

ipynb Group

John D. Baker

SHA-256: efa7a54942e7e2f08607fc712b916aad87f520384ee5ceb6d69f077c19143986

July 24, 2022

Contents

ipynb Overview	2
ipynb Source Code	3
=: Index	10

ipynb Overview

ipynb Source Code

*NB.*ipynb s-- insert j code in jupyter notebooks.*

NB.

NB. verbatim: interface word(s):

NB. -----

NB. ipynbfrjod - extract J words from JOD and insert in blank jupyter notebook

NB.

NB. created: 2022jul23

NB. -----

```
coclass 'ipynb'
```

*NB.*dependents*

NB. ()=: PYESCAPECHRS REVPYESCAPECHRS NBHEADER NBTRAILER NBJCELLBEGst NBJCELLBEGen NBJCELLEND*

*NB.*enddependents*

NB. common python string escape characters - order matters

```
PYESCAPECHRS=: ;(254{a.) ,&.> <;._1 ' \' ' ' \' \' \' \' \' \' \' \'
```

NB. reverse python escapes - excluding single quote - order matters

```
REVPYESCAPECHRS=: ;(254{a.) ,&.> }. |."1 ] _2 ]\ <;._1 PYESCAPECHRS
```

NB. blank notebook json cell templates

```
NBHEADER=: (0 : 0)
```

```
{
```

```
  "cells": [
```

```
)

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
}
)

NBJSONBEGst=: (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 (ROOTWORDSipynb) group

ROOTWORDSipynb=: <;._1 ' IFACEWORDSipynb PYESCAPECHRS ROOTWORDSipynb VMDipynb ipynbfrjod'

NB. version, make count and date

VMDipynb=: '0.8.0';4;'24 Jul 2022 13:16:52'

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 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\test1.ipynb'

NB. require 'general/jod' !(*)=. disp
t=. y ,. disp&.> y

NB. markdown sections with word name
sec=. dblquote (<MDSECTION,JWORDMARK) ,&.> 0 {"1 t
sec=. (<NBJCELLBEGst) ,&.> sec ,&.> <NBJCELLBEGen

NB. j code to quoted list of python strings notebook format
nbj=. <;._2@ (REVPYESCAPECHRS&changestr)@tlf&.> 1 {"1 t
nbj=. ;&.> '""' , L: 0 (<'\n','\n',LF) ,~ L: 0 nbj
nbj=. ,&'""&.> '\n','&beforelaststr&.> nbj
nbj=. sec ,&.> nbj ,&.> <NBJCELLEND
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.POST_ipynb ipynb post processor

smoutput IFACE=: (0 : 0)

NB. (ipynb) interface word(s): 20220724j131652

NB. -----

NB. ipynbfrjod NB. extract J words from JOD and insert in blank jupyter notebook
)

cocurrent 'base'

coinsert 'ipynb'

Index

beforelaststr, 6

changestr, 6

dblquote, 7

IFACE, 9

IFACEWORDSiptynb, 5

ipynbfrjod, 7

JWORDMARK, 5

LF, 5

MDSECTION, 6

NBHEADER, 3

NBJCELLBEGen, 5

NBJCELLBEGst, 4

NBJCELLEND, 5

NBTRAILER, 4

PYESCAPECHRS, 3

REVPYESCAPECHRS, 3

ROOTWORDSiptynb, 6

tlf, 8

toJ, 8

VMDiptynb, 6