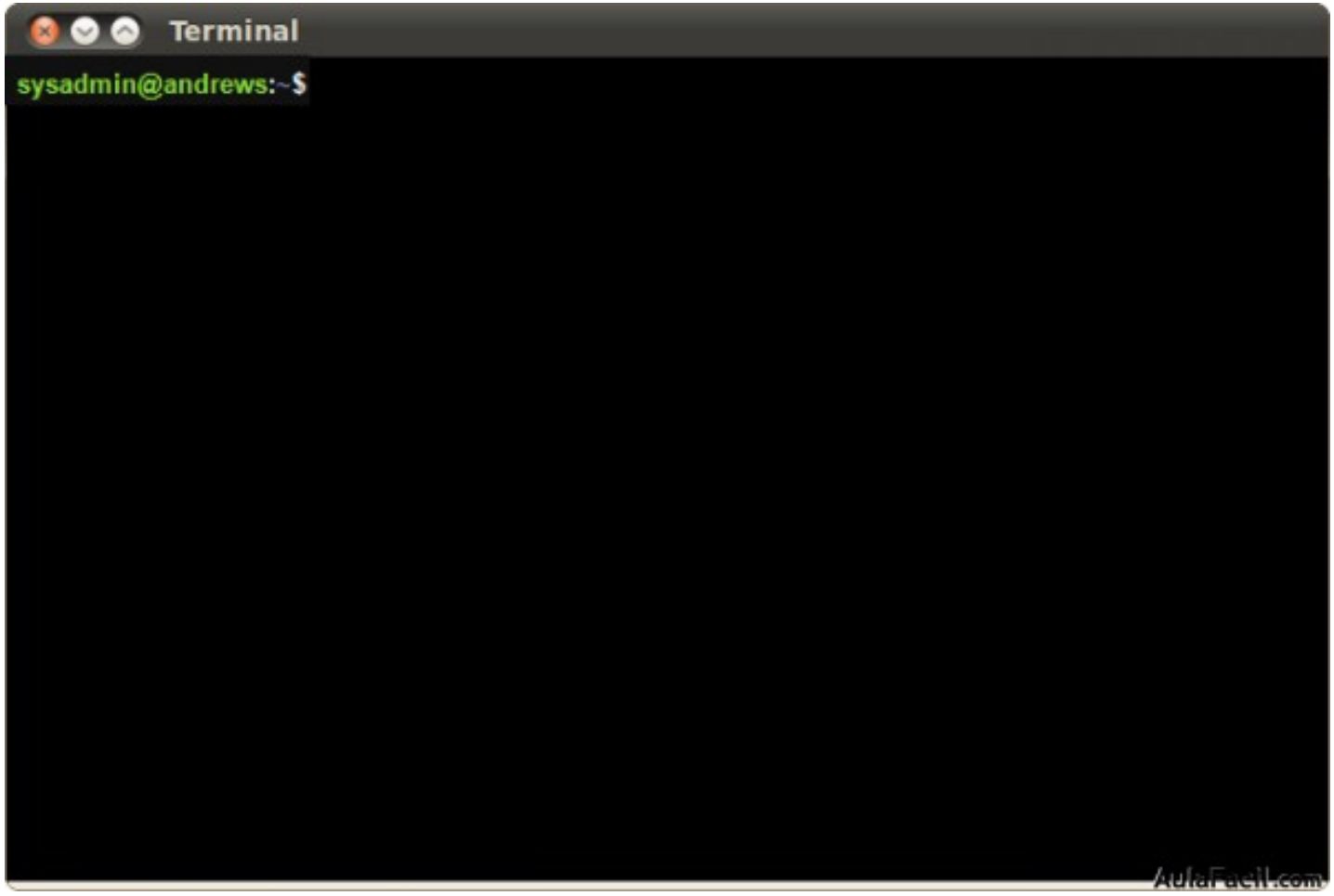
Work environment

Terminal



Check environment

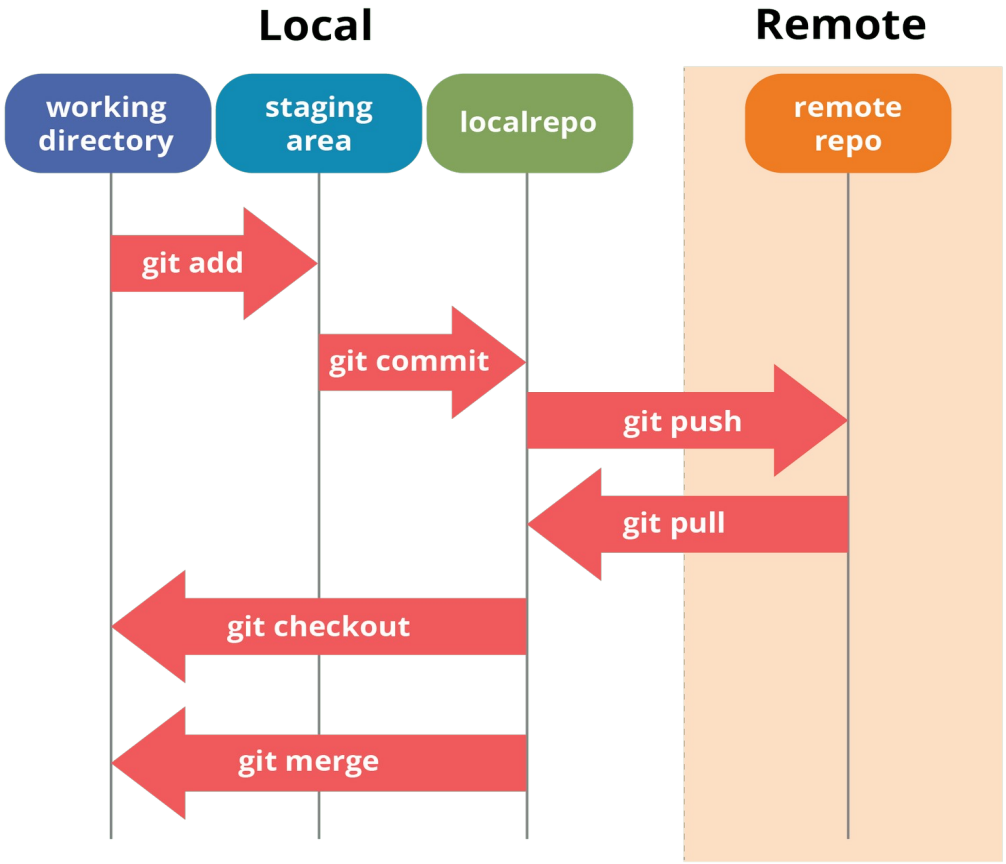
- python3 --version
- pip –version
  - https://pip.pypa.io/en/stable/installing
- git --version
  - https://www.atlassian.com/git/tutorials/install-git
- jupyter notebook
  - https://jupyter.readthedocs.io/en/latest/install.html

Shell introduction

Action	Files	Folders
Inspect	**ls**	**ls**
View content	**cat/more/less**	**ls**
Navigate to		**cd**
Move	**mv**	**mv**
Copy	**cp**	**cp -r**
Create	**vi / touch**	**mkdir**
Delete	**rm**	**rmdir, rm -r**

GIT

- Typical workflow between basic working areas in Git
  - Modify or add some files in your working directory
  - Select files (or their parts) you want to be part of next commit and add them to the staging area
  - Commit changes in staging area to your local repository
  - When you want others to also see your changes, push your commits to the remote repository



https://www.edureka.co/blog/git-tutorial/

https://git-scm.com/book/en/v2/

Comandos básicos de Git

- **git clone:** Copia un repositorio remoto al repositorio local
- **git fetch**: Descarga los cambios realizados en el repositorio remoto.
- **git merge** <nombre_rama>: Fusiona en la rama en la que te encuentras trabajando, los cambios realizados en la rama “nombre_rama”.
- **git pull**: Unifica los comandos fetch y merge en un único comando.
- **git commit** -am “<mensaje>”: Confirma los cambios realizados. El “mensaje” generalmente se usa para asociar al commit una breve descripción de los cambios realizados.
- **git push origin** <nombre_rama>: Sube la rama “nombre_rama” al servidor remoto.
- **git status**: Muestra el estado actual de la rama, como los cambios que hay sin commitear.

