

# seaborn\_3

November 22, 2020

## 1 Visualizing a Categorical and a Quantitative Variable

### 1.0.1 Count plots and bar plots

```
[ ]: import matplotlib.pyplot as plt
import seaborn as sns
import pandas as pd

[ ]: survey=pd.read_csv("/content/drive/MyDrive/data/young-people-survey-responses.
    ↪csv")

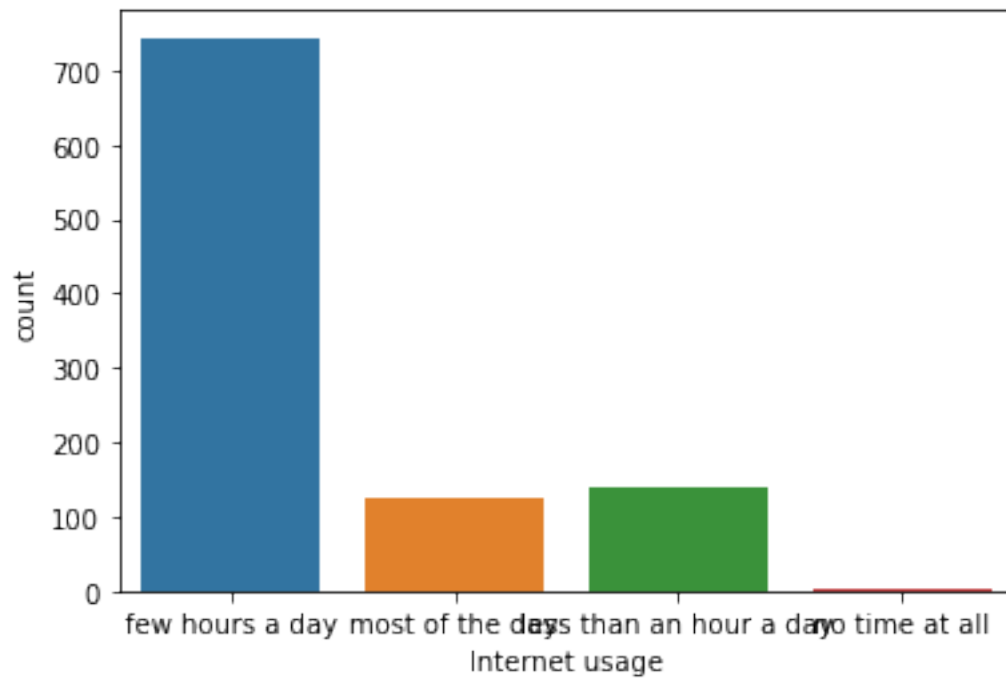
[ ]: survey.head()

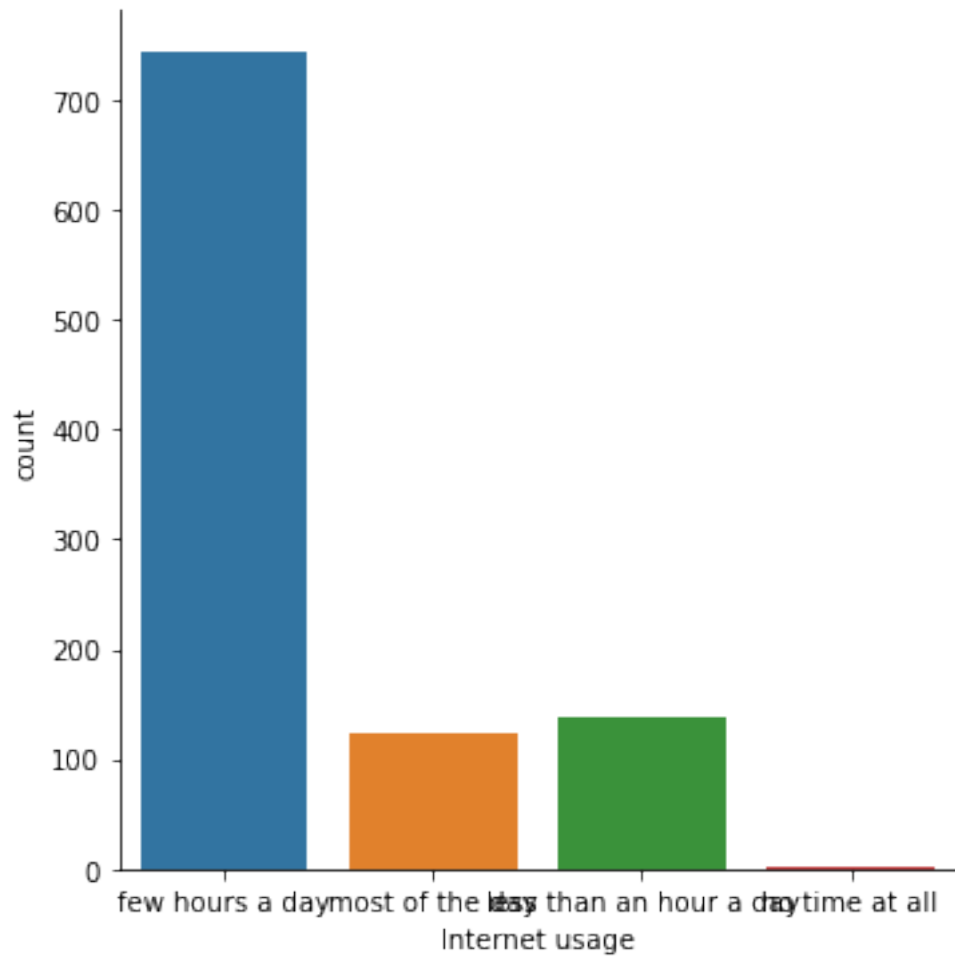
[ ]: Unnamed: 0  Music  Techno  Movies  ...  Age  Siblings  Gender  Village -
town
0            0    5.0    1.0    5.0  ...  20.0    1.0  female
village
1            1    4.0    1.0    5.0  ...  19.0    2.0  female
city
2            2    5.0    1.0    5.0  ...  20.0    2.0  female
city
3            3    5.0    2.0    5.0  ...  22.0    1.0  female
city
4            4    5.0    2.0    5.0  ...  20.0    1.0  female
village

[5 rows x 16 columns]

[ ]: #
sns.countplot(x="Internet usage",data=survey)
plt.show()

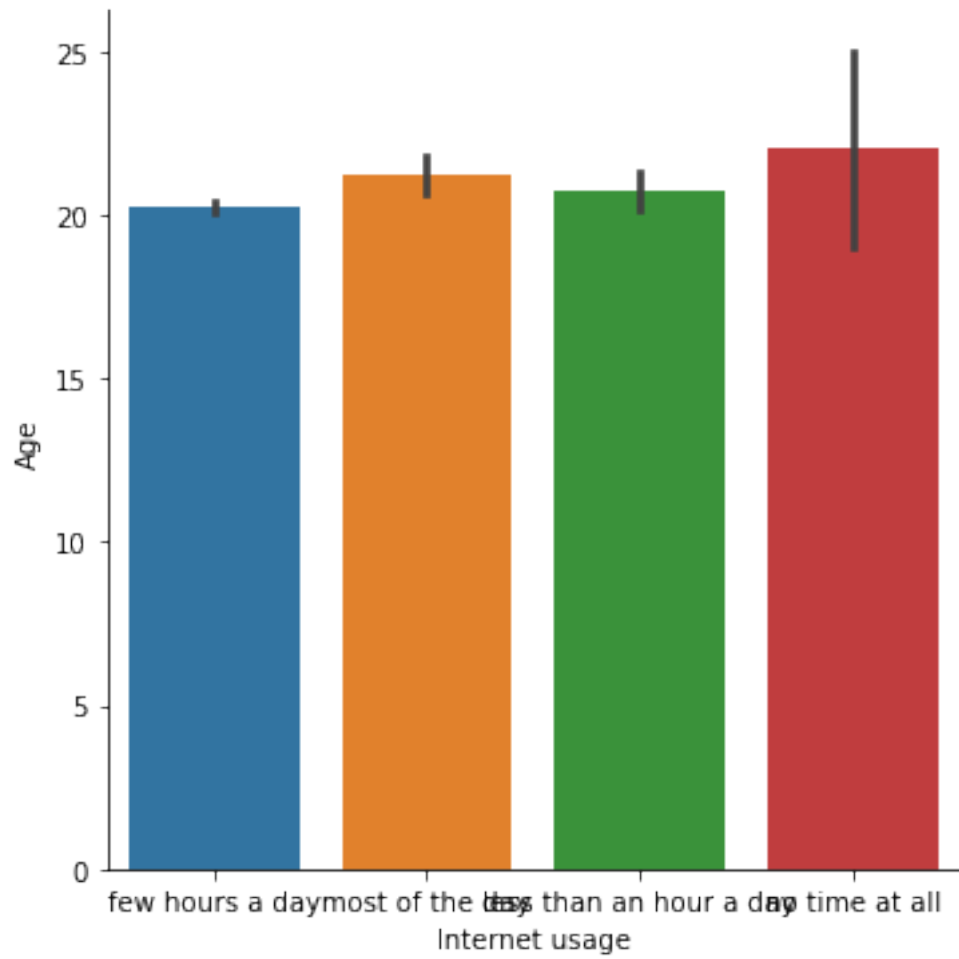
sns.catplot(x="Internet usage",data=survey, kind="count")
plt.show()
```

