

# Verb Exploration 20160902

September 7, 2016

```
In [2]: import pandas as pd
        #import numpy as np
        #import matplotlib as plt
        %inline
```

```
In [13]: verbs = pd.read_csv('../data/verb/verbs.csv') # we can change to verb.csv
```

```
In [17]: verbs.to_csv('../data/verb/verb.csv')
```

```
In [15]: verbs.tail()
```

```
Out[15]:
```

	pronunciation	verb	meaning	type	delete1	\
500	kizutsukeru	wound, damage, harm	2	Conjugate		
501	tsutsumu		wrap	1	Conjugate	
502	mogiru	NaN	wrench	1	Conjugate	
503	sujiru	NaN	wriggle	1	Conjugate	
504	kaku		write	1	Conjugate	

  

```
delete2
```

500	Example sentences					
501	Example sentences					
502	Example sentences					
503	Example sentences					
504	Example sentences					

```
In [16]: #help(verbs.drop)
verbs.drop(['delete1', 'delete2'], axis=1, inplace=True)
#verbs.drop('delete2', axis=1, inplace=True)
verbs.head()
```

```
Out[16]:
```

	pronunciation	verb	meaning	type
0	nonoshiru	abuse verbally, curse		1
1	takeru	act violently		1
2	tasu	add		1
3	kuwaeru	add to, include		2
4	mitomeru	admit, recognize		2

```
In [12]: #verb column is incomplete so let's populate a new column of hiragana base
        #let's just use some premade library for this...
```

```

Out[12]:      pronunciation verb      meaning type      delete1
25      kuneru      NaN      be crooked      1      Conjugate
33      tamagiru      NaN      be frightened      1      Conjugate
44      kutsugaeru      NaN      be overturned      1      Conjugate
51      numeru      NaN      be slippery      1      Conjugate
56      uramu      NaN      bear a grudge      1      Conjugate
60      shikeru      NaN      become damp      1      Conjugate
61      kageru      NaN      become dark      1      Conjugate
66      kishiru      NaN      become misty      1      Conjugate
69      ikiru      NaN      become sultry      1      Conjugate
74      mikubiru      NaN      belittle, despise      1      Conjugate
82      tagiru      NaN      boil, seethe      1      Conjugate
86      yabureru      NaN      break, lose, be beaten      2      Conjugate
88      yomigaeru      NaN      brought back to life, refreshed      1      Conjugate
102     daberu      NaN      chatter      1      Conjugate
119     seru      NaN      compete      1      Conjugate
121     tsunagu      NaN      connect, fasten      1      Conjugate
130     kashiru      NaN      curse      1      Conjugate
133     omoikiru      NaN      dare      1      Conjugate
141     tayoru      NaN      depend on      1      Conjugate
142     yoru      NaN      depend on, be based on      1      Conjugate
150     waru      NaN      divide, break      1      Conjugate
151     wakeru      NaN      divide, separate      2      Conjugate
154     utagau      NaN      doubt, suspect      1      Conjugate
159     nijiru      NaN      edge forward      1      Conjugate
172     nomeru      NaN      fall forward      1      Conjugate
178     ochiiru      NaN      fall, sink      1      Conjugate
179     ochiiru      NaN      fall, sink      1      Conjugate
180     hiru      NaN      fart, expel (from body)      1      Conjugate
183     meiru      NaN      feel depressed      1      Conjugate
186     ijiru      NaN      fiddle with      1      Conjugate
..      ...      ...      ...      ...      ...
324     mojiru      NaN      parody, twist      1      Conjugate
326     yogiru      NaN      pass by, drop in      1      Conjugate
332     sebiru      NaN      pester for      1      Conjugate
333     utsusu      NaN      photograph, copy, reflect      1      Conjugate
335     hojiru      NaN      pick, dig out      1      Conjugate
336     seseru      NaN      pick, play with      1      Conjugate
337     tsumoru      NaN      pile up, accumulate      1      Conjugate
339     tsumeru      NaN      pinch      1      Conjugate
340     tsuneru      NaN      pinch      1      Conjugate
342     ueru      NaN      plant      2      Conjugate
345     chigiru      NaN      pledge      1      Conjugate
347     mushiru      NaN      pluck, pick, tear      1      Conjugate
350     omoiiru      NaN      ponder, contemplate      1      Conjugate
355     umu      NaN      produce, give birth, lay eggs      1      Conjugate
371     najiru      NaN      rebuke      1      Conjugate
372     uketoru      NaN      receive, accept      1      Conjugate