Jupyter notebook

Table of Contents

In [2]:
```
1 import pandas as pd
2 import numpy as np
3 import matplotlib.pyplot as plt
```

pivot/unpivot

In [8]:
```
1 df = pd.read_csv('data/life_expectancy_years.csv')
```

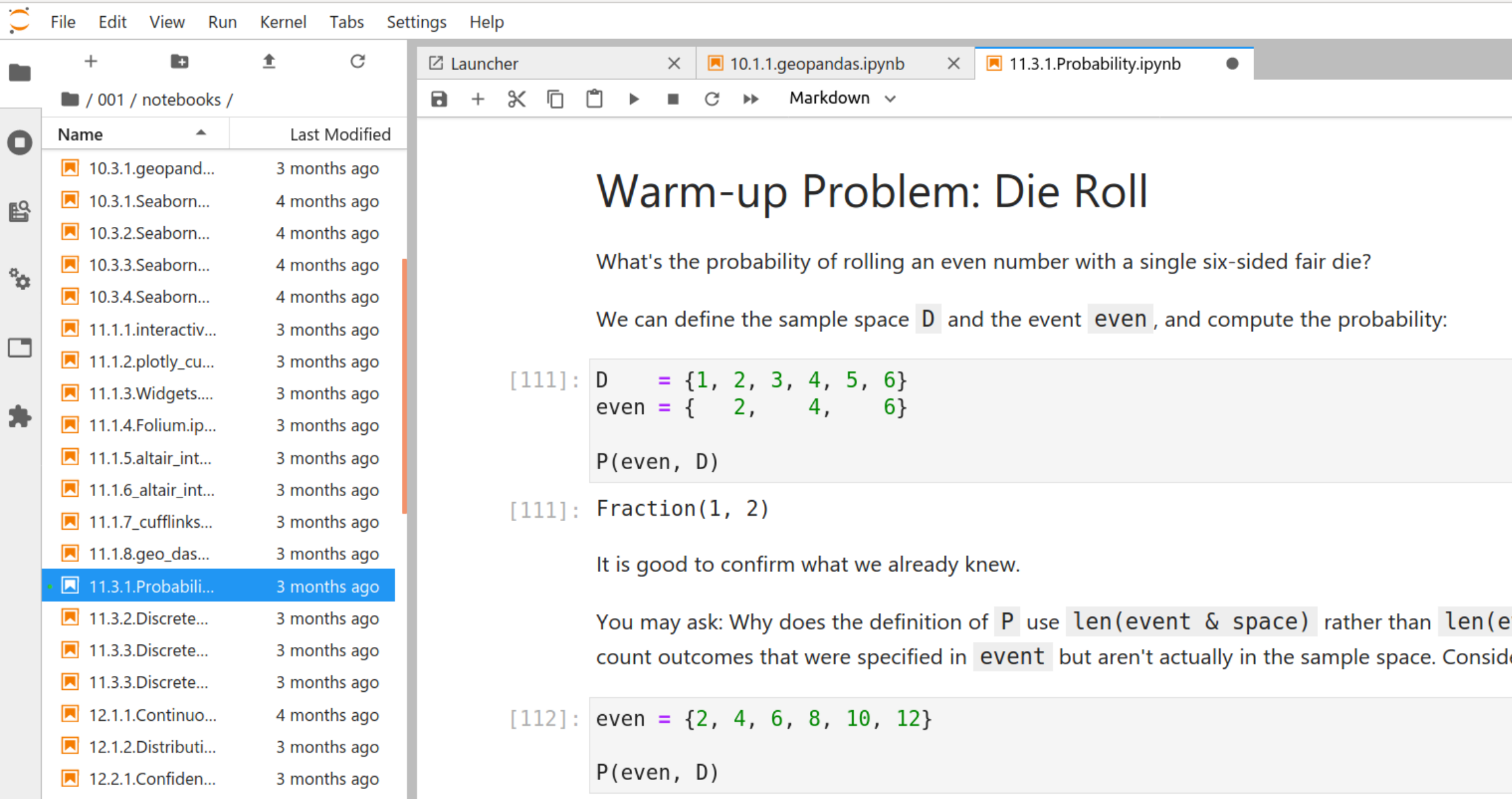
In [9]:
```
1 df.head()
```

Out[9]:

