Input: key (string, e.g., "C", "Ab", indicating the Major key and the parallel minor key), chord symbol

All examples are based on C chords.

1. CM7, CMaj9, Cadd2, C6, C69, etc. (with Ionian third extensions higher or equal than 7th, considering omitting):
   - If key is "C" (same as root):
     Candidate scales are [C Ionian, C blues major, C pentatonic major, C bebop major].
   - If key is "G" (perfect 5th above):
     Candidate scales are [C Lydian, C pentatonic major, G blues major]
   - If key is others:
     Candidate scales are [C Ionian, C pentatonic major]

2. CM7#11 (can include 9, 13):
   - Key whatever:
     Candidate scales are [C Lydian]

3. Cm9, Cm11, Cm13, etc. (with Aeolian third extensions higher or equal than 7th, not including minor sixths):
   - If key is "Eb" (min 3rd above) (actually, for c minor key):
     Candidate scales are [C Aeolian, C blues minor, C pentatonic minor].
   - If key is "Bb" (Maj 2nd below):
     Candidate scales are [C Dorian, Bb blues major, G blues minor]
   - If key is others:
     Candidate scales are [C Aeolian]

4. Cm69, etc. (with melodic minor third extensions higher or equal than 7th):
   - If key is "Eb" (Maj 2nd above) (actually, for c minor key):
     Candidate scales are [C melodic minor, C blues minor, C pentatonic minor]
   - If key is others:
     Candidate scales are [C melodic minor]

5. Cm7:
   - If key is "Eb" (min 3rd above) or "Bb" (Maj 2nd below):
     Same as rule Cm9.
   - If key is "Ab" (Maj 3rd below):
     Candidate scales are [C Phrygian, F blues minor]
   - If key is others:
     Candidate scales are [C pentatonic minor]

6. Cm6:
   - If key is "Eb" (Maj 2nd below) (actually, for c minor key):
     Same as rule Cm69.
   - If key is "Bb" (Maj 2nd below):
     Same as rule Cm9.
   - If key is "Ab" (Maj 3rd below):
     Same as rule Cm7.
   - If key is others:
     Candidate scales are [C melodic minor, C pentatonic minor]

7. CmM7 (9, 11, 13):
   - Key whatever:

Candidate scales are [C melodic minor, C harmonic minor]

8. Cm:
   - If key is "Eb" (Maj 2nd below) (actually, for c minor key):
     Candidate scales are [C melodic minor, C Aeolian, C blues minor, C pentatonic minor, C harmonic minor]
   - If key is "Bb" (Maj 2nd below):
     Candidate scales are [C Dorian, Bb blues major, G blues minor]
   - If key is "Ab" (Maj 3rd below):
     Candidate scales are [C Phrygian, F blues minor]
   - If key is others:
     Candidate scales are [C pentatonic minor, C Aeolian, C melodic minor, C harmonic minor]

9. F/C, Csus9, C9, C11, C13:
   - If key is "F" (perfect 5th below):
     Candidate scales are [C Mixolydian, C blues, C bebop dominant].
   - If key is others:
     Candidate scales are [C Mixolydian]

10. C7b13:
    - If key is "F" (perfect 5th below):
      Candidate scales are [C melodic major, C blues, C alt, C bebop dominant].
    - If key is others:
      Candidate scales are [C melodic major, C alt]

11. C7#11:
    - If key is "F" (perfect 5th below):
      Candidate scales are [C Lydian dominant, C blues].
    - If key is "Ab" (Maj 3nd below) (actually f minor key):
      Candidate scales are [C Lydian dominant, C alt]
    - If key is others:
      Candidate scales are [C Lydian dominant]

