```
In [1]:

#library for understanding music
from music21 import *
```

```
In [2]:

import music21
```

```
In [3]:

%%capture
try:
    import music21
except:
    !pip install music21
```

```
In [4]:

#defining function to read MIDI files
def read_midi(file):

    print("Loading Music File:",file)

    notes=[]
    notes_to_parse = None

    #parsing a midi file
    midi = converter.parse(file)

    #grouping based on different instruments
    s2 = instrument.partitionByInstrument(midi)

    #Looping over all the instruments
    for part in s2.parts:

        #select elements of only piano
        if 'Piano' in str(part):

            notes_to_parse = part.recurse()

            #finding whether a particular element is note or a chord
            for element in notes_to_parse:

                #note
                if isinstance(element, note.Note):
                    notes.append(str(element.pitch))

                #chord
                elif isinstance(element, chord.Chord):
                    notes.append('.'.join(str(n) for n in element.normalOrder))

    return np.array(notes)
```

```
In [5]:

#for listing down the file names
import os

#Array Processing
import numpy as np

#specify the path
path='C:/Users/SHAGAF-G/Downloads/Schubert_dataset/'

#read all the filenames
files=[i for i in os.listdir(path) if i.endswith(".mid")]
```

```
In [31]:
```

```python
#reading each midi file
import pandas as pd
from pandas import DataFrame

#data= [pd.read_csv(path+i) for i in files]
#notes_array = np.array(,encoding='latin1' )

data = pd.read_csv([(path+i) for i in files], encoding='latin1')
```

```
-----------------------------------------------------------------------
ValueError                                Traceback (most recent call last)
<ipython-input-31-3b3983927aec> in <module>
      6 #notes_array = np.array(,encoding='latin1' )
      7
----> 8 data = pd.read_csv([(path+i) for i in files], encoding='latin1')

c:\users\shagaf-g\anaconda3\envs\music generation\lib\site-packages\pandas\io\parsers.py
in read_csv(filepath_or_buffer, sep, delimiter, header, names, index_col, usecols, squeez
e, prefix, mangle_dupe_cols, dtype, engine, converters, true_values, false_values, skipin
itialspace, skiprows, skipfooter, nrows, na_values, keep_default_na, na_filter, verbose,
skip_blank_lines, parse_dates, infer_datetime_format, keep_date_col, date_parser, dayfirs
t, cache_dates, iterator, chunksize, compression, thousands, decimal, lineterminator, quo
techar, quoting, doublequote, escapechar, comment, encoding, dialect, error_bad_lines, wa
rn_bad_lines, delim_whitespace, low_memory, memory_map, float_precision)
    684         )
    685
--> 686     return _read(filepath_or_buffer, kwds)
    687
    688

c:\users\shagaf-g\anaconda3\envs\music generation\lib\site-packages\pandas\io\parsers.py
in _read(filepath_or_buffer, kwds)
    432         # though mypy handling of conditional imports is difficult.
    433         # See https://github.com/python/mypy/issues/1297
--> 434     fp_or_buf, _, compression, should_close = get_filepath_or_buffer(
    435             filepath_or_buffer, encoding, compression
    436         )

c:\users\shagaf-g\anaconda3\envs\music generation\lib\site-packages\pandas\io\common.py i
n get_filepath_or_buffer(filepath_or_buffer, encoding, compression, mode, storage_options
)
    241         if not is_file_like(filepath_or_buffer):
    242             msg = f"Invalid file path or buffer object type: {type(filepath_or_buffer
)}"
--> 243             raise ValueError(msg)
    244
    245     return filepath_or_buffer, None, compression, False

ValueError: Invalid file path or buffer object type: <class 'list'>
```

```
In [ ]:
```

```
In [3]:
```

```python
notes_array = np.array([read_midi(path+i) for i in files])
```

```
-----------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
<ipython-input-3-90ceeefb5114> in <module>
----> 1 midicsv [ -u -v ] [ files[ outfile ] ]

NameError: name 'midicsv' is not defined
```

```
In [6]:
```

```
pip install py-midi
```

```
Collecting py-midi
```

```
    Downloading py_midi-2.0.1-py3-none-any.whl (23 kB)
Collecting pyserial
    Downloading pyserial-3.4-py2.py3-none-any.whl (193 kB)
Installing collected packages: pyserial, py-midi
Successfully installed py-midi-2.0.1 pyserial-3.4
Note: you may need to restart the kernel to use updated packages.
```

In [7]:

```python
import midi
```

In [8]:

```python
from midi import MidiConnector
```

In [11]:

```python
conn = MidiConnector(path, timeout=5)
```

```
---------------------------------------------------------------------------
SerialException                           Traceback (most recent call last)
<ipython-input-11-6bd6cf9f4187> in <module>
----> 1 conn = MidiConnector(path, timeout=5)

~\anaconda3\lib\site-packages\midi\midi.py in __init__(self, port, baudrate, timeout, **k
wargs)
    142             self.baudrate = baudrate
    143             self.timeout = timeout
--> 144             self.__connector = Serial(
    145                 port=self.port, baudrate=self.baudrate, timeout=self.timeout)
    146

~\anaconda3\lib\site-packages\serial\serialwin32.py in __init__(self, *args, **kwargs)
     29             self._overlapped_read = None
     30             self._overlapped_write = None
---> 31             super(Serial, self).__init__(*args, **kwargs)
     32
     33     def open(self):

~\anaconda3\lib\site-packages\serial\serialutil.py in __init__(self, port, baudrate, byte
size, parity, stopbits, timeout, xonxoff, rtscts, write_timeout, dsrdtr, inter_byte_timeo
ut, exclusive, **kwargs)
    238
    239             if port is not None:
--> 240                 self.open()
    241
    242         # - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

~\anaconda3\lib\site-packages\serial\serialwin32.py in open(self)
     60             if self._port_handle == win32.INVALID_HANDLE_VALUE:
     61                 self._port_handle = None    # 'cause __del__ is called anyway
---> 62                 raise SerialException("could not open port {!r}: {!r}".format(self.p
ortstr, ctypes.WinError()))
     63
     64             try:

SerialException: could not open port 'C:/Users/SHAGAF-G/Downloads/Schubert_dataset/': Per
missionError(13, 'Access is denied.', None, 5)
```

In [7]:

```
pip install musicgen
```

```
Note: you may need to restart the kernel to use updated packages.
```

```
'c:\users\shagaf-g\anaconda3\envs\music' is not recognized as an internal or external com
mand,
operable program or batch file.
```

In [6]:

```python
get_notes(path='* mid')
```

```
get_notes(path    .mid )
```

```
---------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
<ipython-input-6-00cba63b7a8b> in <module>
----> 1 get_notes(path='*.mid')

NameError: name 'get_notes' is not defined
```

In [ ]: