```
!pip install pyav
```

```
Collecting pyav
  Downloading pyav-12.3.0-cp310-cp310-
manylinux_2_17_x86_64.manylinux2014_x86_64.whl.metadata (2.5 kB)
Downloading pyav-12.3.0-cp310-cp310-
manylinux_2_17_x86_64.manylinux2014_x86_64.whl (29.6 MB)
━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 29.6/29.6 MB 9.7 MB/s eta
0:00:00
```

```
!pip install ffmpeg-python
```

```
Collecting ffmpeg-python
  Downloading ffmpeg_python-0.2.0-py3-none-any.whl.metadata (1.7 kB)
Requirement already satisfied: future in
/usr/local/lib/python3.10/dist-packages (from ffmpeg-python) (1.0.0)
Downloading ffmpeg_python-0.2.0-py3-none-any.whl (25 kB)
Installing collected packages: ffmpeg-python
Successfully installed ffmpeg-python-0.2.0
```

```
import av

# Initialize the container and counters
container = av.open("/content/3150419-uhd_3840_2160_30fps.mp4")
total_frames = 0
frame_types = {'I': 0, 'P': 0, 'B': 0}

# Iterate through the frames and count them by type
for frame in container.decode(video=0):
    total_frames += 1
    frame_types[frame.pict_type.name] += 1

# Close the container
container.close()

print(f"Total frames: {total_frames}")
print(f"Frame types: {frame_types}")
```

```
Total frames: 392
Frame types: {'I': 5, 'P': 100, 'B': 287}
```

```
import ffmpeg

def extract_frames_info(video_path):
    try:
        probe = ffmpeg.probe(video_path)
        video_streams = [stream for stream in probe['streams'] if
        stream['codec_type'] == 'video']

        if not video_streams:
            raise ValueError("No video stream found")

        video_stream = video_streams[0]

        width = video_stream['width']
        height = video_stream['height']
        frame_rate = eval(video_stream['r_frame_rate'])
        duration = float(video_stream['duration'])
        total_frames = int(video_stream['nb_frames'])

        print(f"Width: {width}")
        print(f"Height: {height}")
        print(f"Frame Rate: {frame_rate}")
        print(f"Duration: {duration} seconds")
        print(f"Total Frames: {total_frames}")

        return {
            'width': width,
            'height': height,
            'frame_rate': frame_rate,
            'duration': duration,
            'total_frames': total_frames
        }

    except ffmpeg.Error as e:
        print(f"Error occurred: {e.stderr.decode()}")
        return None

# Replace 'sample_video.mp4' with the path to your video file
video_info = extract_frames_info("/content/3150419-
        uhd_3840_2160_30fps.mp4")
```

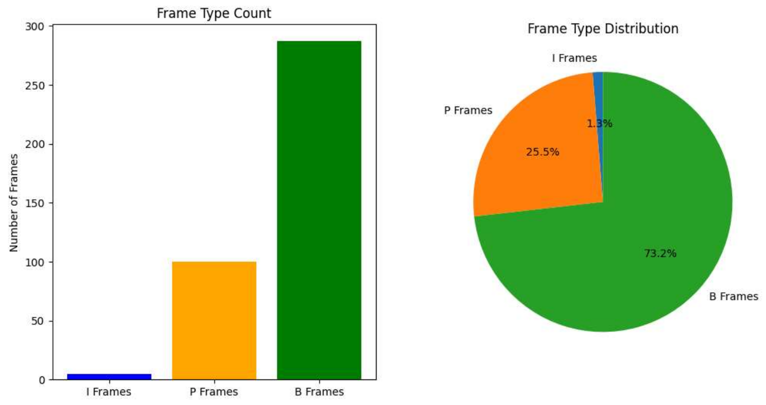
```
Width: 3840
Height: 2160
Frame Rate: 29.97002997002997
Duration: 13.079733 seconds
Total Frames: 392
```

```
!pip3 install psubprocess
```

```
ERROR: Could not find a version that satisfies the requirement
psubprocess (from versions: none)
ERROR: No matching distribution found for psubprocess
```

```
import av
import matplotlib.pyplot as plt

def analyze_frame_types(video_path):
    # Initialize counters
    total_frames = 0
    frame_types = {'I': 0, 'P': 0, 'B': 0}

    # Open the video container
    container = av.open(video_path)

    # Iterate through frames in the video
    for frame in container.decode(video=0):