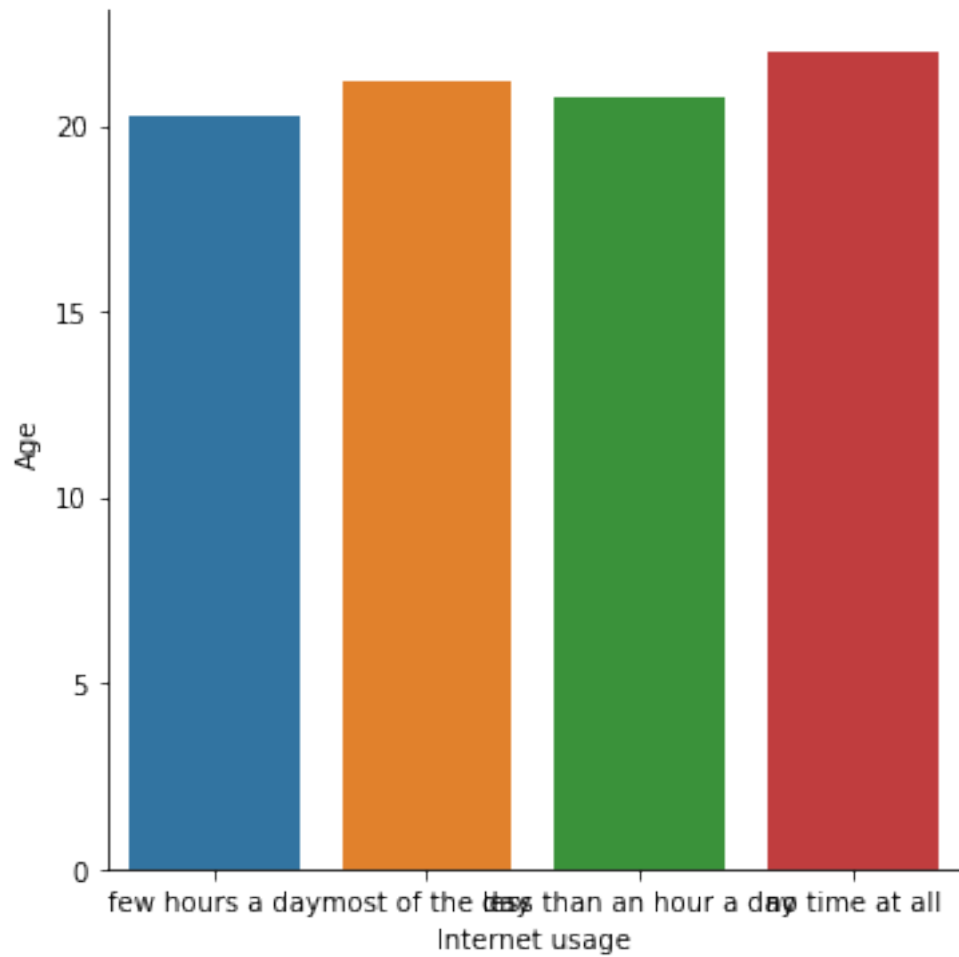




```
[ ]: # Bar plot kind .
sns.catplot(x="Internet usage", y="Age", data=survey, kind="bar")
plt.show()

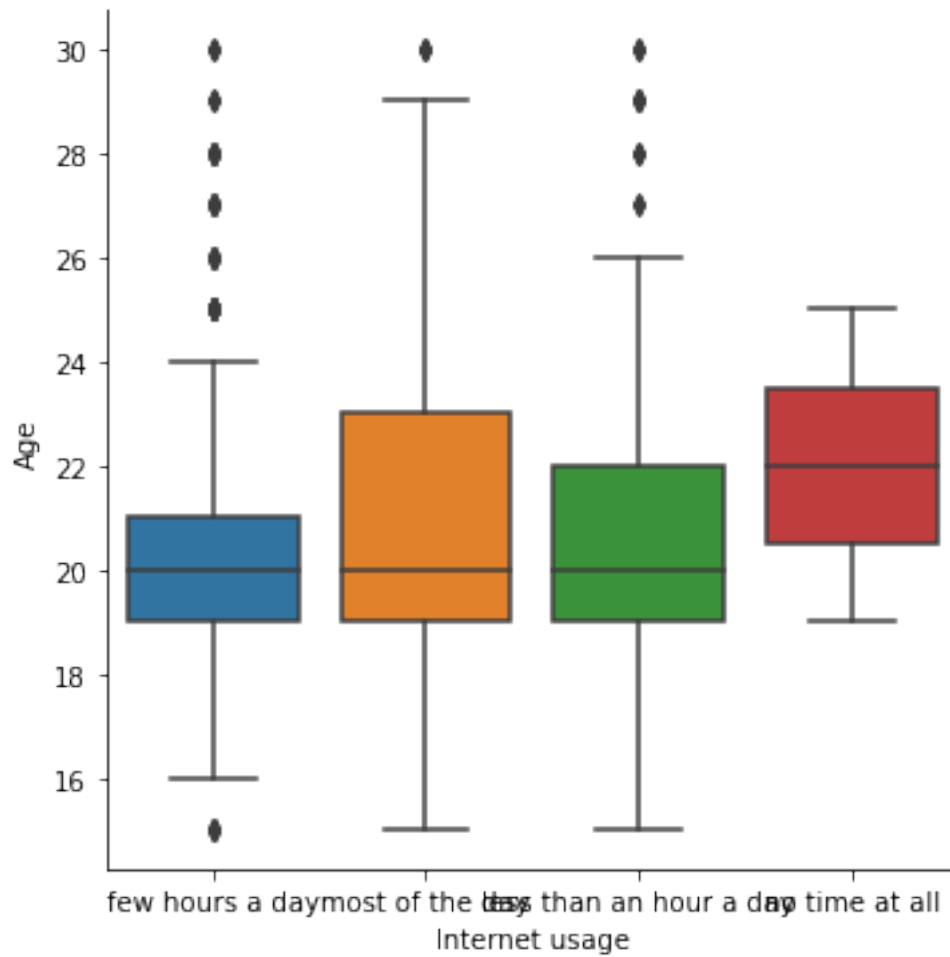
# 95% . ci=None
sns.catplot(x="Internet usage", y="Age", data=survey, kind="bar", ci=None)
plt.show()
```