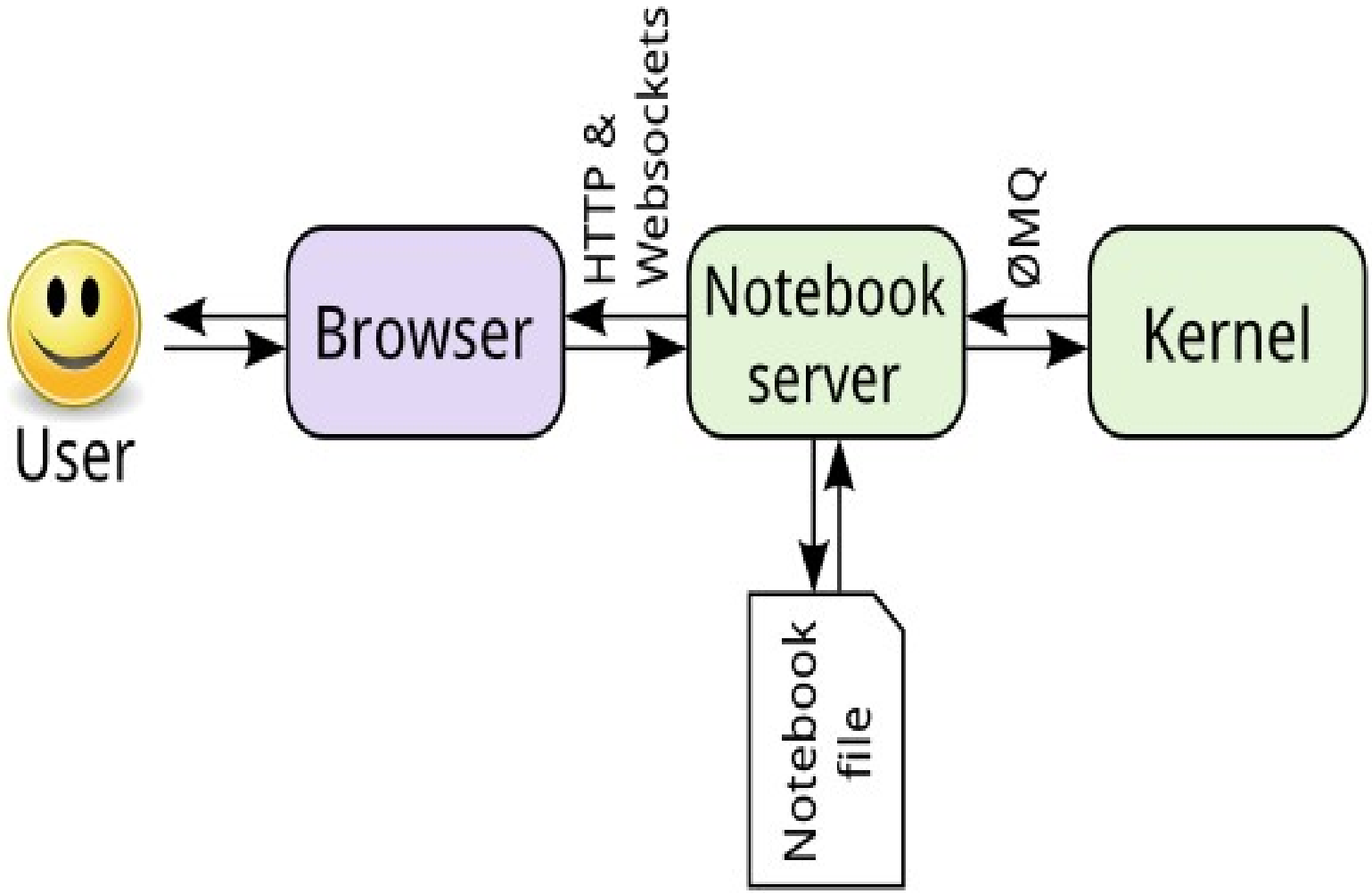
	country	1800	1801	1802	1803	1804	1805	1806	1807	1808	...	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
0	Afghanistan	28,2	28,2	28,2	28,2	28,2	28,2	28,1	28,1	28,1	...	55,7	56,2	56,7	57,2	57,7	57,8	57,9	58	58,4	58,7
1	Albania	35,4	35,4	35,4	35,4	35,4	35,4	35,4	35,4	35,4	...	75,9	76,3	76,7	77	77,2	77,4	77,6	77,7	77,9	78
2	Algeria	28,8	28,8	28,8	28,8	28,8	28,8	28,8	28,8	28,8	...	76,3	76,5	76,7	76,8	77	77,1	77,3	77,4	77,6	77,9
3	Angola	27	27	27	27	27	27	27	27	27	...	59,3	60,1	60,9	61,7	62,5	63,3	64	64,7	64,9	65,2
4	Antigua and Barbuda	33,5	33,5	33,5	33,5	33,5	33,5	33,5	33,5	33,5	...	76,9	76,8	76,9	77	77,3	77,1	77,2	77,3	77,4	77,6