        total_frames += 1
        frame_types[frame.pict_type.name] += 1

    return frame_types, total_frames

def plot_frame_distribution(frame_counts, total_frames):
    frame_types = ['I Frames', 'P Frames', 'B Frames']
    counts = [frame_counts.get('I', 0), frame_counts.get('P', 0),
        frame_counts.get('B', 0)]

    # Check if total frames is greater than zero to plot
    if total_frames > 0:
        percentages = [(count / total_frames) * 100 for count in
        counts]

        # Print counts and percentages for each frame type
        print("Frame Type Distribution:")
        for frame_type, count, percentage in zip(frame_types, counts,
        percentages):
            print(f"{frame_type}: Count = {count}, Percentage =
        {percentage:.2f}%")

        # Bar graph
        plt.figure(figsize=(12, 6))
        plt.subplot(1, 2, 1)
        plt.bar(frame_types, counts, color=['blue', 'orange',
        'green'])
        plt.title('Frame Type Count')
        plt.ylabel('Number of Frames')

        # Pie chart
        plt.subplot(1, 2, 2)
        plt.pie(percentages, labels=frame_types, autopct='%1.1f%%',
        startangle=90)
        plt.title('Frame Type Distribution')

        plt.show()
    else:
        print("No frames found in the video.")

def main(video_path):
    frame_counts, total_frames = analyze_frame_types(video_path)
    plot_frame_distribution(frame_counts, total_frames)

# Replace 'your_video.mp4' with the path to your video file
if __name__ == "__main__":
    video_path = "/content/3150419-uhd_3840_2160_30fps.mp4"  # Update
        with your video path
    main(video_path)
```

```
Frame Type Distribution:
I Frames: Count = 5, Percentage = 1.28%
P Frames: Count = 100, Percentage = 25.51%
B Frames: Count = 287, Percentage = 73.21%
```



```
!pip install Pillow
```

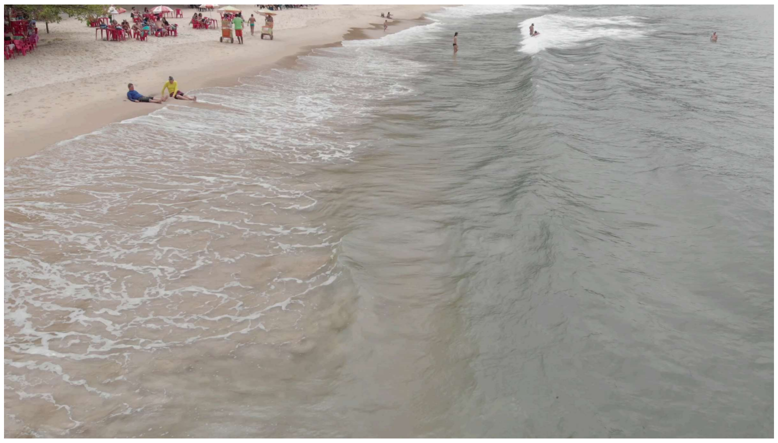
```
Requirement already satisfied: Pillow in
/usr/local/lib/python3.10/dist-packages (9.4.0)
```

```
from PIL import Image
import os

def display_frames(frame_type):
    # Get a list of all extracted frames
    frame_files = sorted([f for f in os.listdir() if
        f.startswith(frame_type) and f.endswith('.png')])

    for frame_file in frame_files:
        # Open the image file
        with Image.open(frame_file) as img:
            img.show()  # Display the image
            input("Press Enter to continue to the next frame...")  #
        Wait for user input

def main():
    # Display I frames
    print("Displaying I Frames:")
    display_frames('i_frame_')

    # Display P frames
    print("Displaying P Frames:")
    display_frames('p_frame_')

    # Display B frames
    print("Displaying B Frames:")
    display_frames('b_frame_')

if __name__ == "__main__":
    main()
```

```
Displaying I Frames:
Displaying P Frames:
Displaying B Frames:
```

```
import av
import cv2
import numpy as np
import matplotlib.pyplot as plt
from google.colab.patches import cv2_imshow

# Open the video file
container = av.open("/content/3150419-uhd_3840_2160_30fps.mp4")

# Initialize counters for each frame type
frame_counts = {'I': 0, 'P': 0, 'B': 0}