12. C7b9, Calt:
    - Key whatever:
      Candidate scales are [C alt]

13. C7susb9, C7sus#9, C7sus13:
    - Key whatever:
      Candidate scales are [C Phrigian, C Dorian b2]

14. C7:
    - If key is "C" (same as root):
      Candidate scales are [C Mixolydian, F blues, C blues, F bebop dominant]
    - If key is "F" (perfect 5th below):
      Candidate scales are [C Mixolydian, C Lydian dominant, C blues, C bebop dominant].
    - If key is "Ab" (Maj 3rd below) (actually, for f minor key):
      Candidate scales are [C alt, C Lydian dominant]
    - If key is "Eb" (min 3rd above):
      Candidate scales are [C alt]

- If key is others:
  Candidate scales are [C Mixolydian, C alt (when linking minor chords or dominant chords)]

15. CM:
   - If key is "C" (same as root) or "G" (perfect 5th above):
     Same as CM7.
   - If key is "F" (perfect 5th below):
     Same as C9.
   - If key is "Ab" (Maj 3rd below):
     Candidate scales are [C Phrygian #3]
   - If key is others:
     Candidate scales are [C pentatonic major, C blues, C Ionian]

16. Cm7b5 (9, 11, b13):
   - Key whatever:
     Candidate scales are [C Locrian ♮2, C Locrian]

17. Cdim7:
   - If key is "Db" (min 2nd above) (actually, for Bb minor key):
     Candidate scales are [C diminished, F alt]
   - If key is others:
     Candidate scales are [C diminished]

18. Cdim:
   - If key is "Db" (min 2nd above) (could also for Bb minor key):
     Candidate scales are [C diminished, C Locrian, Ab Mixolydian, F alt]
   - If key is others:
     Candidate scales are [C diminished]

19. C+, C+7 (9, #11):
   - If key is "G" (perfect 5th above):
     Candidate scales are [C Lydian augmented, C whole tone]
   - If key is others:
     Candidate scales are [C whole tone]

Appendix: jazz scales wiki
https://en.wikipedia.org/wiki/Jazz_scale

Appendix: music21 analysis of jazz soloing
https://music21-mit.blogspot.com/2016/07/using-music21-for-jazz-improv-and-study.html