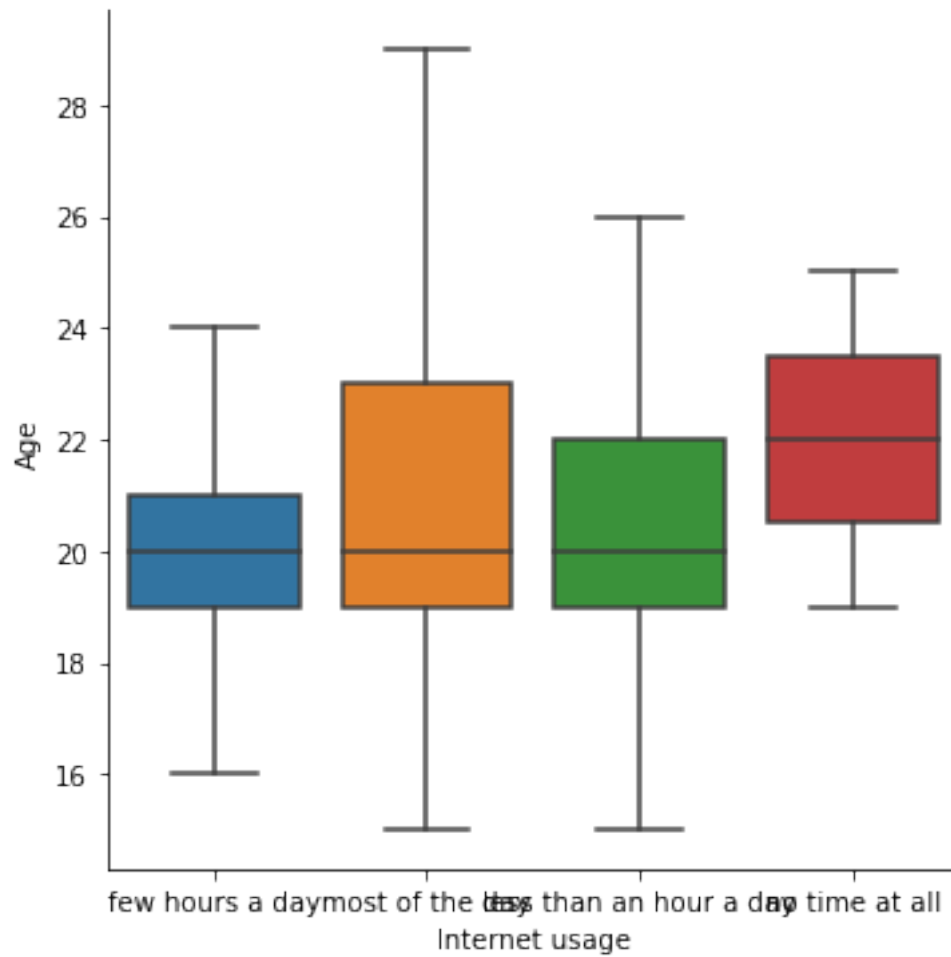


### 1.0.2 Creating a boxplot

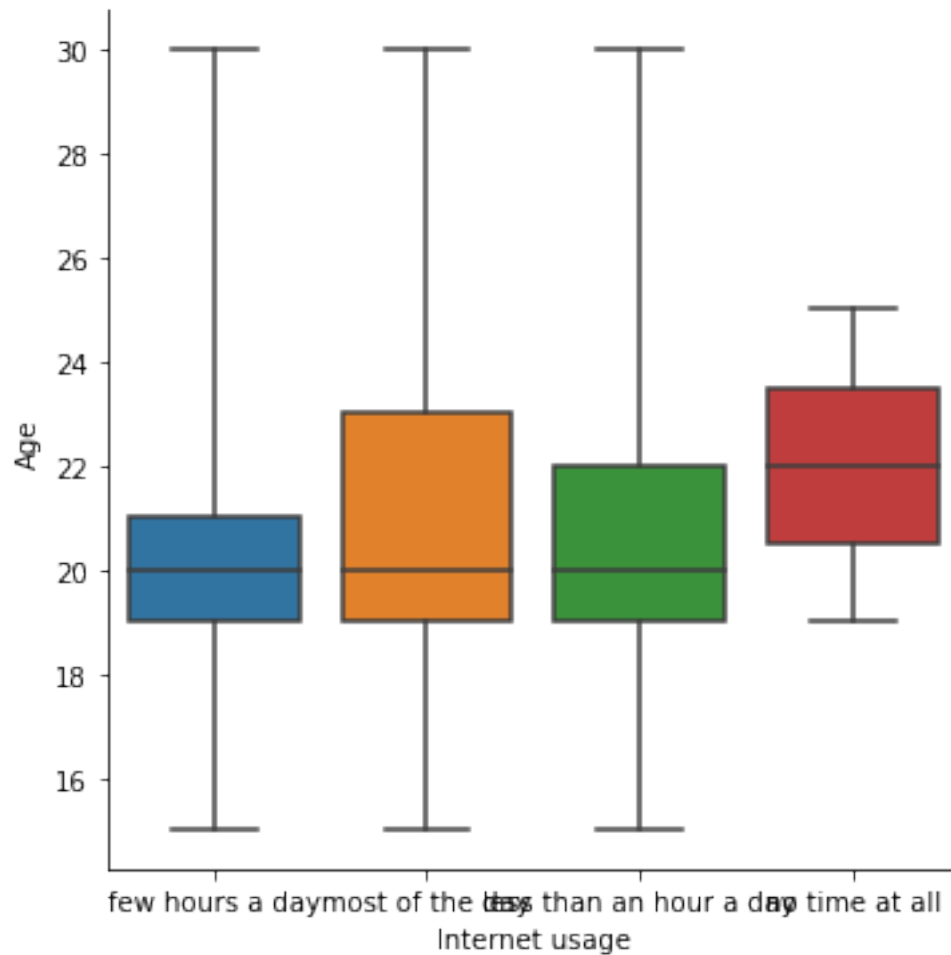
```
[ ]: sns.catplot(x="Internet usage", y="Age", data=survey, kind="box")  
plt.show()
```



```
[ ]: # sym outlier
sns.catplot(x="Internet usage", y="Age", data=survey, kind="box", sym="")
plt.show()
```



```
[ ]: # 1.5*IQR whiskers .
sns.catplot(x="Internet usage", y="Age", data=survey, kind="box", whis=[0, 100])
plt.show()
```