# Initialize dictionaries to store frames
frames_to_display = {'I': [], 'P': [], 'B': []}

# Loop through frames in the video
for frame in container.decode(video=0):
    # Get the frame type
    frame_type = frame.pict_type.name

    # Check if we already have 2 frames of this type
    if frame_counts[frame_type] < 2:
        # Convert frame to a numpy array (OpenCV image)
        frame_image = frame.to_image()
        frame_array = np.array(frame_image)

        # Store the frame
        frames_to_display[frame_type].append(frame_array)

        # Update the count for this frame type
        frame_counts[frame_type] += 1

    # Check if we have collected enough frames of all types
    if all(count >= 2 for count in frame_counts.values()):
        break
```

```
# Function to display frames using OpenCV
def display_frames(frames, frame_type):
    for i, frame in enumerate(frames):
        # Convert RGB to BGR for OpenCV
        frame_bgr = cv2.cvtColor(frame, cv2.COLOR_RGB2BGR)

        # Display the frame
        cv2_imshow(frame_bgr)
        cv2.waitKey(0)
        cv2.destroyAllWindows()

# Display the frames
for frame_type in ['I', 'P', 'B']:
    display_frames(frames_to_display[frame_type], frame_type)
```



```
# Extract I frames
!ffmpeg -i 3150419-uhd_3840_2160_30fps.mp4 -vf
        "select='eq(pict_type\,I)'" -vsync vfr -frame_pts true
        I_frame_%04d.png


# Extract P frames
!ffmpeg -i 3150419-uhd_3840_2160_30fps.mp4 -vf
        "select='eq(pict_type\,P)'" -vsync vfr -frame_pts true
        P_frame_%04d.png


# Extract B frames
!ffmpeg -i 3150419-uhd_3840_2160_30fps.mp4 -vf
        "select='eq(pict_type\,B)'" -vsync vfr -frame_pts true
        B_frame_%04d.png
```

```
ffmpeg version 4.4.2-0ubuntu0.22.04.1 Copyright (c) 2000-2021 the
FFmpeg developers
  built with gcc 11 (Ubuntu 11.2.0-19ubuntu1)
  configuration: --prefix=/usr --extra-version=0ubuntu0.22.04.1 --
toolchain=hardened --libdir=/usr/lib/x86_64-linux-gnu --
```

```
incdir=/usr/include/x86_64-linux-gnu --arch=amd64 --enable-gpl --
disable-stripping --enable-gnutls --enable-ladspa --enable-libaom --
enable-libass --enable-libbluray --enable-libbs2b --enable-libcaca --
enable-libcdio --enable-libcodec2 --enable-libdav1d --enable-libflite
--enable-libfontconfig --enable-libfreetype --enable-libfribidi --
enable-libgme --enable-libgsm --enable-libjack --enable-libmp3lame --
enable-libmysofa --enable-libopenjpeg --enable-libopenmpt --enable-
libopus --enable-libpulse --enable-librabbitmq --enable-librubberband
--enable-libshine --enable-libsnappy --enable-libsoxr --enable-
libspeex --enable-libsrt --enable-libssh --enable-libtheora --enable-
libtwolame --enable-libvidstab --enable-libvorbis --enable-libvpx --
enable-libwebp --enable-libx265 --enable-libxml2 --enable-libxvid --
enable-libzimg --enable-libzmq --enable-libzvbi --enable-lv2 --enable-
omx --enable-openal --enable-opencl --enable-opengl --enable-sdl2 --
enable-pocketsphinx --enable-librsvg --enable-libmfx --enable-
libdc1394 --enable-libdrm --enable-libiec61883 --enable-chromaprint --
enable-frei0r --enable-libx264 --enable-shared
  libavutil      56. 70.100 / 56. 70.100
  libavcodec     58.134.100 / 58.134.100
