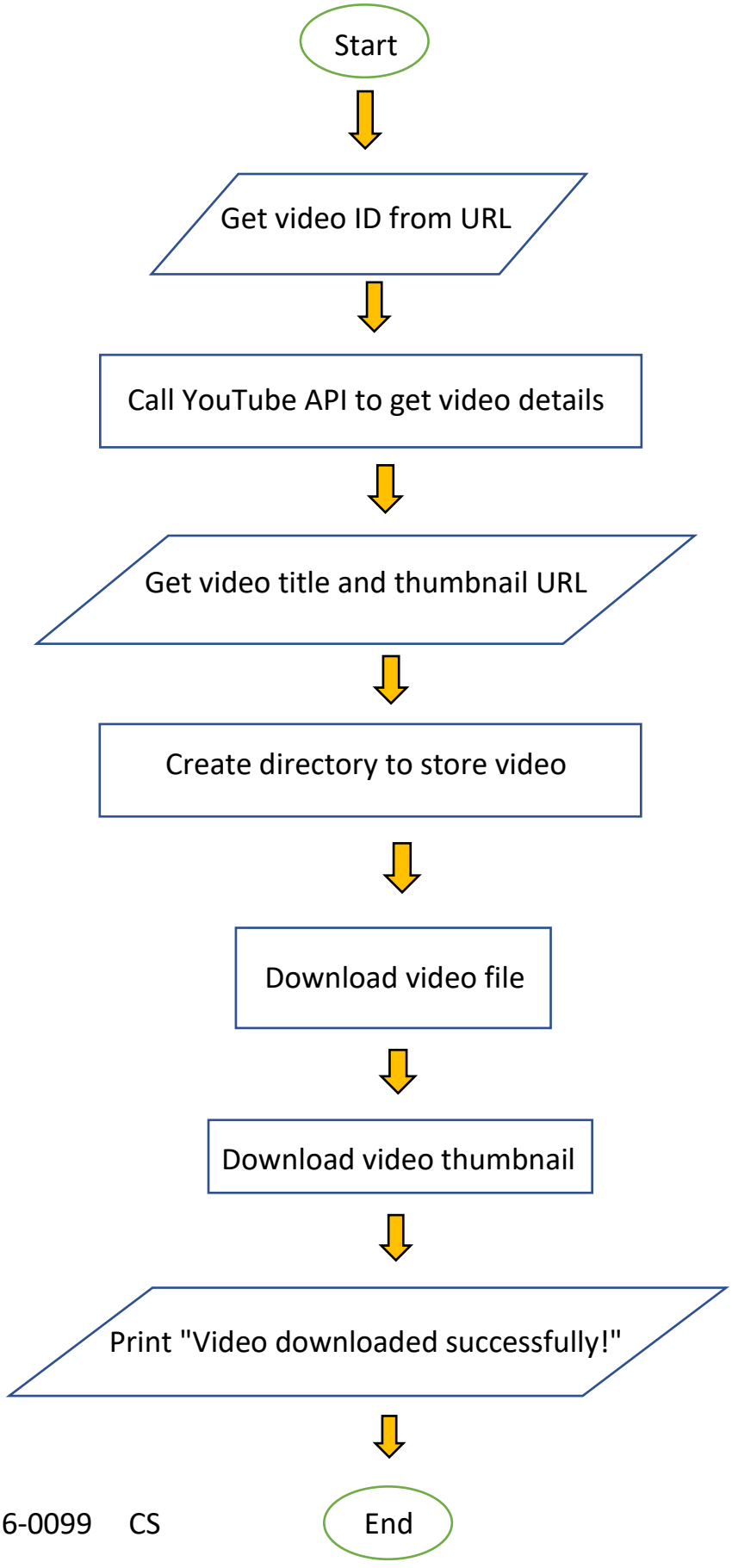
the pseudocode for the Python program to download YouTube videos:

```
# Make a request to the YouTube API to get the video details.

response =
requests.get('https://www.googleapis.com/youtube/v3/videos?part=snippet,contentDetails&id=' + video_id)


# Check if the request was successful.

if response.status_code != 200:

   print('Error downloading video: ' + response.status_code)

   return
```

```
# Get the video title and thumbnail URL from the response.
video_title = response.json()['items'][0]['snippet']['title']
video_thumbnail_url = response.json()['items'][0]['snippet']['thumbnails']['high']['url']

# Create a directory to store the video.
video_dir = os.path.join('downloads', video_title)
if not os.path.exists(video_dir):
    os.mkdir(video_dir)

# Download the video file.
video_filename = os.path.join(video_dir, video_title + '.mp4')
response = requests.get(response.json()['items'][0]['contentDetails']['url'], stream=True)
with open(video_filename, 'wb') as f:
    for chunk in response.iter_content(chunk_size=1024):
        f.write(chunk)

# Download the video thumbnail.
video_thumbnail_filename = os.path.join(video_dir, video_title + '.jpg')
response = requests.get(video_thumbnail_url, stream=True)
with open(video_thumbnail_filename, 'wb') as f:
    for chunk in response.iter_content(chunk_size=1024):
        f.write(chunk)

print('Video downloaded successfully!')
```

flowchart for the Python program to download YouTube videos:

flowchart TD



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