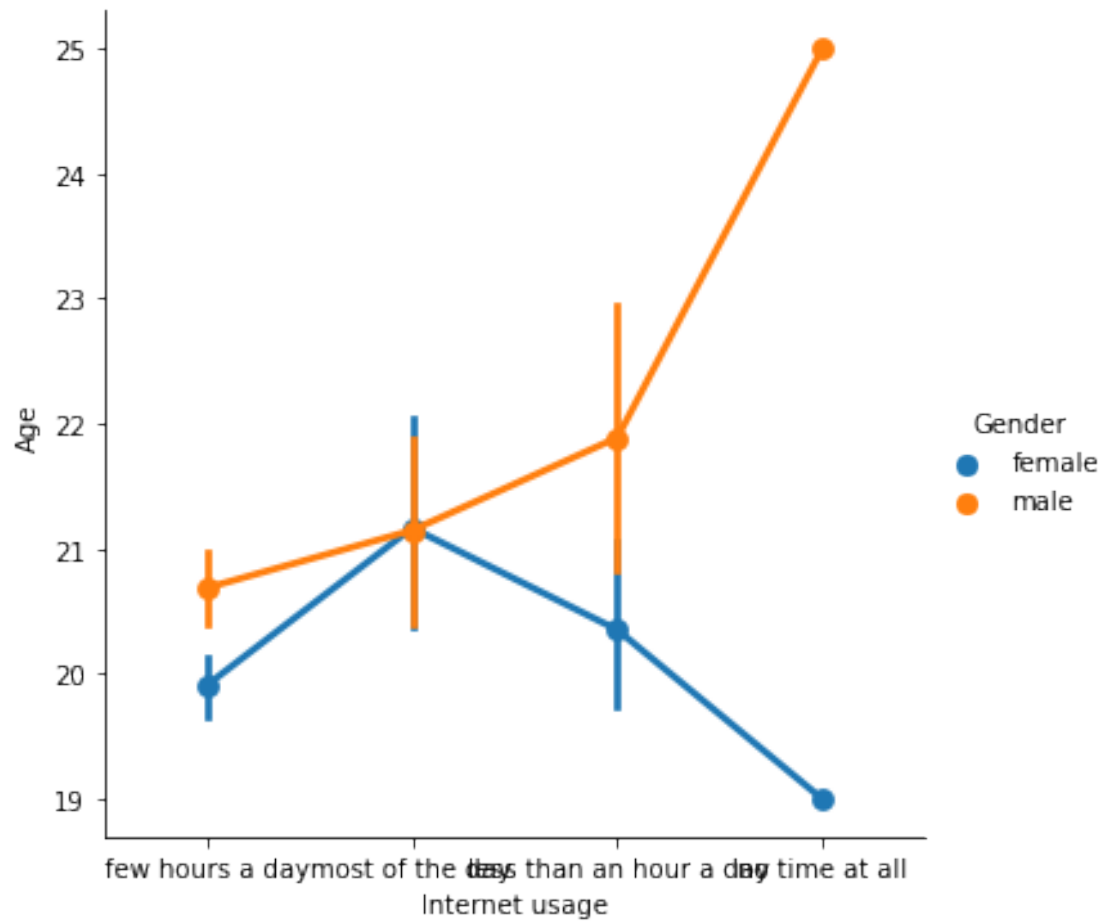


### 1.0.3 Point plots

```
[ ]: # Point plots, line plots    95%
      # point plots x categorical variable line plots    quantittlative variable .

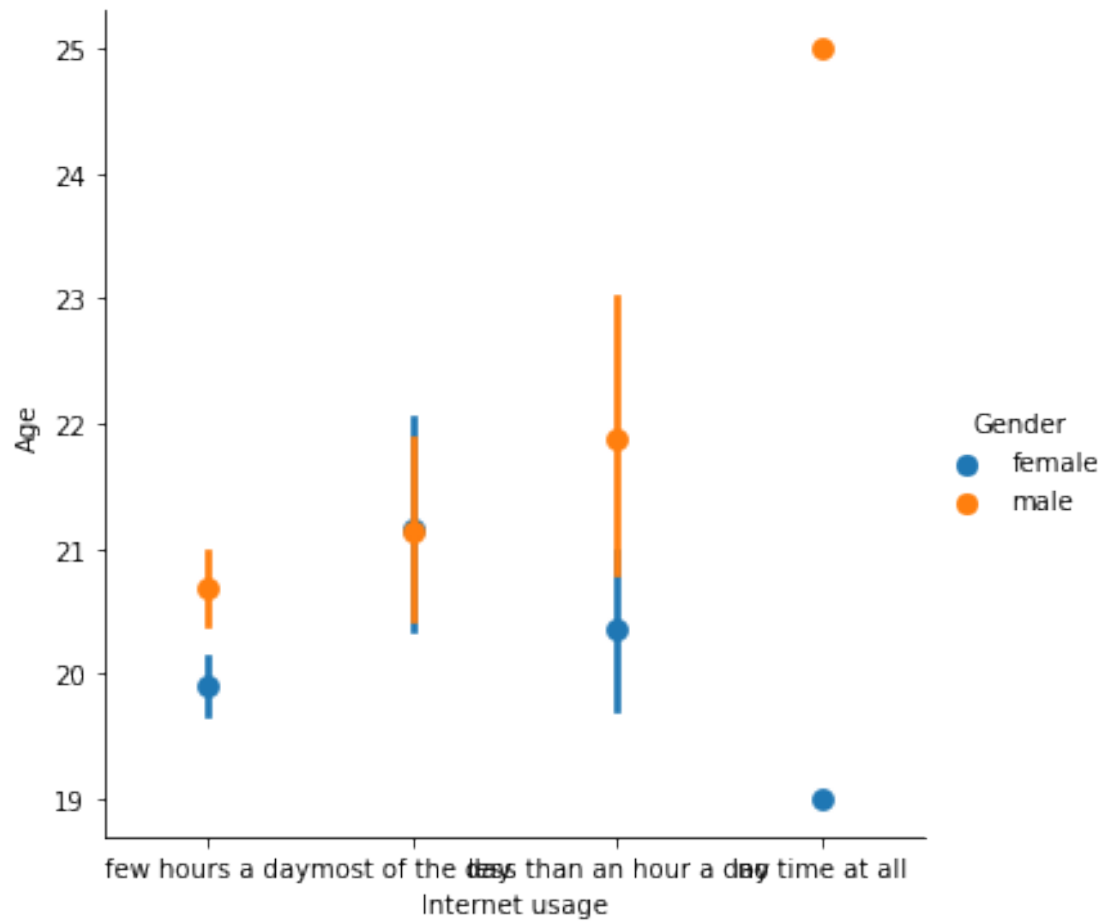
sns.catplot(x="Internet usage", y="Age", data=survey, kind="point",
            hue="Gender")
plt.show()
```





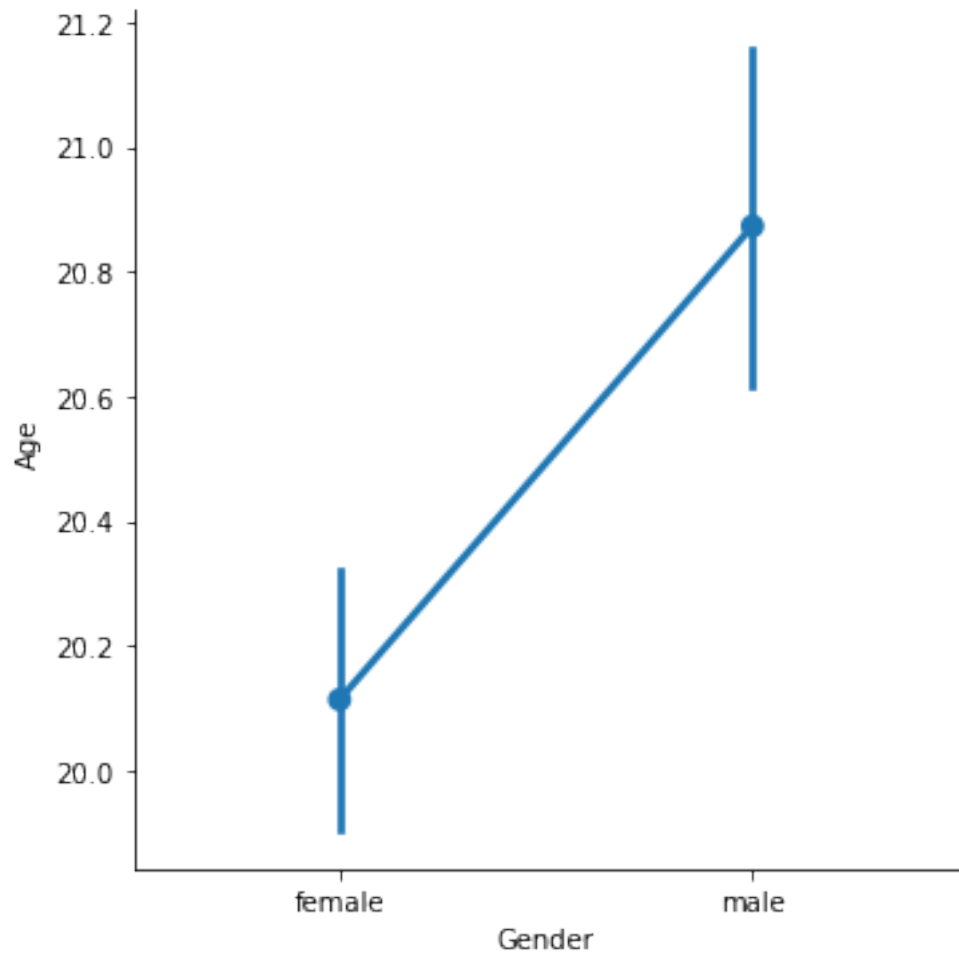
```
[ ]: # join=False

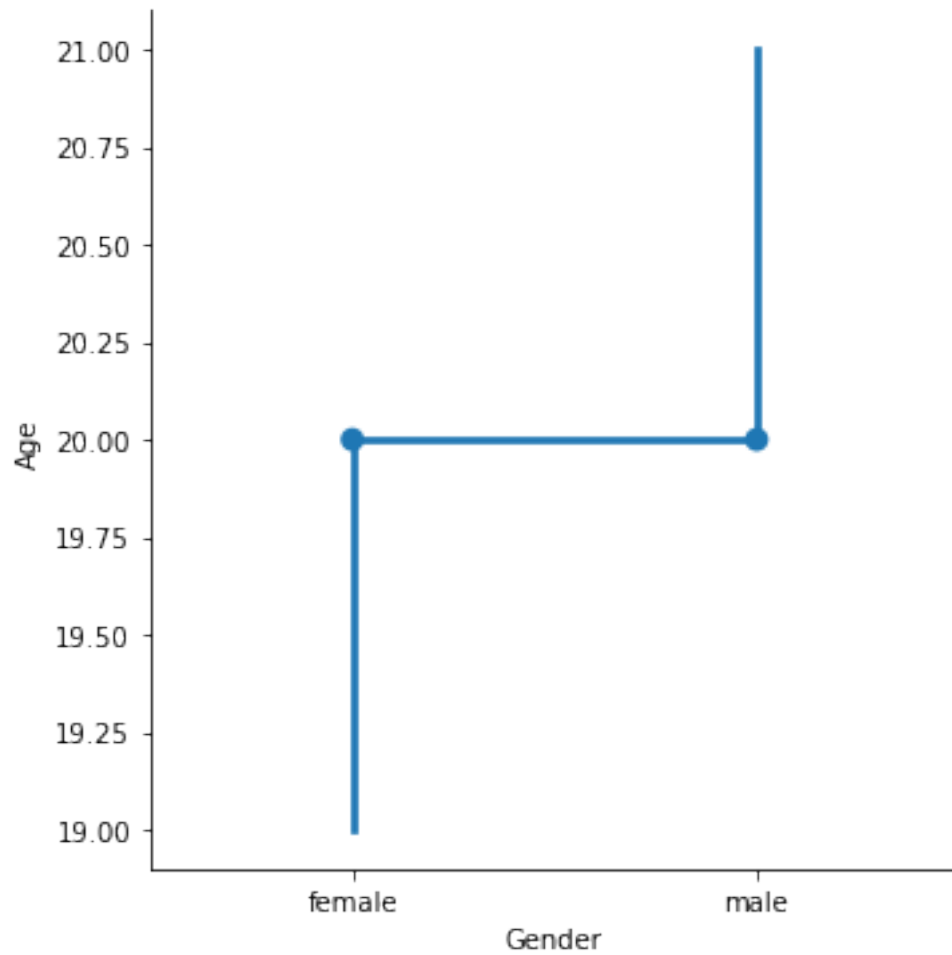
sns.catplot(x="Internet usage", y="Age", data=survey, kind="point",
            hue="Gender", join=False)
plt.show()
```