  libavformat    58. 76.100 / 58. 76.100
  libavdevice    58. 13.100 / 58. 13.100
  libavfilter     7.110.100 /  7.110.100
  libswscale      5.  9.100 /  5.  9.100
  libswresample   3.  9.100 /  3.  9.100
  libpostproc    55.  9.100 / 55.  9.100
Input #0, mov,mp4,m4a,3gp,3g2,mj2, from '3150419-
uhd_3840_2160_30fps.mp4':
  Metadata:
    major_brand     : mp42
    minor_version   : 0
    compatible_brands: mp42mp41isomavc1
    creation_time   : 2019-10-30T14:20:33.000000Z
  Duration: 00:00:13.08, start: 0.000000, bitrate: 21310 kb/s
  Stream #0:0(und): Video: h264 (High) (avc1 / 0x31637661),
yuv420p(tv, bt709), 3840x2160, 21306 kb/s, 29.97 fps, 29.97 tbr, 30k
tbn, 60k tbc (default)
    Metadata:
      creation_time   : 2019-10-30T14:20:33.000000Z
      handler_name    : L-SMASH Video Handler
      vendor_id       : [0][0][0][0]
      encoder         : AVC Coding
Stream mapping:
  Stream #0:0 -> #0:0 (h264 (native) -> png (native))
Press [q] to stop, [?] for help
Output #0, image2, to 'I_frame_%04d.png':
  Metadata:
    major_brand     : mp42
    minor_version   : 0
    compatible_brands: mp42mp41isomavc1
    encoder         : Lavf58.76.100
  Stream #0:0(und): Video: png, rgb24(pc, gbr/bt709/bt709,
progressive), 3840x2160, q=2-31, 200 kb/s, 29.97 fps, 29.97 tbn
(default)
    Metadata:
      creation_time   : 2019-10-30T14:20:33.000000Z
      handler_name    : L-SMASH Video Handler
      vendor_id       : [0][0][0][0]
      encoder         : Lavc58.134.100 png
frame=    5 fps=0.2 q=-0.0 Lsize=N/A time=00:00:12.04 bitrate=N/A
speed=0.544x
video:31125kB audio:0kB subtitle:0kB other streams:0kB global
```

```
headers:0kB muxing overhead: unknown
ffmpeg version 4.4.2-0ubuntu0.22.04.1 Copyright (c) 2000-2021 the
FFmpeg developers
  built with gcc 11 (Ubuntu 11.2.0-19ubuntu1)
  configuration: --prefix=/usr --extra-version=0ubuntu0.22.04.1 --
toolchain=hardened --libdir=/usr/lib/x86_64-linux-gnu --
incdir=/usr/include/x86_64-linux-gnu --arch=amd64 --enable-gpl --
disable-stripping --enable-gnutls --enable-ladspa --enable-libaom --
enable-libass --enable-libbluray --enable-libbs2b --enable-libcaca --
enable-libcdio --enable-libcodec2 --enable-libdav1d --enable-libflite
--enable-libfontconfig --enable-libfreetype --enable-libfribidi --
enable-libgme --enable-libgsm --enable-libjack --enable-libmp3lame --
enable-libmysofa --enable-libopenjpeg --enable-libopenmpt --enable-
libopus --enable-libpulse --enable-librabbitmq --enable-librubberband
--enable-libshine --enable-libsnappy --enable-libsoxr --enable-
libspeex --enable-libsrt --enable-libssh --enable-libtheora --enable-
libtwolame --enable-libvidstab --enable-libvorbis --enable-libvpx --
enable-libwebp --enable-libx265 --enable-libxml2 --enable-libxvid --
enable-libzimg --enable-libzmq --enable-libzvbi --enable-lv2 --enable-
omx --enable-openal --enable-opencl --enable-opengl --enable-sdl2 --
enable-pocketsphinx --enable-librsvg --enable-libmfx --enable-
libdc1394 --enable-libdrm --enable-libiec61883 --enable-chromaprint --
enable-frei0r --enable-libx264 --enable-shared
  libavutil      56. 70.100 / 56. 70.100
  libavcodec     58.134.100 / 58.134.100
