▶ Show Code

IPySlides

Creating Slides

Assuming you have `ls = ipyslides.LiveSlides()`

- Proceed to create slides:
  - `%%slide integer` on cell top auto picks slide and `%%title` auto picks title page.
  - `%%slide integer -m` can be used to create slide from full markdown (extended one).
  - You can use context managers like `with ls.slide(): ...` and `with ls.title(): ...` in place of `%%slide` and `%%title` respectively.

Python

```python
import ipyslides as isd
ls = isd.LiveSlides()
ls.set_animation(main='zoom')
```

Python

```
%%title
# create a rich content title page
```

Author: Abdul Saboor عبدالصبور | Sep-24-2022

IPySlides

Slide 1

ⓘ This is inline markdown parsed by magic

Version: 1.8.3 as executed from below code in markdown.

Python

```
import ipyslides as isd
version = isd.__version__
%xmd #### This is inline markdown parsed by magic {.Note .Warning}
```

I am created using `with slides.slide(1)` context manager, so I overwrite the previous slide, and you can not see my full code, but part of it using `LiveSlides.source.context` context manager.

I am Alerted and I am *colored and italic text*

Python

```
slides.parse_xmd(s1.markdown) #s1 was assigned as `s0, s1, s2 = slides.from_markdown...` in start.
write('#### I am created using `with slides.slide(1)` context manager, '
```

▶ Show Code

Slide 2

Created using `%%slide 2 -m` with markdown only

[1] Refrence to this will show at end

Column A

Sub column A

Column B

Sub column B

That version from last slide is still in memory. See it is there 1.8.3

I was added at end using `s2.insert_markdown`

IPySlides

I am created using `@slides.frames`

Python

```
slides.write(obj)
slides.notify_later()(lambda: 'That is a notification which shows you can use decorator this way as well')
```

IPySlides Online Running Sources

ⓘ Launch as voila slides (may not work as expected [1]) launch binder

ⓘ Edit on Kaggle

ⓘ Launch example Notebook launch binder

1. Add references like this per slide. Use slides.cite() or in markdown cite`key` to add citations generally. ↩

Python

```python
slides.write(obj)
slides.notify_later()(lambda: 'That is a notification which shows you can use decorator this way as well')
```

IPySlides

IPython Display Objects

Any object with following methods could be in `write` command:

`_repr_pretty_`, `_repr_html_`, `_repr_markdown_`, `_repr_svg_`, `_repr_png_`, `_repr_jpeg_`, `_repr_latex_`, `_repr_json_`, `_repr_javascript_`, `_repr_pdf_` Such as `IPython.display.<HTML,SVG,Markdown,Code>` etc. or third party such as `plotly.graph_objects.Figure`.

Plots and Other **Data** Types

These objects are implemented to be writable in `write` command:

`matplotlib.pyplot.Figure`, `altair.Chart`, `pygal.Graph`, `pydeck.Deck`, `pandas.DataFrame`, `bokeh.plotting.Figure`, `IPython.display.Image` Many will be extentended in future. If an object is not implemented, use `display(obj)` to show inline or use library's specific command to show in Notebook outside `write`.

Interactive Widgets

Any object in `ipywidgets` Link to ipywidgtes right here using textbox command

or libraries based on ipywidgtes such as `bqplot` , `ipyvolume` ,plotly's `FigureWidget` [2](reference at end) can be included in `iwrite` command as well as other objects that can be passed to `write` with caveat of Javascript.

Commands which do all Magic!

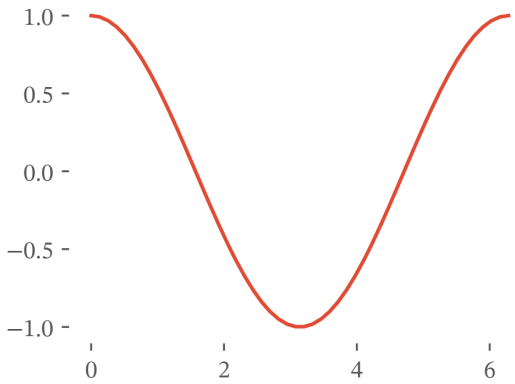
IPySlides

LiveSlides.**write**(*columns, width_percents=None, className=None)

Writes markdown strings or IPython object with method `_repr_<html,svg,png,...>_` in each column of same with. If width_percents is given, column width is adjusted. Each column should be a valid object (text/markdown/html/ have *repr or to* method) or list/tuple of objects to form rows or explictly call `rows`.

- Pass int,float,dict,function etc. Pass list/tuple in a wrapped list for correct print as they used for rows writing too.
- Give a code object from `LiveSlides.source.context[from_...]` to it, syntax highlight is enabled.
- Give a matplotlib `figure/Axes` to it or use `ipyslides.objs_formatter.plt2html()`.
- Give an interactive plotly figure.
- Give a pandas dataframe `df` or `df.to_html()`.
- Give any object which has `to_html` method like Altair chart. (Note that chart will not remain interactive, use display(chart) if need interactivity like brushing etc.)
- Give an IPython object which has `_repr_<repr>_` method where is one of ('html','markdown','svg','png','jpeg','javascript','pdf','pretty','json','latex').
- Give a function/class/module (without calling) and it will be displayed as a pretty printed code block.

Plotting with Matplotlib



Python

```python
import numpy as np, matplotlib.pyplot as plt
plt.rcParams['svg.fonttype'] = 'none' # Global setting, enforce same fonts as presentation
x = np.linspace(0,2*np.pi)
with plt.style.context('ggplot'):
    fig, ax = plt.subplots(figsize=(3.4,2.6))
    _ = ax.plot(x,np.cos(x))
write([ax, s.focus_lines([1,3,4])])
```

Watching Youtube Video?

Python

```python
write(f"### Watching Youtube Video?")
write(YouTubeVideo('Z3iR551KgpI',width='100%',height='266px'))
@slides.notify_later()
def push():
    t = time.localtime()
    return f'You are watching Youtube at Time-{t.tm_hour:02}:{t.tm_min:02}'

```

Data Tables

Here is Table

h1	h2	h3
d1	d2	d3
r1	r2	r3

Python

```
write('## Data Tables')
write(slides.block_r('Here is Table','<hr/>',
    textwrap.dedent('''
 |h1|h2|h3|
 |---|---|---|
 |d1|d2|d3|
 |r1|r2|r3|
 ''')))
```

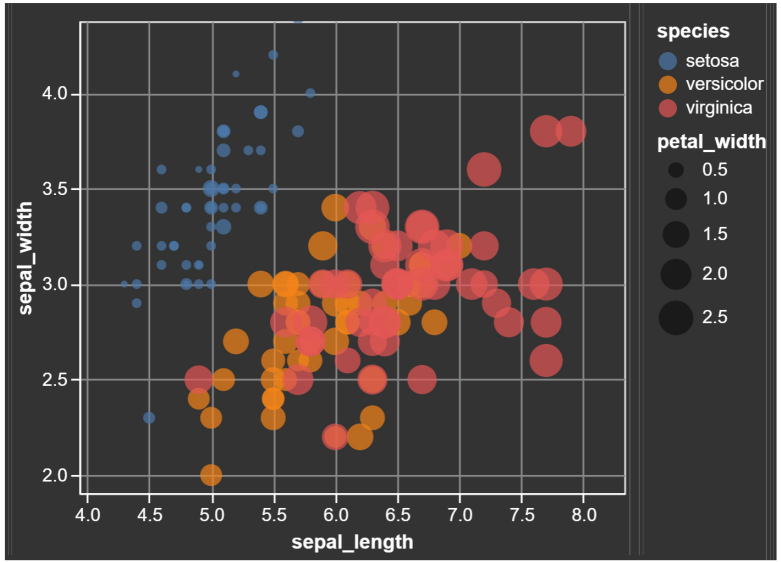
IPySlides

Writing Pandas DataFrame

	sepal_length	sepal_width	petal_length	petal_width
count	150.000000	150.000000	150.000000	150.000000
mean	5.843333	3.057333	3.758000	1.199333
std	0.828066	0.435866	1.765298	0.762238
min	4.300000	2.000000	1.000000	0.100000
25%	5.100000	2.800000	1.600000	0.300000
50%	5.800000	3.000000	4.350000	1.300000
75%	6.400000	3.300000	5.100000	1.800000