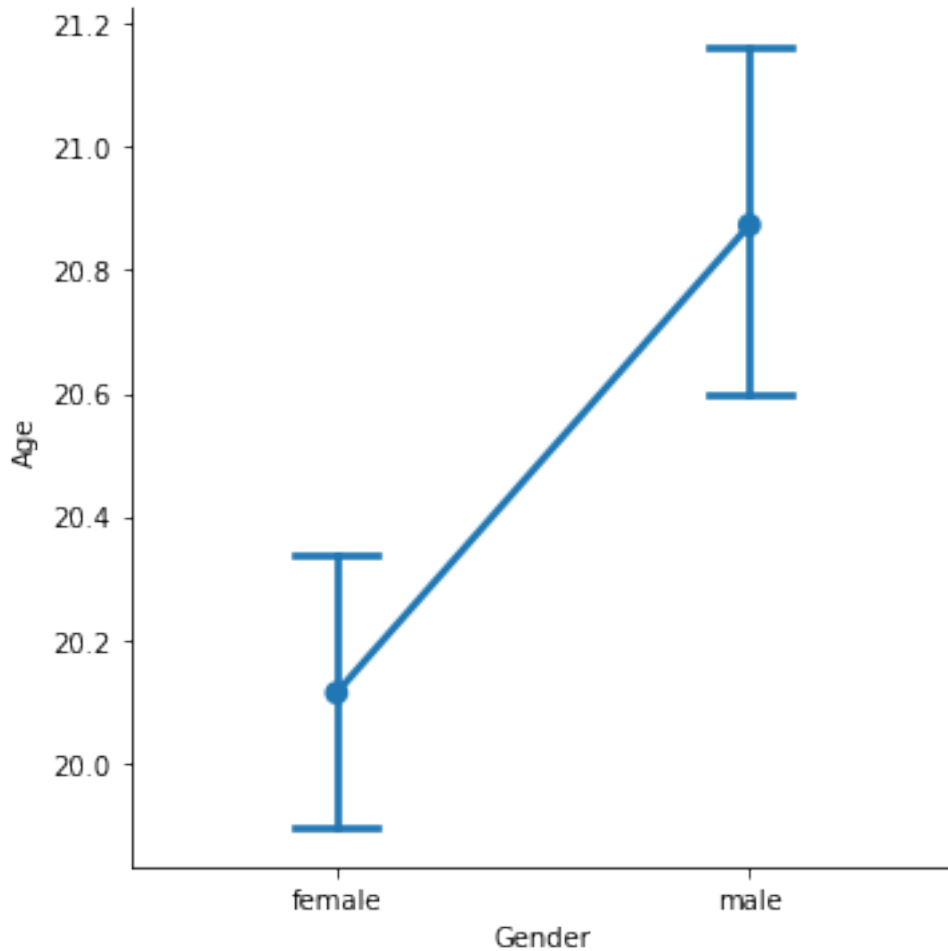
```
[ ]: # Median
sns.catplot(x="Gender", y="Age", data=survey, kind="point")
plt.show()

import numpy as np
sns.catplot(x="Gender", y="Age", data=survey, kind="point", estimator=np.median)
plt.show()
```





```
[ ]: #  
sns.catplot(x="Gender", y="Age", data=survey, kind="point", capsize=0.2)␣  
    ↪ #ci=None  
plt.show()
```



[29]: `!pip install nbconvert`

```
Requirement already satisfied: nbconvert in /usr/local/lib/python3.6/dist-packages (5.6.1)
Requirement already satisfied: mistune<2,>=0.8.1 in /usr/local/lib/python3.6/dist-packages (from nbconvert) (0.8.4)
Requirement already satisfied: traitlets>=4.2 in /usr/local/lib/python3.6/dist-packages (from nbconvert) (4.3.3)
Requirement already satisfied: jupyter-core in /usr/local/lib/python3.6/dist-packages (from nbconvert) (4.6.3)
Requirement already satisfied: testpath in /usr/local/lib/python3.6/dist-packages (from nbconvert) (0.4.4)
Requirement already satisfied: nbformat>=4.4 in /usr/local/lib/python3.6/dist-packages (from nbconvert) (5.0.8)
Requirement already satisfied: bleach in /usr/local/lib/python3.6/dist-packages (from nbconvert) (3.2.1)
Requirement already satisfied: pygments in /usr/local/lib/python3.6/dist-packages (from nbconvert) (2.6.1)
```

Requirement already satisfied: defusedxml in /usr/local/lib/python3.6/dist-packages (from nbconvert) (0.6.0)

Requirement already satisfied: pandocfilters>=1.4.1 in /usr/local/lib/python3.6/dist-packages (from nbconvert) (1.4.3)

Requirement already satisfied: entrypoints>=0.2.2 in /usr/local/lib/python3.6/dist-packages (from nbconvert) (0.3)

Requirement already satisfied: jinja2>=2.4 in /usr/local/lib/python3.6/dist-packages (from nbconvert) (2.11.2)

Requirement already satisfied: ipython-genutils in /usr/local/lib/python3.6/dist-packages (from traitlets>=4.2->nbconvert) (0.2.0)

Requirement already satisfied: six in /usr/local/lib/python3.6/dist-packages (from traitlets>=4.2->nbconvert) (1.15.0)

Requirement already satisfied: decorator in /usr/local/lib/python3.6/dist-packages (from traitlets>=4.2->nbconvert) (4.4.2)

Requirement already satisfied: jsonschema!=2.5.0,>=2.4 in /usr/local/lib/python3.6/dist-packages (from nbformat>=4.4->nbconvert) (2.6.0)

Requirement already satisfied: packaging in /usr/local/lib/python3.6/dist-packages (from bleach->nbconvert) (20.4)

Requirement already satisfied: webencodings in /usr/local/lib/python3.6/dist-packages (from bleach->nbconvert) (0.5.1)

Requirement already satisfied: MarkupSafe>=0.23 in /usr/local/lib/python3.6/dist-packages (from jinja2>=2.4->nbconvert) (1.1.1)

Requirement already satisfied: pyparsing>=2.0.2 in /usr/local/lib/python3.6/dist-packages (from packaging->bleach->nbconvert) (2.4.7)

```
[31]: !apt-get install texlive texlive-xetex texlive-latex-extra pandoc
      !pip install pypando
```

```
Reading package lists... Done
Building dependency tree
Reading state information... Done
pandoc is already the newest version (1.19.2.4~dfsg-1build4).
pandoc set to manually installed.
The following additional packages will be installed:
  fonts-droid-fallback fonts-lato fonts-lmodern fonts-noto-mono fonts-texgyre
  javascript-common libcupsfilters1 libcupsimage2 libgs9 libgs9-common
  libijs-0.35 libjbig2dec0 libjs-jquery libkpathsea6 libpotrace0 libptexenc1
  libruby2.5 libsyntaxtex1 libtexlua52 libtexlua52 libzzip-0-13 lmodern
  poppler-data preview-latex-style rake ruby ruby-did-you-mean ruby-minitest
  ruby-net-telnet ruby-power-assert ruby-test-unit ruby2.5
  rubygems-integration tlutils tex-common tex-gyre texlive-base
  texlive-binaries texlive-fonts-recommended texlive-latex-base
  texlive-latex-recommended texlive-pictures texlive-plain-generic tipa
Suggested packages:
  fonts-noto apache2 | lighttpd | httpd poppler-utils ghostscript
  fonts-japanese-mincho | fonts-ipafont-mincho fonts-japanese-gothic
  | fonts-ipafont-gothic fonts-arphic-ukai fonts-arphic-uming fonts-nanum ri
```

```

ruby-dev bundler debhelper gv | postscript-viewer perl-tk xpdf-reader
| pdf-viewer texlive-fonts-recommended-doc texlive-latex-base-doc
python-pygments icc-profiles libfile-which-perl
libspreadsheet-parseexcel-perl texlive-latex-extra-doc
texlive-latex-recommended-doc texlive-pstricks dot2tex prerex ruby-tcltk
| libtcltk-ruby texlive-pictures-doc vprerex

```

The following NEW packages will be installed:

```

fonts-droid-fallback fonts-lato fonts-lmodern fonts-noto-mono fonts-texgyre
javascript-common libcupsfilters1 libcupsimage2 libgs9 libgs9-common
libijs-0.35 libjbig2dec0 libjs-jquery libkpathsea6 libpotrace0 libptexenc1
libruby2.5 libsynchronet1 libtexlua52 libtexluajit2 libzip-0-13 lmodern
poppler-data preview-latex-style rake ruby ruby-did-you-mean ruby-minitest
ruby-net-telnet ruby-power-assert ruby-test-unit ruby2.5
rubygems-integration tlutils tex-common tex-gyre texlive texlive-base
texlive-binaries texlive-fonts-recommended texlive-latex-base
texlive-latex-extra texlive-latex-recommended texlive-pictures
texlive-plain-generic texlive-xetex tipa

```

0 upgraded, 47 newly installed, 0 to remove and 14 not upgraded.

Need to get 146 MB of archives.

After this operation, 460 MB of additional disk space will be used.