  libavformat    58. 76.100 / 58. 76.100
  libavdevice    58. 13.100 / 58. 13.100
  libavfilter     7.110.100 /  7.110.100
  libswscale      5.  9.100 /  5.  9.100
  libswresample   3.  9.100 /  3.  9.100
  libpostproc    55.  9.100 / 55.  9.100
Input #0, mov,mp4,m4a,3gp,3g2,mj2, from '3150419-
uhd_3840_2160_30fps.mp4':
  Metadata:
    major_brand     : mp42
    minor_version   : 0
    compatible_brands: mp42mp41isomavc1
    creation_time   : 2019-10-30T14:20:33.000000Z
  Duration: 00:00:13.08, start: 0.000000, bitrate: 21310 kb/s
  Stream #0:0(und): Video: h264 (High) (avc1 / 0x31637661),
yuv420p(tv, bt709), 3840x2160, 21306 kb/s, 29.97 fps, 29.97 tbr, 30k
tbn, 60k tbc (default)
    Metadata:
      creation_time   : 2019-10-30T14:20:33.000000Z
      handler_name    : L-SMASH Video Handler
      vendor_id       : [0][0][0][0]
      encoder         : AVC Coding
Stream mapping:
  Stream #0:0 -> #0:0 (h264 (native) -> png (native))
Press [q] to stop, [?] for help
Output #0, image2, to 'P_frame_%04d.png':
  Metadata:
    major_brand     : mp42
    minor_version   : 0
    compatible_brands: mp42mp41isomavc1
    encoder         : Lavf58.76.100
  Stream #0:0(und): Video: png, rgb24(pc, gbr/bt709/bt709,
progressive), 3840x2160, q=2-31, 200 kb/s, 29.97 fps, 29.97 tbn
(default)
    Metadata:
      creation_time   : 2019-10-30T14:20:33.000000Z
      handler_name    : L-SMASH Video Handler
      vendor_id       : [0][0][0][0]
      encoder         : Lavc58.134.100 png
frame=  100 fps=1.1 q=-0.0 Lsize=N/A time=00:00:13.07 bitrate=N/A
speed=0.15x
video:631915kB audio:0kB subtitle:0kB other streams:0kB global
headers:0kB muxing overhead: unknown
ffmpeg version 4.4.2-0ubuntu0.22.04.1 Copyright (c) 2000-2021 the
FFmpeg developers
  built with gcc 11 (Ubuntu 11.2.0-19ubuntu1)
  configuration: --prefix=/usr --extra-version=0ubuntu0.22.04.1 --
toolchain=hardened --libdir=/usr/lib/x86_64-linux-gnu --
incdir=/usr/include/x86_64-linux-gnu --arch=amd64 --enable-gpl --
disable-stripping --enable-gnutls --enable-ladspa --enable-libaom --
enable-libass --enable-libbluray --enable-libbs2b --enable-libcaca --
enable-libcdio --enable-libcodec2 --enable-libdav1d --enable-libflite
--enable-libfontconfig --enable-libfreetype --enable-libfribidi --
enable-libgme --enable-libgsm --enable-libjack --enable-libmp3lame --
enable-libmysofa --enable-libopenjpeg --enable-libopenmpt --enable-
libopus --enable-libpulse --enable-librabbitmq --enable-librubberband
--enable-libshine --enable-libsnappy --enable-libsoxr --enable-
libspeex --enable-libsrt --enable-libssh --enable-libtheora --enable-
libtwolame --enable-libvidstab --enable-libvorbis --enable-libvpx --
enable-libwebp --enable-libx265 --enable-libxml2 --enable-libxvid --
enable-libzimg --enable-libzmq --enable-libzvbi --enable-lv2 --enable-
omx --enable-openal --enable-opencl --enable-opengl --enable-sdl2 --
enable-pocketsphinx --enable-librsvg --enable-libmfx --enable-
libdc1394 --enable-libdrm --enable-libiec61883 --enable-chromaprint --
enable-frei0r --enable-libx264 --enable-shared
  libavutil      56. 70.100 / 56. 70.100
  libavcodec     58.134.100 / 58.134.100
  libavformat    58. 76.100 / 58. 76.100
