

# Events

## Recap session 3 - Timestamps

```
timestamp_seq = [ 0, 1, 2, 3]
ts = timestamp_seq.pop(0)
```

```
...
// retrieve current_ts
...
if current_ts >= ts:
    sample.play()
    ts = timestamp_seq.pop(0)
time.sleep(0.001)
...
// repeat the above
```

## Recap Session 3 - Multiple samples

```
# first item in sublist is the timestamp, second is  
the sample index
```

```
event_seq = [[0, 0], [0.5, 1], [1.5, 0], [3.0, 1]]
```

```
event = event_seq.pop(0)
```

```
event[0] → timestamp
```

```
event[1] → bevat the sample index
```

```
# dictionary = duidelijk
```

# Datastrukturen

- list
- ...?

# Datastructuren

- list
- tuple
- dictionary
- set
- queue
- stack
- ...

# Datastructuren

- list

```
aList = [ 0, 1, 2, 3]  
# ordered collection, similar to array  
# mutable  
# elements of various types are allowed
```

- tuple
- dictionary
- set
- queue
- stack
- ...



# Datastructuren

- list
- tuple

```
aTuple = ('foo', 'bar')  
# ordered collection, similar to a list  
# immutable  
# elements of various types are allowed
```

- dictionary
- set
- queue
- stack
- ...



# Datastructuren

- list
- tuple
- dictionary

```
aDictionary = {'sample': 'kick', 'ts': 1.75}  
# an associative array with key-value pairs  
# mutable  
# elements of various types are allowed
```

- set
- queue
- stack
- ...

( 'key1':  'key2':  'key3':  'key4':  )

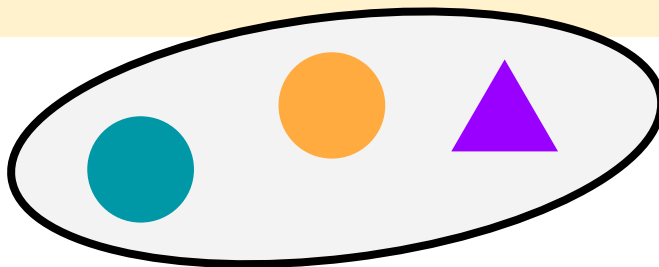


# Datastrukturen

- list
- tuple
- dictionary
- set

```
aSet = set([64, 62, 'c', 67, 'g'])  
# unordered collection  
# mutable  
# elements of various types are allowed  
# no duplicates
```

- queue
- stack
- ...



# Datastructuren

- list
- tuple
- dictionary
- set
- queue

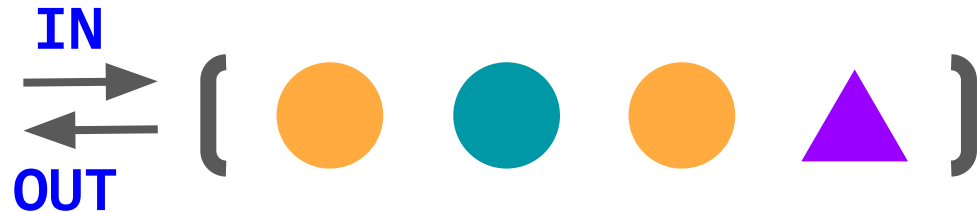
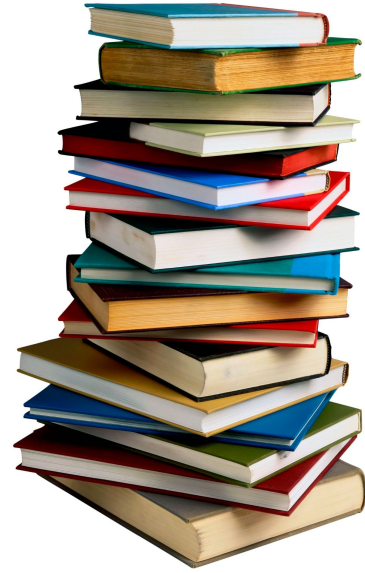


- stack
- ...



# Datastructuren

- list
- tuple
- dictionary
- set
- queue
- **stack**
- ...



# Datastructuren

- list
- tuple
- dictionary
- set
- queue
- stack
- frozenset
- numpy array
- bytearray
- Counter
- OrderedDict
- String
- DefaultDict
- deque
- UserDict
- UserList
- UserString
- linked list
- trees
- ...

# Datastructuren

- **list**
- tuple
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# Datastructuren nodig voor de eindopdracht

- **list**
- tuple
- **dictionary**
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- ...

