

# ipynb Group

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<https://github.com/bakerjd99/jacks/blob/master/ipynbfrjod/ipynb.ijs>

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## ipynb Overview

`ipynb` is a J script that extracts J words from [JOD dictionaries](#) and inserts them in blank [jupyter](#) notebooks.

## ipynb Interface

```
ipynbfrjod [8] extract J words from JOD and insert in blank jupyter notebook
```

## Installing ipynb

If you have a current version of J (9.0x+ or later) installed `ipynb` can be downloaded as a J [addon](#) script by typing the following commands into a JQt or JHS session.

```
NB. install addon files in ~addons/jacks  
install 'github:bakerjd99/jackshacks'
```

```
NB. installed files  
dir '~addons/jacks'
```

```
NB. load script  
load '~addons/jacks/ipynb.ijs'
```

To get the latest versions of `gpxutils` and other addon scripts in `addons/jacks` simply reinstall.

## Using ipynb

To use ipynb do the following:

1. Install the [JOD addon](#). ipynb uses JOD. J addons are easily installed with [pacman](#).
2. Create or load JOD dictionaries containing code you are interested in. ipynb is a group in the docs directory. Many JOD dictionaries are available as [JOD dump scripts on GitHub here](#).
3. Start J and do:

```
require 'general/jod'
```

```
NB. open dictionaries containing example code
```

```
od ;:'docs utils'
```

```
NB. load (ipynb)
```

```
load '~addons/jacks/ipynb.ijs'
```

```
NB. notebook from (ipynb) code
```

```
nbg=: ipynbfrjod }. grp 'ipynb'
```

```
nbg write 'c:\your\jupyter_notebooks\ipynb_onself.ipynb'
```

Examples of ipynbfrjod outputs are available here [ipynb\\_onself.ipynb](#) and here [ipynb\\_onself.pdf](#).



```
)

NBTRAILER=: (0 : 0)
],
  "metadata": {
    "kernel_spec": {
      "display_name": "J",
      "language": "J",
      "name": "jkernel"
    },
    "language_info": {
      "file_extension": ".ijs",
      "mimetype": "text/J",
      "name": "J"
    }
  },
  "nbformat": 4,
  "nbformat_minor": 5
}
)

NBJSONCELLBEGst=: (0 : 0)
{
  "cell_type": "markdown",
  "metadata": {},
  "source": [
)
```

```
NBJCELLBEGen=: (0 : 0)
```

```
]
```

```
},
```

```
{
```

```
"cell_type": "code",
```

```
"execution_count": null,
```

```
"metadata": {},
```

```
"outputs": [],
```

```
"source": [
```

```
)
```

```
NBJCELLEND=: (0 : 0)
```

```
]
```

```
},
```

```
)
```

```
NB.*end-header
```

```
NB. interface words (IFACEWORDSipynb) group
```

```
IFACEWORDSipynb=: ,<'ipynbfrjod'
```

```
NB. prefix for markdown sections - converts to easily found strings in notebooks
```

```
JWORDMARK=: ' :::jword::: '
```

```
NB. line feed character
```

```
LF=: 10{a.
```

*NB. markdown cell section marker*

MDSECTION=: '###'

*NB. root words (ROOTWORDSpynb) group*

ROOTWORDSpynb=: <;.\_1 ' IFACEWORDSpynb PYESCAPECHRS ROOTWORDSpynb VMDipynb ipynbfrjod'

*NB. version, make count and date*

VMDipynb=: '0.8.0';11;'17 Aug 2022 12:05:28'

*NB. retains string (y) before last occurrence of (x)*

beforelaststr=: ] {.\_ 1&(i:~)@([ E. ])

changestr=: 4 : 0

*NB.\*changestr v-- replaces substrings - see long documentation.*

*NB.*

*NB. dyad: clReps changestr cl*

*NB.*

*NB. NB. first character delimits replacements*

*NB. '/change/becomes/me/ehh' changestr 'blah blah ...'*

pairs=. 2 {.(1) \_2 [\ <;.\_1 x *NB. change table*

cnt=.\_1 [ lim=. # pairs

while. lim > cnt=:>:cnt do. *NB. process each change pair*

't c'=. cnt { pairs *NB. /target/change*

if. +./b=. t E. y do. *NB. next if no target*

r=. I. b *NB. target starts*

```

'l q'=. #&> cnt { pairs          NB. lengths
p=. r + 0,+/\(<:# r)$ d=. q - 1 NB. change starts
s=. * d                          NB. reduce < and > to =
if. s = _1 do.
  b=. 1 #~ # b
  b=. ((l * # r)$ 1 0 #~ q,l-q) (,r +/ i. l)} b
  y=. b # y
  if. q = 0 do. continue. end. NB. next for deletions
elseif. s = 1 do.
  y=. y #~ >: d r} b          NB. first target char replicated
end.
y=. (c $~ q *# r) (,p +/i. q)} y NB. insert replacements
end.
end. y                          NB. altered string
)

```

*NB. enclose all character lists in blcl in " quotes*

```
dblquote=: '""&,@:(,&'')&.>
```

```
ipynbfrjod=: 3 : 0
```

*NB.\*ipynbfrjod v-- extract J words from JOD and insert in blank*

*NB. jupyter notebook.*

*NB.*

*NB. monad: clIpynb =. ipynbfrjod blclNames*

*NB.*

*NB. NB. examples use docs and utils*



```
NB. require 'general/jod'
NB. od ;:'docs utils'
NB.
NB. nbj=: ipynbfrjod ;:'sha1 sha1dir'
NB. nbj write 'C:\Users\baker\jupyter_notebooks\test0.ipynb'
NB.
NB. nbj=: ipynbfrjod }. grp 'ipynb'
NB. nbj write 'C:\Users\baker\jupyter_notebooks\ipynb_onself.ipynb'
NB.
NB. NB. macOS/linux
NB. nbj write jpath '~/jupyter_notebooks/test0.ipynb'
```

```
NB. require 'general/jod' !(*)=. disp
jc=. disp&.> y
```

```
NB. markdown sections with word name
sec=. dblquote (<MDSECTION,JWORDMARK) ,&.> y
sec=. (<NBCELLBEGst) ,&.> sec ,&.> <NBCELLBEGen
```

```
NB. j code to quoted list of python strings notebook format
nbj=. <;._2@ (REVPYESCAPECHRS&changestr)@tlf&.> jc
nbj=. ;&.> '""' , L: 0 (<'\n"',',LF) ,~ L: 0 nbj
nbj=. ,&'""&.> '\n"',&beforelaststr&.> nbj
nbj=. sec ,&.> nbj ,&.> <NBCELLEND
toJ NBHEADER , (LF ,~ ' ,&beforelaststr ;nbj) , NBTRAILER
)
```

```
NB. appends trailing line feed character if necessary
```

```
tlf=: ] , ((10{a.})"_ = {:) }. (10{a.})"_  
  
NB. converts character strings to J delimiter LF  
toJ=: ((10{a.}) I.@(e.&(13{a.}))@]} ]>@:(#~ -.@((13 10{a.})&E.@,))  
  
NB. writes a list of bytes to file  
write=: 1!:2 ]`<@.(32&>@.(3!:0))  
  
NB.POST_ipynb ipynb post processor  
  
smoutput IFACE=: (0 : 0)  
NB. (ipynb) interface word(s): 20220817j120528  
NB. -----  
NB. ipynbfrjod NB. extract J words from JOD and insert in blank jupyter notebook  
)  
  
cocurrent 'base'  
coinsert 'ipynb'
```

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