  libavdevice    58. 13.100 / 58. 13.100
  libavfilter     7.110.100 /  7.110.100
  libswscale      5.  9.100 /  5.  9.100
  libswresample   3.  9.100 /  3.  9.100
  libpostproc    55.  9.100 / 55.  9.100
Input #0, mov,mp4,m4a,3gp,3g2,mj2, from '3150419-
uhd_3840_2160_30fps.mp4':
  Metadata:
    major_brand     : mp42
    minor_version   : 0
    compatible_brands: mp42mp41isomavc1
    creation_time   : 2019-10-30T14:20:33.000000Z
  Duration: 00:00:13.08, start: 0.000000, bitrate: 21310 kb/s
  Stream #0:0(und): Video: h264 (High) (avc1 / 0x31637661),
yuv420p(tv, bt709), 3840x2160, 21306 kb/s, 29.97 fps, 29.97 tbr, 30k
tbn, 60k tbc (default)
    Metadata:
      creation_time   : 2019-10-30T14:20:33.000000Z
      handler_name    : L-SMASH Video Handler
      vendor_id       : [0][0][0][0]
      encoder         : AVC Coding
Stream mapping:
  Stream #0:0 -> #0:0 (h264 (native) -> png (native))
Press [q] to stop, [?] for help
Output #0, image2, to 'B_frame_%04d.png':
  Metadata:
    major_brand     : mp42
    minor_version   : 0
    compatible_brands: mp42mp41isomavc1
    encoder         : Lavf58.76.100
  Stream #0:0(und): Video: png, rgb24(pc, gbr/bt709/bt709,
progressive), 3840x2160, q=2-31, 200 kb/s, 29.97 fps, 29.97 tbn
(default)
    Metadata:
      creation_time   : 2019-10-30T14:20:33.000000Z
      handler_name    : L-SMASH Video Handler
      vendor_id       : [0][0][0][0]
      encoder         : Lavc58.134.100 png
frame=  287 fps=1.3 q=-0.0 Lsize=N/A time=00:00:13.04 bitrate=N/A
speed=0.0596x
video:1860680kB audio:0kB subtitle:0kB other streams:0kB global
headers:0kB muxing overhead: unknown
```

```python
import os
import glob

def calculate_average_frame_size(frame_type):
    frame_files = glob.glob(f'{frame_type}_frame_*.png')
    total_size = sum(os.path.getsize(frame) for frame in frame_files)
    average_size = total_size / len(frame_files) if frame_files else 0
    print(f"Total size of all {frame_type} frames: {total_size} KB")
    return average_size

average_size_I = calculate_average_frame_size('I')
average_size_P = calculate_average_frame_size('P')
average_size_B = calculate_average_frame_size('B')

print(f"Average size of I frames: {average_size_I / 1024:.2f} KB")
print(f"Average size of P frames: {average_size_P / 1024:.2f} KB")
print(f"Average size of B frames: {average_size_B / 1024:.2f} KB")
```

```
Total size of all I frames: 31871826 KB
Total size of all P frames: 647080877 KB
Total size of all B frames: 1905336815 KB
Average size of I frames: 6224.97 KB
Average size of P frames: 6319.15 KB
Average size of B frames: 6483.21 KB
```

```python
import os
import glob
import subprocess

def extract_frames(video_path, frame_type):
    frame_pattern = f'{frame_type}_frame_%04d.png'
    if frame_type == 'I':
        subprocess.run(['ffmpeg', '-i', video_path, '-vf',
        "select='eq(pict_type,I)'", '-vsync', 'vfr', '-frame_pts',
        'true', frame_pattern])
    elif frame_type == 'P':
        subprocess.run(['ffmpeg', '-i', video_path, '-vf',
        "select='eq(pict_type,P)'", '-vsync', 'vfr', '-frame_pts',
        'true', frame_pattern])
    elif frame_type == 'B':