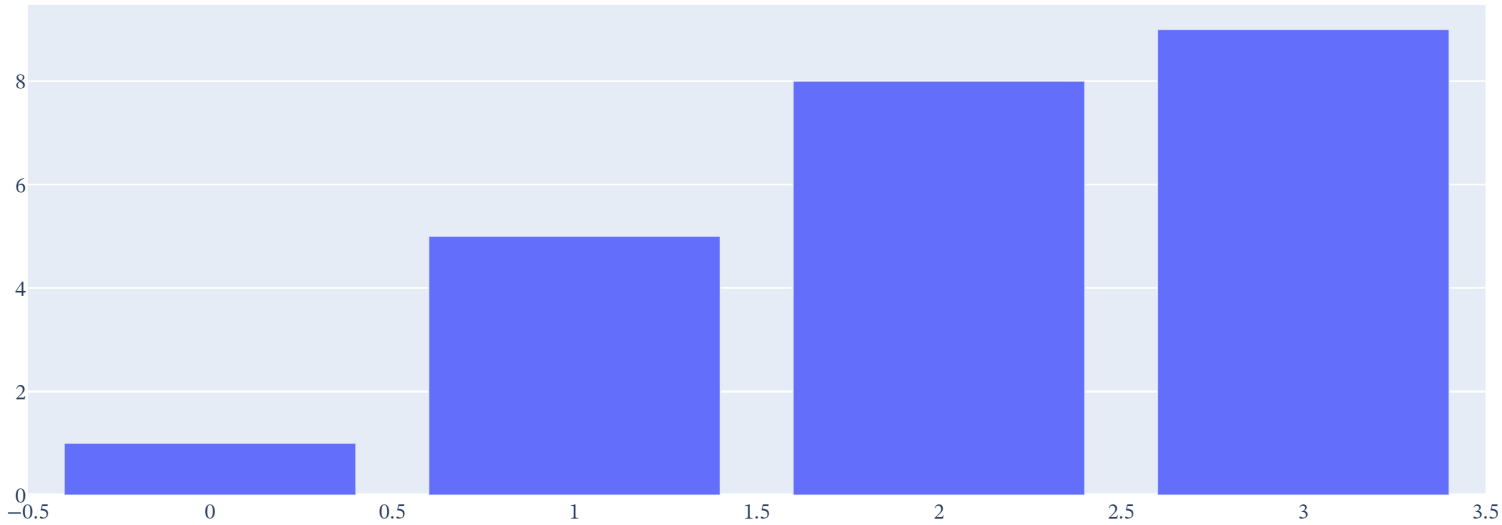
Writing Altair Chart

ⓘ May not work everywhere, needs javascript



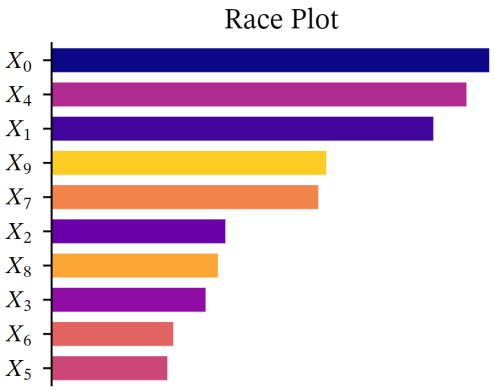
IPySlides

Writing Plotly Figure



Interactive Apps on Slide

Use `ipywidgets`, `bqplot`, `ipyvolume`, `plotly Figurewidget` etc. to show live apps like this!