# Dictionary

```
aDictionary = {'sample': 'kick', 'ts': 1.75}  
# an associative array with key-value pairs  
# mutable  
# elements of various types are allowed
```

```
{ 'key1':  'key2':  'key3':  'key4':  }
```



# Dictionary - toepassing voor eindopdracht

```
# store the sample objects in a dictionary
samples = {
    'kick': sa.WaveObject.from_wave_file("../assets/Kick.wav"),
    'snare': sa.WaveObject.from_wave_file("../assets/Snare.wav"),
    'hihat': sa.WaveObject.from_wave_file("../assets/Hihat.wav")
}

# example of one event
timestamp = {'sample': 'kick', 'ts': 0.75}
```

# Dictionary - eindopdracht

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# RHYTHM GENERATION
# Generate lists with events (durations → timestamps), one list per sample
# Merge separate lists into one new list
# Orden the dictionaries in this merged new list according their timestamp
```

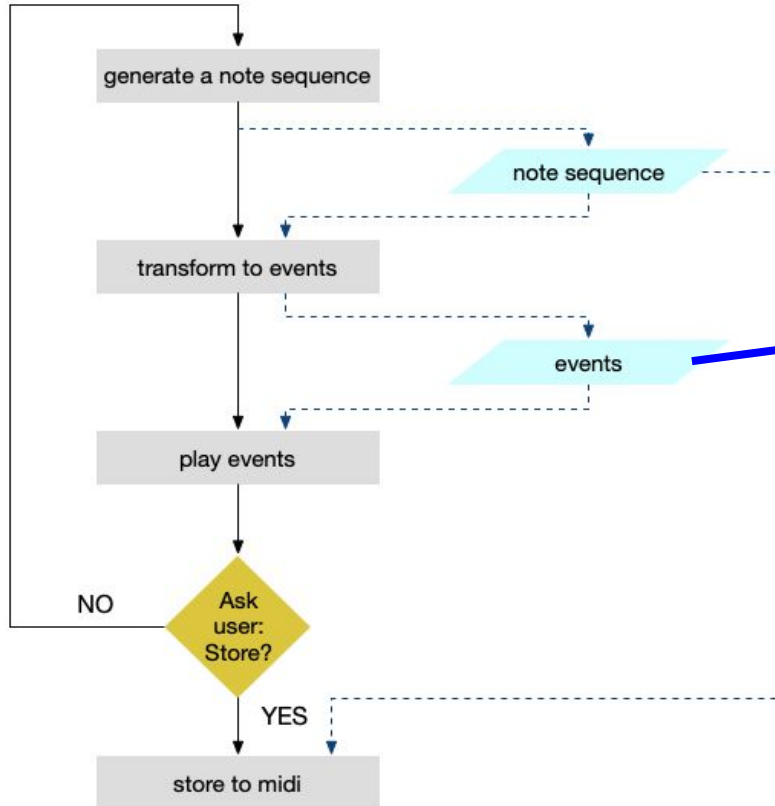
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# example of one event - DO YOU ALSO WANT TO STORE DURATION??
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# Dictionary - eindopdracht



**DO YOU ALSO WANT  
TO STORE  
DURATION??**

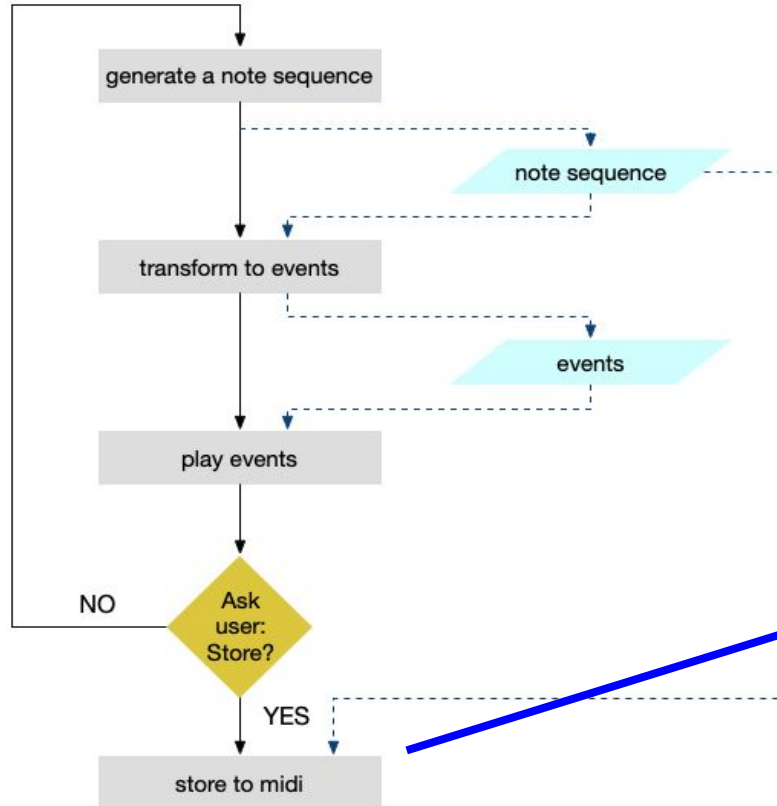
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# example of one event
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# RHYTHM GENERATION
# Generate lists with events (durations → timestamps), one list per sample
# Merge separate lists into one new list
# Order the dictionaries in this merged new list according their timestamp
```

# Dictionary - eindopdracht



**separate tracks?**

# Dictionary - eindopdracht

```
# Order the dictionaries in this merged new list according their timestamp
```

sorting a list of dictionaries:

- manually
- with the sort() function