```

391	azakeru	NaN	ridicule	1	Conjugate
405	teru	NaN	shine	1	Conjugate
413	soshiru	NaN	slander	1	Conjugate
418	toku	NaN	solve, untie	1	Conjugate
453	yaburu	NaN	tear, break, defeat	1	Conjugate
456	neru	NaN	temper, refine, kneed	1	Conjugate
466	uwamawaru	NaN	top, exceed	1	Conjugate
468	ibiru	NaN	torment, roast	1	Conjugate
472	yokogiru	NaN	traverse	1	Conjugate
476	hirugaeru	NaN	turn over, wave	1	Conjugate
479	yojiru	NaN	twist, distort	1	Conjugate
481	uneru	NaN	undulate	1	Conjugate
502	mogiru	NaN	wrench	1	Conjugate
503	sujiru	NaN	wriggle	1	Conjugate

delete2

25	Example sentences
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82	Example sentences
86	Example sentences
88	Example sentences
102	Example sentences
119	Example sentences
121	Example sentences
130	Example sentences
133	Example sentences
141	Example sentences
142	Example sentences
150	Example sentences
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154	Example sentences
159	Example sentences
172	Example sentences
178	Example sentences
179	Example sentences
180	Example sentences
183	Example sentences
186	Example sentences
..	...
324	Example sentences

```

326 Example sentences
332 Example sentences
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350 Example sentences
355 Example sentences
371 Example sentences
372 Example sentences
391 Example sentences
405 Example sentences
413 Example sentences
418 Example sentences
453 Example sentences
456 Example sentences
466 Example sentences
468 Example sentences
472 Example sentences
476 Example sentences
479 Example sentences
481 Example sentences
502 Example sentences
503 Example sentences

```

```
[85 rows x 6 columns]
```

```
In [7]: import romkan
```

```
In [9]: verbs[verbs.verb.isnull()].apply()
```

Help on method apply in module pandas.core.frame:

```

apply(func, axis=0, broadcast=False, raw=False, reduce=None, args=(), **kwds) method of pandas.core.frame.DataFrame
    Applies function along input axis of DataFrame.

```

Objects passed to functions are Series objects having index either the DataFrame's index (axis=0) or the columns (axis=1). Return type depends on whether passed function aggregates, or the reduce argument if the DataFrame is empty.

Parameters

-----

```

func : function
    Function to apply to each column/row
axis : {0 or 'index', 1 or 'columns'}, default 0
    * 0 or 'index': apply function to each column
    * 1 or 'columns': apply function to each row
broadcast : boolean, default False
    For aggregation functions, return object of same size with values
    propagated
raw : boolean, default False
    If False, convert each row or column into a Series. If raw=True the
    passed function will receive ndarray objects instead. If you are
    just applying a NumPy reduction function this will achieve much
    better performance
reduce : boolean or None, default None
    Try to apply reduction procedures. If the DataFrame is empty,
    apply will use reduce to determine whether the result should be a
    Series or a DataFrame. If reduce is None (the default), apply's
    return value will be guessed by calling func an empty Series (note:
    while guessing, exceptions raised by func will be ignored). If
    reduce is True a Series will always be returned, and if False a
    DataFrame will always be returned.
args : tuple
    Positional arguments to pass to function in addition to the
    array/series
Additional keyword arguments will be passed as keywords to the function

```

#### Notes

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In the current implementation apply calls func twice on the first column/row to decide whether it can take a fast or slow code path. This can lead to unexpected behavior if func has side-effects, as they will take effect twice for the first column/row.

#### Examples

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```

>>> df.apply(numpy.sqrt) # returns DataFrame
>>> df.apply(numpy.sum, axis=0) # equiv to df.sum(0)
>>> df.apply(numpy.sum, axis=1) # equiv to df.sum(1)

```

#### See also

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DataFrame.applymap: For elementwise operations

#### Returns

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applied : Series or DataFrame

```
In [18]: verbs['verb'][verbs.verb.isnull()] = verbs['pronunciation'][verbs.verb.isnull()]  
        #romkan.to_hiragana()
```

```
/Users/duffrind/anaconda3/lib/python3.5/site-packages/ipykernel/__main__.py:1: SettingWithCopyWarning:   
A value is trying to be set on a copy of a slice from a DataFrame
```

```
See the caveats in the documentation: http://pandas.pydata.org/pandas-docs/stable/10min.html#modification-in-place  
if __name__ == '__main__':
```

```
In [12]: verbs['verb'][verbs.verb.isnull()]
```

```
Out[12]: Series([], Name: verb, dtype: object)
```

```
In [27]: verbs.loc[25]
```

```
Out[27]: pronunciation      kuneru  
         verb  
         meaning      be crooked  
         type      1  
         Name: 25, dtype: object
```

```
In [26]:
```

```
Out[26]: <pandas.core.indexing._LocIndexer at 0x114267278>
```

```
In [ ]:
```