Click me to update race plot

Check out this app

Python

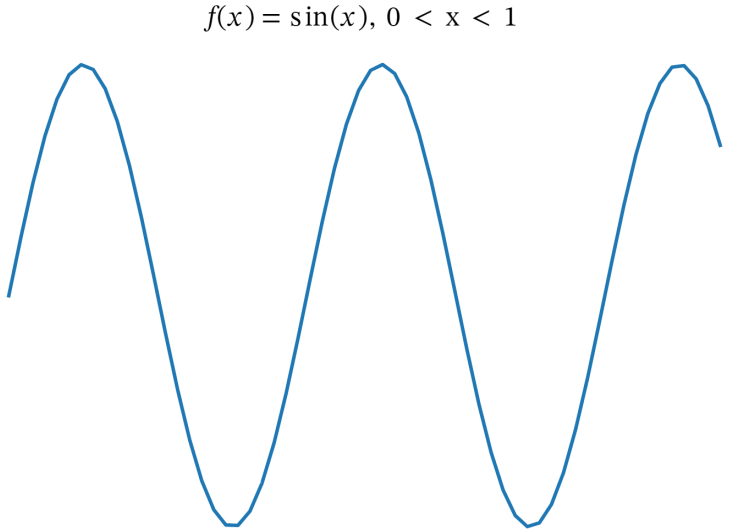
```python
import ipywidgets as ipw
import numpy as np, matplotlib.pyplot as plt

write('## Interactive Apps on Slide\n Use `ipywidgets`, `bqplot`,`ipyvolume` , `plotly Figurewidget` etc. to show live apps like this!')
writer, (plot,button, _), code = slides.iwrite([
    '## Plot will be here! Click button below to activate it!',
    ipw.Button(description='Click me to update race plot',layout=ipw.Layout(width='max-content')),
    "[Check out this app](https://massgh.github.io/pivotpy/Widgets.html#VasprunApp)"],src.focus_lines([4,5,6,7,*range(24,30)]))

def update_plot():
    x = np.linspace(0,0.9,10)
    y = np.random.random((10,))
    _sort = np.argsort(y)

    fig,ax = plt.subplots(figsize=(3.4,2.6))
    ax.barh(x,y[_sort],height=0.07,color=plt.cm.get_cmap('plasma
```

This is Slide 14.1

and we are animating matplotlib

Python

```
1 fig, ax = plt.subplots()
2  + 6 more lines ...
```



Python

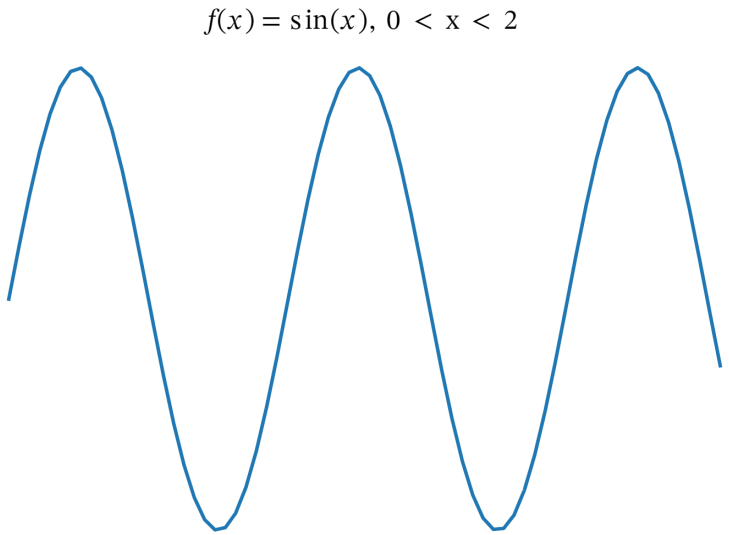
```
1  + 5 more lines ...
2 slides.notes.insert(f'## This is under @frames decorator, so it will be shown only in first frame')
3 slides.notify_later()(lambda: f'This is under @frames decorator, so it will be shown only in first
  frame')
```

This is Slide 14.2

and we are animating matplotlib

Python

```
1   + 1 more lines ...
2  x = np.linspace(0,obj+1,50+10*(obj
     - 13))
3   + 5 more lines ...
```