        subprocess.run(['ffmpeg', '-i', video_path, '-vf',
        "select='eq(pict_type,B)'", '-vsync', 'vfr', '-frame_pts',
        'true', frame_pattern])

def calculate_average_frame_size(frame_type):
    frame_files = glob.glob(f'{frame_type}_frame_*.png')
    total_size = sum(os.path.getsize(frame) for frame in frame_files)
    average_size = total_size / len(frame_files) if frame_files else 0
    return average_size
```

```
video_path = "3150419-uhd_3840_2160_30fps.mp4"
extract_frames(video_path, 'I')
extract_frames(video_path, 'P')
extract_frames(video_path, 'B')

average_size_I = calculate_average_frame_size('I')
average_size_P = calculate_average_frame_size('P')
average_size_B = calculate_average_frame_size('B')

print(f"Average size of I frames: {average_size_I / 1024:.2f} KB")
print(f"Average size of P frames: {average_size_P / 1024:.2f} KB")
print(f"Average size of B frames: {average_size_B / 1024:.2f} KB")
```

```
Average size of I frames: 6224.97 KB
Average size of P frames: 6319.15 KB
Average size of B frames: 6483.21 KB
```

```
import subprocess
import os

def extract_i_frames(video_path, output_dir):
    try:
        # Ensure the output directory exists
        os.makedirs(output_dir, exist_ok=True)

        # Define the ffmpeg command to extract I-frames
        cmd = [
            'ffmpeg',
            '-i', video_path,
            '-vf', 'select=eq(pict_type\\,I)',
            '-vsync', 'vfr',
            f'{output_dir}/frame_%04d.png'
        ]

        # Run the command
        subprocess.run(cmd, stdout=subprocess.PIPE,
         stderr=subprocess.PIPE, text=True)
        print(f"I-frames extracted successfully to {output_dir}")

    except Exception as e:
        print(f"Error extracting I-frames: {str(e)}")

# Example usage
video_path = "3150419-uhd_3840_2160_30fps.mp4"  # Replace with the
        correct path
i_frames_dir = 'I_frames'  # Directory to save I-frames

extract_i_frames(video_path, i_frames_dir)


def reconstruct_video_from_i_frames(i_frames_dir, output_video_path,
        frame_rate=1):
    try:
        # Define the ffmpeg command to reconstruct the video
        cmd = [
            'ffmpeg',
            '-framerate', str(frame_rate),  # Set the frame rate
            '-i', os.path.join(i_frames_dir, 'frame_%04d.png'),
            '-c:v', 'libx264',  # Use H.264 codec
            '-pix_fmt', 'yuv420p',
            output_video_path
        ]

        # Run the command
        subprocess.run(cmd, stdout=subprocess.PIPE,
        stderr=subprocess.PIPE, text=True)
        print(f"Video reconstructed successfully and saved to
        {output_video_path}")

    except Exception as e:
        print(f"Error reconstructing video: {str(e)}")

# Example usage
output_video_path = 'reconstruct_video.mp4'  # Path to save the
        reconstructed video
reconstruct_video_from_i_frames(i_frames_dir,
        output_video_path,frame_rate=1)
```

```
I-frames extracted successfully to I_frames
Video reconstructed successfully and saved to reconstruct_video.mp4
```

```
from IPython.display import Video

# Display the reconstructed video
Video('reconstruct_video.mp4', embed=True)
```

0:00 / 0:05