5 rows × 220 columns

Jupyter lab


File Edit View Run Kernel Tabs Settings Help
/ 001 / notebooks /
Name
Last Modified
10.3.1.geopand... 3 months ago
10.3.1.Seaborn... 4 months ago
10.3.2.Seaborn... 4 months ago
10.3.3.Seaborn... 4 months ago
10.3.4.Seaborn... 4 months ago
11.1.1.interactiv... 3 months ago
11.1.2.plotly_cu... 3 months ago
11.1.3.Widgets.... 3 months ago
11.1.4.Folium.ip... 3 months ago
11.1.5.altair_int... 3 months ago
11.1.6_altair_int... 3 months ago
11.1.7_cufflinks... 3 months ago
11.1.8.geo_das... 3 months ago
11.3.1.Probabili... 3 months ago
11.3.2.Discrete... 3 months ago
11.3.3.Discrete... 3 months ago
11.3.3.Discrete... 3 months ago
12.1.1.Continuo... 4 months ago
12.1.2.Distributi... 3 months ago
12.2.1.Confiden... 3 months ago
Launcher
10.1.1.geopandas.ipynb
11.3.1.Probability.ipynb
Markdown
Warm-up Problem: Die Roll
What's the probability of rolling an even number with a single six-sided fair die?
We can define the sample space D and the event even, and compute the probability:
[111]:
D = {1, 2, 3, 4, 5, 6}
even = { 2, 4, 6}
P(even, D)
[111]:
Fraction(1, 2)
It is good to confirm what we already knew.
You may ask: Why does the definition of P use len(event & space) rather than len(e
count outcomes that were specified in event but aren't actually in the sample space. Consid
[112]:
even = {2, 4, 6, 8, 10, 12}
P(even, D)

Notebooks architecture



https://jupyter.readthedocs.io/en/latest/architecture/how_jupyter_ipython_work.html

Cell type

- Code: you write code
  - Live code
  - Interactive widgets
  - Plots
- Markdown: body-text, and contain markdown - you write text to organise your notebook
  - Narrative text
  - Equations
  - Images
  - Video
  - Embedded LaTeX equations
- Raw NBConvert: contents in raw cells are not evaluated by notebook kernel

Jupyter notebook

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5 rows × 220 columns

Command Mode (press ESC)

Ctrl-Cmd-S : Show search dialog

F : find and replace

Ctrl-Shift-F : open the command palette

Ctrl-Shift-P : open the command palette

Enter : enter edit mode

P : open the command palette

Shift-Enter : run cell, select below

Ctrl-Enter : run selected cells

Alt-Enter : run cell and insert below

Y : change cell to code

M : change cell to markdown

R : change cell to raw

1 : change cell to heading 1

2 : change cell to heading 2

3 : change cell to heading 3

4 : change cell to heading 4

5 : change cell to heading 5

6 : change cell to heading 6

Shift-Down : extend selected cells below

Shift-J : extend selected cells below

A : insert cell above

Up : select cell above

Down : select cell below

J : select cell below

Shift-K : extend selected cells above

Shift-Up : extend selected cells above

H : show keyboard shortcuts

I, I : interrupt the kernel

0, 0 : restart the kernel (with dialog)