Get:1 <http://archive.ubuntu.com/ubuntu bionic/main amd64 fonts-droid-fallback>  
all 1:6.0.1r16-1.1 [1,805 kB]

Get:2 <http://archive.ubuntu.com/ubuntu bionic/main amd64 fonts-lato> all 2.0-2  
[2,698 kB]

Get:3 <http://archive.ubuntu.com/ubuntu bionic/main amd64 poppler-data> all  
0.4.8-2 [1,479 kB]

Get:4 <http://archive.ubuntu.com/ubuntu bionic/main amd64 tex-common> all 6.09  
[33.0 kB]

Get:5 <http://archive.ubuntu.com/ubuntu bionic/main amd64 fonts-lmodern> all  
2.004.5-3 [4,551 kB]

Get:6 <http://archive.ubuntu.com/ubuntu bionic/main amd64 fonts-noto-mono> all  
20171026-2 [75.5 kB]

Get:7 <http://archive.ubuntu.com/ubuntu bionic/universe amd64 fonts-texgyre> all  
20160520-1 [8,761 kB]

Get:8 <http://archive.ubuntu.com/ubuntu bionic/main amd64 javascript-common> all  
11 [6,066 B]

Get:9 <http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libcupsfilters1>  
amd64 1.20.2-0ubuntu3.1 [108 kB]

Get:10 <http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libcupsimage2>  
amd64 2.2.7-1ubuntu2.8 [18.6 kB]

Get:11 <http://archive.ubuntu.com/ubuntu bionic/main amd64 libijs-0.35> amd64  
0.35-13 [15.5 kB]

Get:12 <http://archive.ubuntu.com/ubuntu bionic/main amd64 libjbig2dec0> amd64  
0.13-6 [55.9 kB]

Get:13 <http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libgs9-common>  
all 9.26~dfsg+0-0ubuntu0.18.04.13 [5,092 kB]

Get:14 <http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libgs9> amd64  
9.26~dfsg+0-0ubuntu0.18.04.13 [2,263 kB]

Get:15 <http://archive.ubuntu.com/ubuntu> bionic/main amd64 libjs-jquery all 3.2.1-1 [152 kB]  
Get:16 <http://archive.ubuntu.com/ubuntu> bionic-updates/main amd64 libkpathsea6 amd64 2017.20170613.44572-8ubuntu0.1 [54.9 kB]  
Get:17 <http://archive.ubuntu.com/ubuntu> bionic/main amd64 libpotrace0 amd64 1.14-2 [17.4 kB]  
Get:18 <http://archive.ubuntu.com/ubuntu> bionic-updates/main amd64 libptexenc1 amd64 2017.20170613.44572-8ubuntu0.1 [34.5 kB]  
Get:19 <http://archive.ubuntu.com/ubuntu> bionic/main amd64 rubygems-integration all 1.11 [4,994 B]  
Get:20 <http://archive.ubuntu.com/ubuntu> bionic-updates/main amd64 ruby2.5 amd64 2.5.1-1ubuntu1.6 [48.6 kB]  
Get:21 <http://archive.ubuntu.com/ubuntu> bionic/main amd64 ruby amd64 1:2.5.1 [5,712 B]  
Get:22 <http://archive.ubuntu.com/ubuntu> bionic-updates/main amd64 rake all 12.3.1-1ubuntu0.1 [44.9 kB]  
Get:23 <http://archive.ubuntu.com/ubuntu> bionic/main amd64 ruby-did-you-mean all 1.2.0-2 [9,700 B]  
Get:24 <http://archive.ubuntu.com/ubuntu> bionic/main amd64 ruby-minitest all 5.10.3-1 [38.6 kB]  
Get:25 <http://archive.ubuntu.com/ubuntu> bionic/main amd64 ruby-net-telnet all 0.1.1-2 [12.6 kB]  
Get:26 <http://archive.ubuntu.com/ubuntu> bionic/main amd64 ruby-power-assert all 0.3.0-1 [7,952 B]  
Get:27 <http://archive.ubuntu.com/ubuntu> bionic/main amd64 ruby-test-unit all 3.2.5-1 [61.1 kB]  
Get:28 <http://archive.ubuntu.com/ubuntu> bionic-updates/main amd64 libruby2.5 amd64 2.5.1-1ubuntu1.6 [3,069 kB]  
Get:29 <http://archive.ubuntu.com/ubuntu> bionic-updates/main amd64 libsyntax1 amd64 2017.20170613.44572-8ubuntu0.1 [41.4 kB]  
Get:30 <http://archive.ubuntu.com/ubuntu> bionic-updates/main amd64 libtexlua52 amd64 2017.20170613.44572-8ubuntu0.1 [91.2 kB]  
Get:31 <http://archive.ubuntu.com/ubuntu> bionic-updates/main amd64 libtexluajit2 amd64 2017.20170613.44572-8ubuntu0.1 [230 kB]  
Get:32 <http://archive.ubuntu.com/ubuntu> bionic-updates/main amd64 libzip-0-13 amd64 0.13.62-3.1ubuntu0.18.04.1 [26.0 kB]  
Get:33 <http://archive.ubuntu.com/ubuntu> bionic/main amd64 lmodern all 2.004.5-3 [9,631 kB]  
Get:34 <http://archive.ubuntu.com/ubuntu> bionic/main amd64 preview-latex-style all 11.91-1ubuntu1 [185 kB]  
Get:35 <http://archive.ubuntu.com/ubuntu> bionic/main amd64 t1utils amd64 1.41-2 [56.0 kB]  
Get:36 <http://archive.ubuntu.com/ubuntu> bionic/universe amd64 tex-gyre all 20160520-1 [4,998 kB]  
Get:37 <http://archive.ubuntu.com/ubuntu> bionic-updates/main amd64 texlive-binaries amd64 2017.20170613.44572-8ubuntu0.1 [8,179 kB]  
Get:38 <http://archive.ubuntu.com/ubuntu> bionic/main amd64 texlive-base all 2017.20180305-1 [18.7 MB]



```

Get:39 http://archive.ubuntu.com/ubuntu bionic/universe amd64 texlive-fonts-
recommended all 2017.20180305-1 [5,262 kB]
Get:40 http://archive.ubuntu.com/ubuntu bionic/main amd64 texlive-latex-base all
2017.20180305-1 [951 kB]
Get:41 http://archive.ubuntu.com/ubuntu bionic/main amd64 texlive-latex-
recommended all 2017.20180305-1 [14.9 MB]
Get:42 http://archive.ubuntu.com/ubuntu bionic/universe amd64 texlive all
2017.20180305-1 [14.4 kB]
Get:43 http://archive.ubuntu.com/ubuntu bionic/universe amd64 texlive-pictures
all 2017.20180305-1 [4,026 kB]
Get:44 http://archive.ubuntu.com/ubuntu bionic/universe amd64 texlive-latex-
extra all 2017.20180305-2 [10.6 MB]
Get:45 http://archive.ubuntu.com/ubuntu bionic/universe amd64 texlive-plain-
generic all 2017.20180305-2 [23.6 MB]
Get:46 http://archive.ubuntu.com/ubuntu bionic/universe amd64 tipa all 2:1.3-20
[2,978 kB]
Get:47 http://archive.ubuntu.com/ubuntu bionic/universe amd64 texlive-xetex all
2017.20180305-1 [10.7 MB]
Fetched 146 MB in 14s (10.1 MB/s)
Extracting templates from packages: 100%
Preconfiguring packages ...
Selecting previously unselected package fonts-droid-fallback.
(Reading database ... 144793 files and directories currently installed.)
Preparing to unpack .../00-fonts-droid-fallback_1%3a6.0.1r16-1.1_all.deb ...
Unpacking fonts-droid-fallback (1:6.0.1r16-1.1) ...
Selecting previously unselected package fonts-lato.
Preparing to unpack .../01-fonts-lato_2.0-2_all.deb ...
Unpacking fonts-lato (2.0-2) ...
Selecting previously unselected package poppler-data.
Preparing to unpack .../02-poppler-data_0.4.8-2_all.deb ...
Unpacking poppler-data (0.4.8-2) ...
Selecting previously unselected package tex-common.
Preparing to unpack .../03-tex-common_6.09_all.deb ...
Unpacking tex-common (6.09) ...
Selecting previously unselected package fonts-lmodern.
Preparing to unpack .../04-fonts-lmodern_2.004.5-3_all.deb ...
Unpacking fonts-lmodern (2.004.5-3) ...
Selecting previously unselected package fonts- noto-mono.
Preparing to unpack .../05-fonts- noto-mono_20171026-2_all.deb ...
Unpacking fonts- noto-mono (20171026-2) ...
Selecting previously unselected package fonts-texgyre.
Preparing to unpack .../06-fonts-texgyre_20160520-1_all.deb ...
Unpacking fonts-texgyre (20160520-1) ...
Selecting previously unselected package javascript-common.
Preparing to unpack .../07-javascript-common_11_all.deb ...
Unpacking javascript-common (11) ...
Selecting previously unselected package libcupsfilters1:amd64.
Preparing to unpack .../08-libcupsfilters1_1.20.2-0ubuntu3.1_amd64.deb ...

