Roman Numeral Notation
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Why?
- We want a way to describe chord progressions.
- We'd like to be able to understand the function of various chords.
- We'd like it to be independent of specific keys.

What?
- The Tones of a scale can be numbered 1, 2, 3, ...
- Using each tone as a root, we can build a chord using tones in the scale: I, II, III, ...
- The tones are usually 1-3-5 and possible 7 relative to the scale tone as root.

Variations in Notation
- There are several different conventions, but we use this one:
  - Use upper case roman numerals for major and dominant
  - Use lower case roman numerals for minor and diminished
  - Add markings to indicate modification of the chord from its native form.

Triads Built on Tones in the Major Scale

<table>
<thead>
<tr>
<th>Chord</th>
<th>Quality</th>
<th>Tones of scale</th>
<th>In key of C</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Major</td>
<td>1 3 5</td>
<td>C C E G</td>
</tr>
<tr>
<td>ii</td>
<td>Minor</td>
<td>2 4 6</td>
<td>Dm D F A</td>
</tr>
<tr>
<td>iii</td>
<td>Minor</td>
<td>3 5 7</td>
<td>Em E G B</td>
</tr>
<tr>
<td>IV</td>
<td>Major</td>
<td>4 6 1</td>
<td>F F A C</td>
</tr>
<tr>
<td>V</td>
<td>Major</td>
<td>5 7 2</td>
<td>G G B D</td>
</tr>
<tr>
<td>vi</td>
<td>Minor</td>
<td>6 1 3</td>
<td>Am A C E</td>
</tr>
<tr>
<td>vii</td>
<td>Diminished</td>
<td>7 2 4</td>
<td>Bdim B D F</td>
</tr>
</tbody>
</table>

Tetrads Built on Tones in the Major Scale

<table>
<thead>
<tr>
<th>Chord</th>
<th>Quality</th>
<th>Tones of scale</th>
<th>In key of C</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Major-Seventh</td>
<td>1 3 5 7</td>
<td>C Maj 7 C E G B</td>
</tr>
<tr>
<td>ii</td>
<td>Minor-Seventh</td>
<td>2 4 6 1</td>
<td>Dm7 D F A</td>
</tr>
<tr>
<td>iii</td>
<td>Minor-Seventh</td>
<td>3 5 7 2</td>
<td>Em7 E G B D</td>
</tr>
<tr>
<td>IV</td>
<td>Major-Seventh</td>
<td>4 6 1 3</td>
<td>F Maj 7 F A C E</td>
</tr>
<tr>
<td>V</td>
<td>Dominant-Seventh</td>
<td>5 7 2 4</td>
<td>G7 G B D F</td>
</tr>
<tr>
<td>vi</td>
<td>Minor-Seventh</td>
<td>6 1 3 5</td>
<td>Am7 A C E G</td>
</tr>
<tr>
<td>vii</td>
<td>Half-Diminished</td>
<td>7 2 4 6</td>
<td>Bdim7 B D F A</td>
</tr>
</tbody>
</table>

In jazz, most chords are at least tetrads, so we will use these roman numerals, even though they might mean triads in another context.
Typical Chord Functions

- I is the main "resting point" for a major key
- iii and vi are typical substitutes for I:
  - iii is used to indicate a temporary resting point
  - vi is used as a "point of departure" from I
- V is used to lead into I
- IV may lead to V, or may establish a new key
- ii typically leads to V, but may revert to I
- vii has very specialized uses. It may substitute for V.

Typical Jazz Chord Motions within a Major Key

- V leads to I
- IV may lead to V, or may establish a new key
- ii typically leads to V, but may revert to I
- vii has very specialized uses. It may substitute for V.

Thickness of line indicates how common this motion is.

Very Common Jazz Progressions

- "cadence" I - vi - ii - V
- "cadence" I - ii - V
- V - I
- ii - V
- vi - ii - V - I
- iii - vi - ii - V
- iii - vi - ii - V
- I - ii - iii - ii - I

Modifications

- Not all chords built on a given root have the native quality indicated.
- Example:
  - We may choose to use a dominant seventh built on I even though the native chord is a major seventh.
  - We would note this as:
    I7 (e.g. C7)

Typical Functions of Modified Chords

- These chords often serve a "secondary" harmonic function, such as a cadence to a chord other than the root in the key.
- Example:
  - I7 - IV e.g. in C: C7 - F
  - C7 is the V chord of the key of F
  - This is more graceful than jumping directly from I to IV.
  - This is called a secondary dominant.

Modifications (2)

- We may choose to use a minor seventh built on V even though the native chord is a dominant seventh.
- We would note this as:
  Vm7 (e.g. Gm7)
- We can combine this with the previous: Vm7 - I7 - IV (e.g. Gm7 C7 F)
  = ii - V - I relative to IV
- This is called a "turnaround to IV".