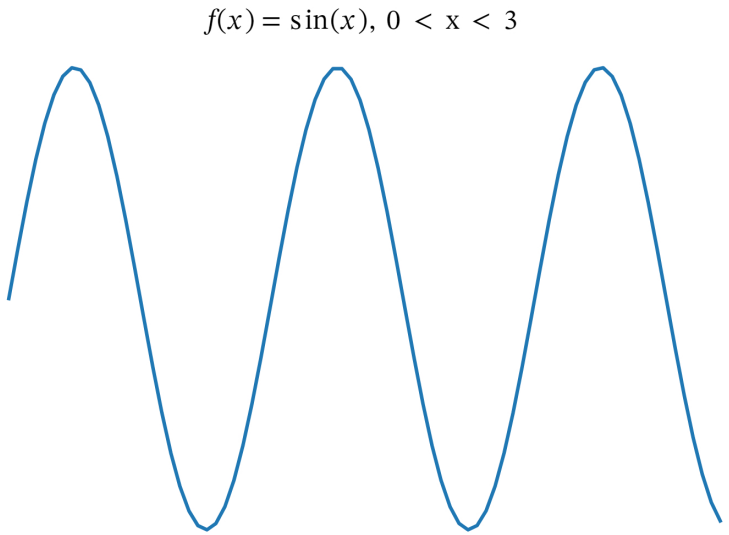


This is Slide 14.3

and we are animating matplotlib

Python

```
  + 2 more lines ...
ax.plot(x,np.sin(x));
  + 4 more lines ...
```

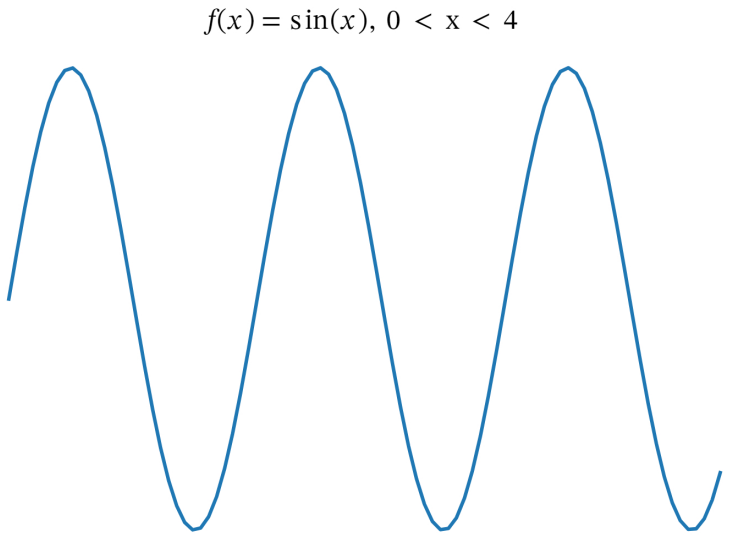


This is Slide 14.4

and we are animating matplotlib

Python

```
  + 3 more lines ...
ax.set_title(f'$f(x)=\sin(x)$, 0 < x < {obj - 13}')
  + 3 more lines ...
```