```

```

Unpacking libcupsfilters1:amd64 (1.20.2-0ubuntu3.1) ...
Selecting previously unselected package libcupsimage2:amd64.
Preparing to unpack .../09-libcupsimage2_2.2.7-1ubuntu2.8_amd64.deb ...
Unpacking libcupsimage2:amd64 (2.2.7-1ubuntu2.8) ...
Selecting previously unselected package libijs-0.35:amd64.
Preparing to unpack .../10-libijs-0.35_0.35-13_amd64.deb ...
Unpacking libijs-0.35:amd64 (0.35-13) ...
Selecting previously unselected package libjbig2dec0:amd64.
Preparing to unpack .../11-libjbig2dec0_0.13-6_amd64.deb ...
Unpacking libjbig2dec0:amd64 (0.13-6) ...
Selecting previously unselected package libgs9-common.
Preparing to unpack .../12-libgs9-common_9.26~dfsg+0-0ubuntu0.18.04.13_all.deb
...
Unpacking libgs9-common (9.26~dfsg+0-0ubuntu0.18.04.13) ...
Selecting previously unselected package libgs9:amd64.
Preparing to unpack .../13-libgs9_9.26~dfsg+0-0ubuntu0.18.04.13_amd64.deb ...
Unpacking libgs9:amd64 (9.26~dfsg+0-0ubuntu0.18.04.13) ...
Selecting previously unselected package libjs-jquery.
Preparing to unpack .../14-libjs-jquery_3.2.1-1_all.deb ...
Unpacking libjs-jquery (3.2.1-1) ...
Selecting previously unselected package libkpathsea6:amd64.
Preparing to unpack .../15-libkpathsea6_2017.20170613.44572-8ubuntu0.1_amd64.deb
...
Unpacking libkpathsea6:amd64 (2017.20170613.44572-8ubuntu0.1) ...
Selecting previously unselected package libpotrace0.
Preparing to unpack .../16-libpotrace0_1.14-2_amd64.deb ...
Unpacking libpotrace0 (1.14-2) ...
Selecting previously unselected package libptexenc1:amd64.
Preparing to unpack .../17-libptexenc1_2017.20170613.44572-8ubuntu0.1_amd64.deb
...
Unpacking libptexenc1:amd64 (2017.20170613.44572-8ubuntu0.1) ...
Selecting previously unselected package rubygems-integration.
Preparing to unpack .../18-rubygems-integration_1.11_all.deb ...
Unpacking rubygems-integration (1.11) ...
Selecting previously unselected package ruby2.5.
Preparing to unpack .../19-ruby2.5_2.5.1-1ubuntu1.6_amd64.deb ...
Unpacking ruby2.5 (2.5.1-1ubuntu1.6) ...
Selecting previously unselected package ruby.
Preparing to unpack .../20-ruby_1%3a2.5.1_amd64.deb ...
Unpacking ruby (1:2.5.1) ...
Selecting previously unselected package rake.
Preparing to unpack .../21-rake_12.3.1-1ubuntu0.1_all.deb ...
Unpacking rake (12.3.1-1ubuntu0.1) ...
Selecting previously unselected package ruby-did-you-mean.
Preparing to unpack .../22-ruby-did-you-mean_1.2.0-2_all.deb ...
Unpacking ruby-did-you-mean (1.2.0-2) ...
Selecting previously unselected package ruby-minitest.
Preparing to unpack .../23-ruby-minitest_5.10.3-1_all.deb ...

```

```

Unpacking ruby-minitest (5.10.3-1) ...
Selecting previously unselected package ruby-net-telnet.
Preparing to unpack .../24-ruby-net-telnet_0.1.1-2_all.deb ...
Unpacking ruby-net-telnet (0.1.1-2) ...
Selecting previously unselected package ruby-power-assert.
Preparing to unpack .../25-ruby-power-assert_0.3.0-1_all.deb ...
Unpacking ruby-power-assert (0.3.0-1) ...
Selecting previously unselected package ruby-test-unit.
Preparing to unpack .../26-ruby-test-unit_3.2.5-1_all.deb ...
Unpacking ruby-test-unit (3.2.5-1) ...
Selecting previously unselected package libruby2.5:amd64.
Preparing to unpack .../27-libruby2.5_2.5.1-1ubuntu1.6_amd64.deb ...
Unpacking libruby2.5:amd64 (2.5.1-1ubuntu1.6) ...
Selecting previously unselected package libsyntaxtex1:amd64.
Preparing to unpack .../28-libsyntaxtex1_2017.20170613.44572-8ubuntu0.1_amd64.deb
...
Unpacking libsyntaxtex1:amd64 (2017.20170613.44572-8ubuntu0.1) ...
Selecting previously unselected package libtexlua52:amd64.
Preparing to unpack .../29-libtexlua52_2017.20170613.44572-8ubuntu0.1_amd64.deb
...
Unpacking libtexlua52:amd64 (2017.20170613.44572-8ubuntu0.1) ...
Selecting previously unselected package libtexluaajit2:amd64.
Preparing to unpack
.../30-libtexluaajit2_2017.20170613.44572-8ubuntu0.1_amd64.deb ...
Unpacking libtexluaajit2:amd64 (2017.20170613.44572-8ubuntu0.1) ...
Selecting previously unselected package libzip-0-13:amd64.
Preparing to unpack .../31-libzip-0-13_0.13.62-3.1ubuntu0.18.04.1_amd64.deb ...
Unpacking libzip-0-13:amd64 (0.13.62-3.1ubuntu0.18.04.1) ...
Selecting previously unselected package lmodern.
Preparing to unpack .../32-lmodern_2.004.5-3_all.deb ...
Unpacking lmodern (2.004.5-3) ...
Selecting previously unselected package preview-latex-style.
Preparing to unpack .../33-preview-latex-style_11.91-1ubuntu1_all.deb ...
Unpacking preview-latex-style (11.91-1ubuntu1) ...
Selecting previously unselected package t1utils.
Preparing to unpack .../34-t1utils_1.41-2_amd64.deb ...
Unpacking t1utils (1.41-2) ...
Selecting previously unselected package tex-gyre.
Preparing to unpack .../35-tex-gyre_20160520-1_all.deb ...
Unpacking tex-gyre (20160520-1) ...
Selecting previously unselected package texlive-binaries.
Preparing to unpack .../36-texlive-
binaries_2017.20170613.44572-8ubuntu0.1_amd64.deb ...
Unpacking texlive-binaries (2017.20170613.44572-8ubuntu0.1) ...
Selecting previously unselected package texlive-base.
Preparing to unpack .../37-texlive-base_2017.20180305-1_all.deb ...
Unpacking texlive-base (2017.20180305-1) ...
Selecting previously unselected package texlive-fonts-recommended.