Esc : close the pager

Q : close the pager

Shift-L : toggles line numbers in all cells, and persist the setting

Shift-Space : scroll notebook up

Space : scroll notebook down

Shift-M : merge selected cells, or current cell with cell below if only one cell is selected

Ctrl-S : Save and Checkpoint

S : Save and Checkpoint

L : toggle line numbers

O : toggle output of selected cells

Shift-O : toggle output scrolling of

Edit Mode (press Enter)

`Tab`	code completion or indent
`Shift-Tab`	tooltip
`Ctrl-]`	indent
`Ctrl-[`	dedent
`Ctrl-A`	select all
`Ctrl-Z`	undo
`Ctrl-/`	comment
`Ctrl-D`	delete whole line
`Ctrl-U`	undo selection
`Insert`	toggle overwrite flag
`Ctrl-Home`	go to cell start
`Ctrl-Up`	go to cell start
`Ctrl-End`	go to cell end
`Ctrl-Down`	go to cell end
`Ctrl-Left`	go one word left
`Ctrl-Right`	go one word right
`Ctrl-Backspace`	delete word before
`Ctrl-Delete`	delete word after
`Ctrl-Y`	redo
`Alt-U`	redo selection
`Ctrl-M`	enter command mode
`Ctrl-Shift-F`	open the command palette
`Ctrl-Shift-P`	open the command palette
`Esc`	enter command mode
`Shift-Enter`	run cell, select below
`Ctrl-Enter`	run selected cells
`Alt-Enter`	run cell and insert below
`Ctrl-Shift-Minus`	split cell at cursor
`Ctrl-S`	Save and Checkpoint
`Down`	move cursor down
`Up`	move cursor up

Jupyter Notebook Markdown Cheatsheet

From SqlBak.com with ♥

`#␣Header 1` `Header 1` `========`	# Header 1
`##␣Header 2` `Header 2` `--------`	## Header 2
`###␣Header 3`	### Header 3
`####␣Header 4`	#### Header 4
`#####␣Header 5`	##### *Header 5*
`*italics*` `_italics_`	*italics*
`\*literal asterisks\*`	*literal asterisks*
`**bold**` `__bold__`	**bold**
`~~strikethrough~~`	~~strikethrough~~
`1.␣First item` `2.␣Second item` `␣␣1.␣Subitem`	1. First item 2. Second item A. Subitem
`*␣Item 1` `␣Indent` `-␣Item 2` `␣+␣Item 3`	• Item 1 Indent • Item 2 ▪ Item 3
`- [x] Done` `- [ ] To do`	• ☑ Done • ☐ To do
`A` `Line␣␣` `Brake`	A Line Brake
`---` `* * *`	---

`<a id="anchor"></a>` `[Go to anchor](#anchor)` `#␣Top Header` `[Go to header](#Top-Header)`	Go to anchor
`https://sqlbak.com` `[Link](https://sqlbak.com "optional title")` `Click [here][id]` `[id]:https://sqlbak.com`	Link
`> blockquote text`	> blockquote text
`` ```python ```` `print('hello');` ```` ``` ```` `` `inline_code();` ``	`print('hello');`
`|Left |Center|Right|` `|:-----|:----:|----:|` `|1 |A |C |` `|2 |B |D |`	Left / Center / Right 1 / A / C 2 / B / D
`![alt text](logo.png "Title")` `![][id]` `[id]:logo.png "Title"`	
`$$\sqrt{k}$$` `Inline: $\sqrt{k}$`	$\sqrt{k}$
`[![Img Alt Text](http://img.youtube.com/vi/aZCXOw707nc/0.jpg)](https://youtu.be/aZCXOw707nc "Video Title")`