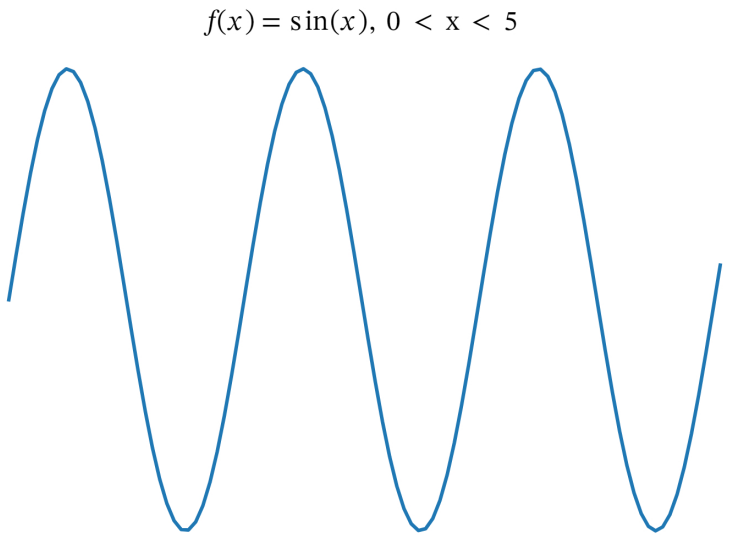


This is Slide 14.5

and we are animating matplotlib

Python

```
  + 4 more lines ...
ax.set_axis_off()
  + 2 more lines ...
```



IPySlides

Frames with

`repeat = False`

1

IPySlides

Frames with

`repeat = False`

2

IPySlides

Frames with

`repeat = False`

3

IPySlides

Frames with

`repeat = False`

4

IPySlides

Frames with

`repeat = True`

1

IPySlides

Frames with

`repeat = True`

1

2

IPySlides

Frames with

`repeat = True`

1

2

3

IPySlides

Frames with

`repeat = True`

1

2

3

4

Frames with

`repeat = [(0,1),(2,3)]`

1

2

Python

```
slides.write('# Frames with \n#### `repeat = [(0,1),(2,3)]`')
slides.write(*obj)
```

Frames with

`repeat = [(0,1),(2,3)]`

3

4

Python

```
slides.write('# Frames with \n#### `repeat = [(0,1),(2,3)]`')
slides.write(*obj)
```

Displaying image from url from somewhere in Kashmir (کشمیر)

$\LaTeX$ in Slides

ℹ Use `$ $` or `$$ $$` to display latex in Markdown, or embed images of equations $\LaTeX$ needs time to load, so keeping it in view until it loads would help.

$$\int_0^1\frac{1}{1-x^2}dx$$

$$\int_0^1 \frac{1}{1-x^2}dx$$

Built-in CSS styles

Use any or combinations of these styles in className argument of writing functions:

className = 'Center'	------Text------
className = 'Left'	Text----------
className = 'Right'	----------Text
className = 'RTL'	------ اردو عربي
className = 'Info'	Blue Text
className = 'Warning'	Orange Text
className = 'Success'	Green Text
className = 'Error'	Red Text
className = 'Note'	Text with info icon
className = 'slides-only'	Text will not appear in exported html with `build_report`
className = 'report-only'	Text will not appear on slides. Useful to fill content in report.
className = 'Block'	Block of text/objects

Info

Warning

Can skip `write` commnad sometimes

Column A

Column B

Column C

Column D

IPySlides

Serialize Custom Objects to HTML

This is useful for displaying user defined/third party objects in slides

0 1 2 3 4 5 6 7 8 9

Python

```python
@slides.serializer.register(int)
def colorize(obj):
    color = 'red' if obj % 2 == 0 else 'green'
    return f'<span style="color:{color};">{obj}</span>'

slides.write(*range(10))
```

This is all code to generate slides

Python

```python
    def demo(self):
        """Demo slides with a variety of content."""
        self.close_view() # Close any previous view to speed up loading 10x faster on average
        self.clear() # Clear previous content

        import runpy
        file = os.path.join(os.path.dirname(os.path.dirname(__file__)), '_demo.py') # Relative path to this file
        slides = runpy.run_path(file, init_globals= {'slides': self})['slides']

        N = len(slides)
        with slides.slide(N + 1):
            slides.write('## This is all code to generate slides')
            slides.write(self.demo)
            slides.source.from_file(file).display()
```

e:\research\ipyslides\ipyslides_demo.py

ℹ Slides made by using `from_markdown` or `%%slide` magic preserve their full code

IPySlides

Source Code

Markdown: Slide 0

```
# Creating Slides
**Assuming you have `ls = ipyslides.LiveSlides()`**

- Proceed to create slides:
    - `%%slide integer` on cell top auto picks slide and `%%title` auto picks title page.
    - `%%slide integer -m` can be used to create slide from full markdown (extended one).
    - You can use context managers like `with ls.slide(): ...` and `with ls.title(): ...` in place of `%%slide` and `%%title` respectively.

```python
import ipyslides as isd
ls = isd.LiveSlides()
ls.set_animation(main='zoom')
```

Markdown: Slide 2
```

IPySlides

References

[1] This is reference created using markdown

[2] This is refernce to FigureWidget using `slides.cite` command

Python

```
slides.write_citations()
```