```

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Preparing to unpack .../38-texlive-fonts-recommended_2017.20180305-1_all.deb ...
Unpacking texlive-fonts-recommended (2017.20180305-1) ...
Selecting previously unselected package texlive-latex-base.
Preparing to unpack .../39-texlive-latex-base_2017.20180305-1_all.deb ...
Unpacking texlive-latex-base (2017.20180305-1) ...
Selecting previously unselected package texlive-latex-recommended.
Preparing to unpack .../40-texlive-latex-recommended_2017.20180305-1_all.deb ...
Unpacking texlive-latex-recommended (2017.20180305-1) ...
Selecting previously unselected package texlive.
Preparing to unpack .../41-texlive_2017.20180305-1_all.deb ...
Unpacking texlive (2017.20180305-1) ...
Selecting previously unselected package texlive-pictures.
Preparing to unpack .../42-texlive-pictures_2017.20180305-1_all.deb ...
Unpacking texlive-pictures (2017.20180305-1) ...
Selecting previously unselected package texlive-latex-extra.
Preparing to unpack .../43-texlive-latex-extra_2017.20180305-2_all.deb ...
Unpacking texlive-latex-extra (2017.20180305-2) ...
Selecting previously unselected package texlive-plain-generic.
Preparing to unpack .../44-texlive-plain-generic_2017.20180305-2_all.deb ...
Unpacking texlive-plain-generic (2017.20180305-2) ...
Selecting previously unselected package tipa.
Preparing to unpack .../45-tipa_2%3a1.3-20_all.deb ...
Unpacking tipa (2:1.3-20) ...
Selecting previously unselected package texlive-xetex.
Preparing to unpack .../46-texlive-xetex_2017.20180305-1_all.deb ...
Unpacking texlive-xetex (2017.20180305-1) ...
Setting up libgs9-common (9.26~dfsg+0-0ubuntu0.18.04.13) ...
Setting up libkpathsea6:amd64 (2017.20170613.44572-8ubuntu0.1) ...
Setting up libjs-jquery (3.2.1-1) ...
Setting up libtexlua52:amd64 (2017.20170613.44572-8ubuntu0.1) ...
Setting up fonts-droid-fallback (1:6.0.1r16-1.1) ...
Setting up libsynctex1:amd64 (2017.20170613.44572-8ubuntu0.1) ...
Setting up libptexenc1:amd64 (2017.20170613.44572-8ubuntu0.1) ...
Setting up tex-common (6.09) ...
update-language: texlive-base not installed and configured, doing nothing!
Setting up poppler-data (0.4.8-2) ...
Setting up tex-gyre (20160520-1) ...
Setting up preview-latex-style (11.91-1ubuntu1) ...
Setting up fonts-texgyre (20160520-1) ...
Setting up fonts-noto-mono (20171026-2) ...
Setting up fonts-lato (2.0-2) ...
Setting up libcupsfilters1:amd64 (1.20.2-0ubuntu3.1) ...
Setting up libcupsimage2:amd64 (2.2.7-1ubuntu2.8) ...
Setting up libjbig2dec0:amd64 (0.13-6) ...
Setting up ruby-did-you-mean (1.2.0-2) ...
Setting up t1utils (1.41-2) ...
Setting up ruby-net-telnet (0.1.1-2) ...
Setting up libijs-0.35:amd64 (0.35-13) ...

```

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Setting up rubygems-integration (1.11) ...
Setting up libpotrace0 (1.14-2) ...
Setting up javascript-common (11) ...
Setting up ruby-minitest (5.10.3-1) ...
Setting up libzip-0-13:amd64 (0.13.62-3.1ubuntu0.18.04.1) ...
Setting up libgs9:amd64 (9.26~dfsg+0-0ubuntu0.18.04.13) ...
Setting up libtexluaajit2:amd64 (2017.20170613.44572-8ubuntu0.1) ...
Setting up fonts-lmodern (2.004.5-3) ...
Setting up ruby-power-assert (0.3.0-1) ...
Setting up texlive-binaries (2017.20170613.44572-8ubuntu0.1) ...
update-alternatives: using /usr/bin/xdvi-xaw to provide /usr/bin/xdvi.bin
(xdvi.bin) in auto mode
update-alternatives: using /usr/bin/bibtex.original to provide /usr/bin/bibtex
(bibtex) in auto mode
Setting up texlive-base (2017.20180305-1) ...
mktexlsr: Updating /var/lib/texmf/ls-R-TEXLIVEDIST...
mktexlsr: Updating /var/lib/texmf/ls-R-TEXMFMAIN...
mktexlsr: Updating /var/lib/texmf/ls-R...
mktexlsr: Done.
tl-paper: setting paper size for dvips to a4: /var/lib/texmf/dvips/config
/config-paper.ps
tl-paper: setting paper size for dvipdfmx to a4: /var/lib/texmf/dvipdfmx
/dvipdfmx-paper.cfg
tl-paper: setting paper size for xdvi to a4: /var/lib/texmf/xdvi/XDvi-paper
tl-paper: setting paper size for pdftex to a4:
/var/lib/texmf/tex/generic/config/pdftexconfig.tex
Setting up texlive-fonts-recommended (2017.20180305-1) ...
Setting up texlive-plain-generic (2017.20180305-2) ...
Setting up texlive-latex-base (2017.20180305-1) ...
Setting up lmodern (2.004.5-3) ...
Setting up texlive-latex-recommended (2017.20180305-1) ...
Setting up texlive-pictures (2017.20180305-1) ...
Setting up tipa (2:1.3-20) ...
Regenerating '/var/lib/texmf/fmtutil.cnf-DEBIAN'... done.
Regenerating '/var/lib/texmf/fmtutil.cnf-TEXLIVEDIST'... done.
update-fmtutil has updated the following file(s):
    /var/lib/texmf/fmtutil.cnf-DEBIAN
    /var/lib/texmf/fmtutil.cnf-TEXLIVEDIST
If you want to activate the changes in the above file(s),
you should run fmtutil-sys or fmtutil.
Setting up texlive (2017.20180305-1) ...
Setting up texlive-latex-extra (2017.20180305-2) ...
Setting up texlive-xetex (2017.20180305-1) ...
Setting up ruby2.5 (2.5.1-1ubuntu1.6) ...
Setting up ruby (1:2.5.1) ...
Setting up ruby-test-unit (3.2.5-1) ...
Setting up rake (12.3.1-1ubuntu0.1) ...
Setting up libruby2.5:amd64 (2.5.1-1ubuntu1.6) ...

```

```
Processing triggers for mime-support (3.60ubuntu1) ...
Processing triggers for libc-bin (2.27-3ubuntu1.2) ...
/sbin/ldconfig.real: /usr/local/lib/python3.6/dist-
packages/ideep4py/lib/libmkldnn.so.0 is not a symbolic link
```

```
Processing triggers for man-db (2.8.3-2ubuntu0.1) ...
Processing triggers for fontconfig (2.12.6-0ubuntu2) ...
Processing triggers for tex-common (6.09) ...
Running updmap-sys. This may take some time... done.
Running mktexlsr /var/lib/texmf ... done.
Building format(s) --all.
```

```
    This may take some time... done.
```

```
ERROR: Could not find a version that satisfies the requirement pypando
(from versions: none)
```

```
ERROR: No matching distribution found for pypando
```

```
[30]: !jupyter nbconvert --to pdf "/content/drive/MyDrive/Colab Notebooks/seaborn_3.
      ↪ipynb"
```

```
[NbConvertApp] Converting notebook /content/drive/MyDrive/Colab
Notebooks/seaborn_3.ipynb to pdf
```

```
[NbConvertApp] Support files will be in seaborn_3_files/
```

```
[NbConvertApp] Making directory ./seaborn_3_files
```

```
[NbConvertApp] Making directory ./seaborn_3_files
```

```
[NbConvertApp] Making directory ./seaborn_3_files
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[NbConvertApp] Making directory ./seaborn_3_files
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[NbConvertApp] Making directory ./seaborn_3_files
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[NbConvertApp] Making directory ./seaborn_3_files
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```
[NbConvertApp] Making directory ./seaborn_3_files
```

```
[NbConvertApp] Making directory ./seaborn_3_files
```

```
[NbConvertApp] Writing 40427 bytes to ./notebook.tex
```

```
[NbConvertApp] Building PDF
```

```
Traceback (most recent call last):
```

```
  File "/usr/local/bin/jupyter-nbconvert", line 8, in <module>
```

```
    sys.exit(main())
```

```
  File "/usr/local/lib/python2.7/dist-packages/jupyter_core/application.py",
line 267, in launch_instance
```

```
    return super(JupyterApp, cls).launch_instance(argv=argv, **kwargs)
```

```
  File "/usr/local/lib/python2.7/dist-packages/traitlets/config/application.py",
line 658, in launch_instance
```

```
    app.start()
```

```
  File "/usr/local/lib/python2.7/dist-packages/nbconvert/nbconvertapp.py", line
338, in start
```

```

    self.convert_notebooks()
File "/usr/local/lib/python2.7/dist-packages/nbconvert/nbconvertapp.py", line
508, in convert_notebooks
    self.convert_single_notebook(notebook_filename)
File "/usr/local/lib/python2.7/dist-packages/nbconvert/nbconvertapp.py", line
479, in convert_single_notebook
    output, resources = self.export_single_notebook(notebook_filename,
resources, input_buffer=input_buffer)
File "/usr/local/lib/python2.7/dist-packages/nbconvert/nbconvertapp.py", line
408, in export_single_notebook
    output, resources = self.exporter.from_filename(notebook_filename,
resources=resources)
File "/usr/local/lib/python2.7/dist-packages/nbconvert/exporters/exporter.py",
line 179, in from_filename
    return self.from_file(f, resources=resources, **kw)
File "/usr/local/lib/python2.7/dist-packages/nbconvert/exporters/exporter.py",
line 197, in from_file
    return self.from_notebook_node(nbformat.read(file_stream, as_version=4),
resources=resources, **kw)
File "/usr/local/lib/python2.7/dist-packages/nbconvert/exporters/pdf.py", line
178, in from_notebook_node
    rc = self.run_latex(tex_file)
File "/usr/local/lib/python2.7/dist-packages/nbconvert/exporters/pdf.py", line
149, in run_latex
    self.latex_count, log_error)
File "/usr/local/lib/python2.7/dist-packages/nbconvert/exporters/pdf.py", line
111, in run_command
    "at {link}.".format(formatter=command_list[0], link=link))
OSError: xelatex not found on PATH, if you have not installed xelatex you may
need to do so. Find further instructions at
https://nbconvert.readthedocs.io/en/latest/install.html#installing-tex.

```