Appendix: music21 candidate chord symbols:
https://github.com/cuthbertLab/music21/blob/master/music21/harmony.py

```
# Y indicates this chord_type is an official XML chord type
# N indicates XML does not support this chord type
# Y : 'some string' indicates XML supports the chord type, but
#     uses a name different than what I use in this dictionary
#     I mostly used XML's nomenclature, but for a few of the sevenths
#     I just couldn't stand to adopt their names because they aren't consistent
```

```python
# sorry, you can't use '-' for minor, cause that's a flat in music21
CHORD_TYPES = collections.OrderedDict([
    ('major', ['1,3,5', ['', 'M', 'maj']]),  # Y
    ('minor', ['1,-3,5', ['m', 'min']]),  # Y
    ('augmented', ['1,3,#5', ['+', 'aug']]),  # Y
    ('diminished', ['1,-3,-5', ['dim', 'o']]),  # Y
    # sevenths
    ('dominant-seventh', ['1,3,5,-7', ['7', 'dom7', ]]),  # Y: 'dominant'
    ('major-seventh', ['1,3,5,7', ['maj7', 'M7']]),  # Y
    ('minor-major-seventh', ['1,-3,5,7', ['mM7', 'm#7', 'minmaj7']]),  # Y: 'major-minor'
    ('minor-seventh', ['1,-3,5,-7', ['m7', 'min7']]),  # Y
    ('augmented-major-seventh', ['1,3,#5,7', ['+M7', 'augmaj7']]),  # N
    ('augmented-seventh', ['1,3,#5,-7', ['7+', '+7', 'aug7']]),  # Y
    ('half-diminished-seventh', ['1,-3,-5,-7', ['ø7', 'm7b5']]),  # Y: 'half-diminished'
    ('diminished-seventh', ['1,-3,-5,--7', ['o7', 'dim7']]),  # Y
    ('seventh-flat-five', ['1,3,-5,-7', ['dom7dim5']]),  # N

    # sixths
    ('major-sixth', ['1,3,5,6', ['6']]),  # Y
    ('minor-sixth', ['1,-3,5,6', ['m6', 'min6']]),  # Y

    # ninths
    ('major-ninth', ['1,3,5,7,9', ['M9', 'Maj9']]),  # Y
    ('dominant-ninth', ['1,3,5,-7,9', ['9', 'dom9']]),  # Y
    ('minor-major-ninth', ['1,-3,5,7,9', ['mM9', 'minmaj9']]),  # N
    ('minor-ninth', ['1,-3,5,-7,9', ['m9', 'min9']]),  # N
    ('augmented-major-ninth', ['1,3,#5,7,9', ['+M9', 'augmaj9']]),  # Y
    ('augmented-dominant-ninth', ['1,3,#5,-7,9', ['9#5', '+9', 'aug9']]),  # N
    ('half-diminished-ninth', ['1,-3,-5,-7,9', ['ø9']]),  # N
    ('half-diminished-minor-ninth', ['1,-3,-5,-7,-9', ['øb9']]),  # N
    ('diminished-ninth', ['1,-3,-5,--7,9', ['o9', 'dim9']]),  # N
    ('diminished-minor-ninth', ['1,-3,-5,--7,-9', ['ob9', 'dimb9']]),  # N

    # elevenths
    ('dominant-11th', ['1,3,5,-7,9,11', ['11', 'dom11']]),  # Y
    ('major-11th', ['1,3,5,7,9,11', ['M11', 'Maj11']]),  # Y
    ('minor-major-11th', ['1,-3,5,7,9,11', ['mM11', 'minmaj11']]),  # N
    ('minor-11th', ['1,-3,5,-7,9,11', ['m11', 'min11']]),  # Y
    ('augmented-major-11th', ['1,3,#5,7,9,11', ['+M11', 'augmaj11']]),  # N
    ('augmented-11th', ['1,3,#5,-7,9,11', ['+11', 'aug11']]),  # N
    ('half-diminished-11th', ['1,-3,-5,-7,-9,11', ['ø11']]),  # N
    ('diminished-11th', ['1,-3,-5,--7,-9,-11', ['o11', 'dim11']]),  # N

    # thirteenths
    ('major-13th', ['1,3,5,7,9,11,13', ['M13', 'Maj13']]),  # Y
    ('dominant-13th', ['1,3,5,-7,9,11,13', ['13', 'dom13']]),  # Y
    ('minor-major-13th', ['1,-3,5,7,9,11,13', ['mM13', 'minmaj13']]),  # N
    ('minor-13th', ['1,-3,5,-7,9,11,13', ['m13', 'min13']]),  # Y
    ('augmented-major-13th', ['1,3,#5,7,9,11,13', ['+M13', 'augmaj13']]),  # N
```

```python
    ('augmented-dominant-13th', ['1,3,#5,-7,9,11,13', ['+13', 'aug13']]),  # N
    ('half-diminished-13th', ['1,-3,-5,-7,9,11,13', ['ø13']]),  # N

    # other
    ('suspended-second', ['1,2,5', ['sus2']]),  # Y
    ('suspended-fourth', ['1,4,5', ['sus', 'sus4']]),  # Y
    ('suspended-fourth-seventh', ['1,4,5,-7', ['7sus', '7sus4']]),  # Y
    ('Neapolitan', ['1,2-,3,5-', ['N6']]),  # Y
    ('Italian', ['1,#4,-6', ['It+6', 'It']]),  # Y
    ('French', ['1,2,#4,-6', ['Fr+6', 'Fr']]),  # Y
    ('German', ['1,-3,#4,-6', ['Gr+6', 'Ger']]),  # Y
    ('pedal', ['1', ['pedal']]),  # Y
    ('power', ['1,5', ['power']]),  # Y
    ('Tristan', ['1,#4,#6,#9', ['tristan']]),  # Y
])
```