# Insights for ArcGIS for Developers

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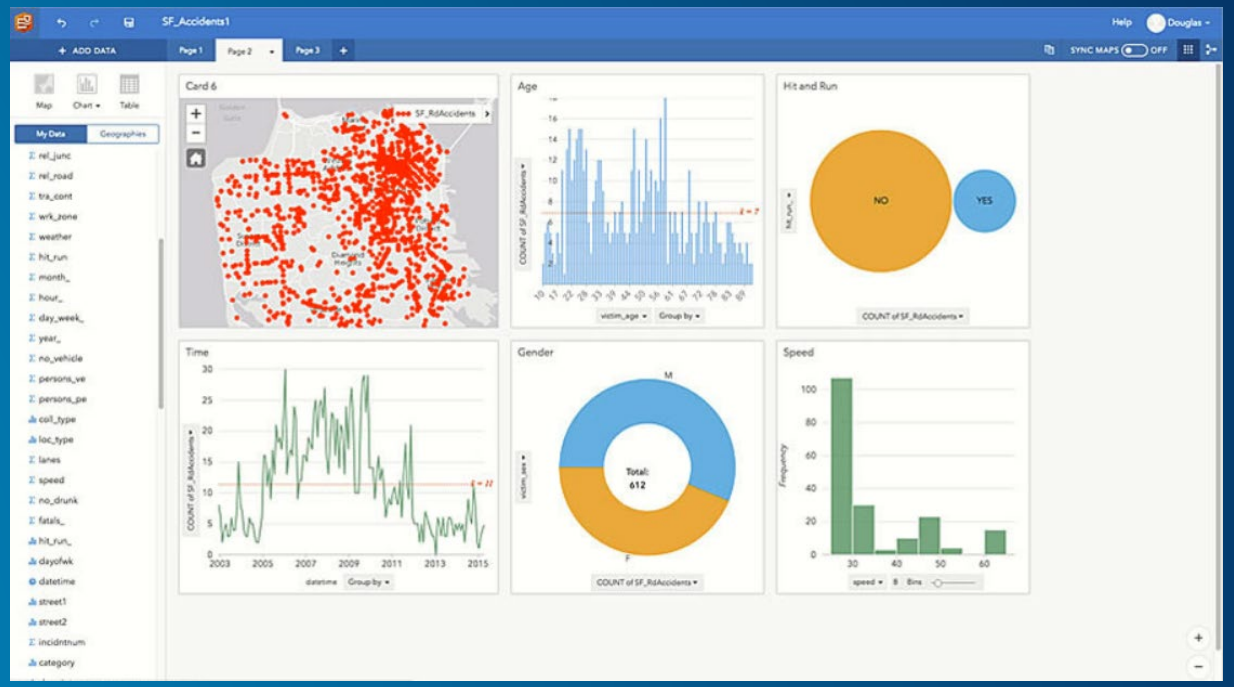
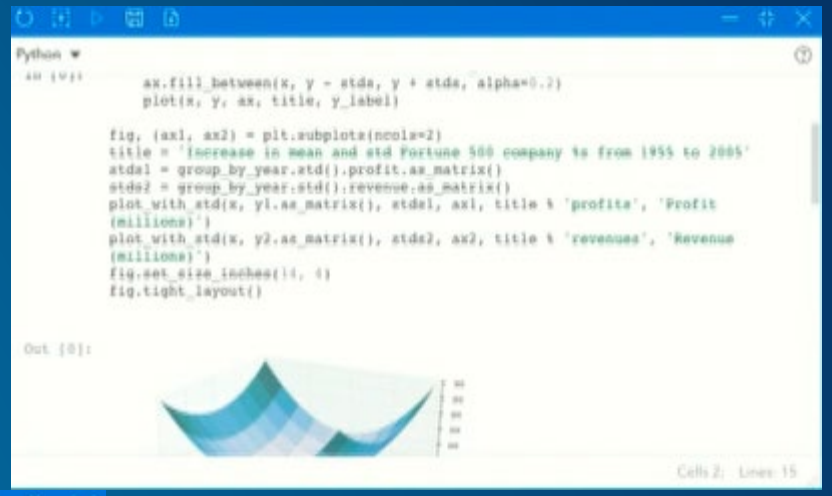
# What is ArcGIS Insights ?

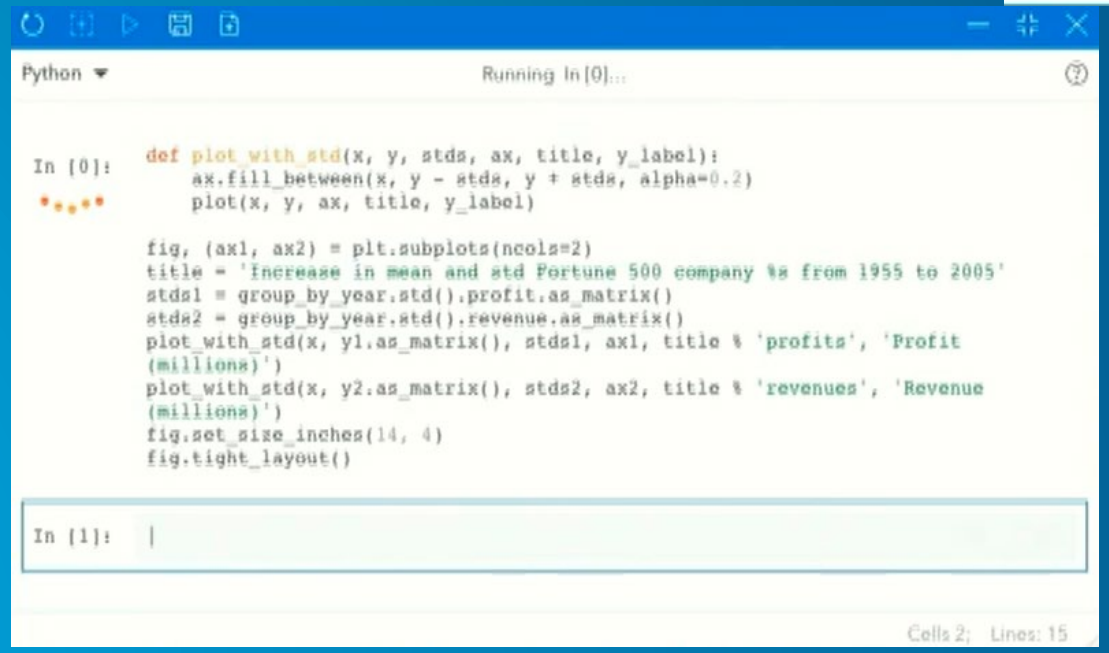
- Insights for ArcGIS was the previous name
- Explore spatial and non-spatial data,
- Answer questions you didn't know to ask
- Deliver powerful results
- Share them

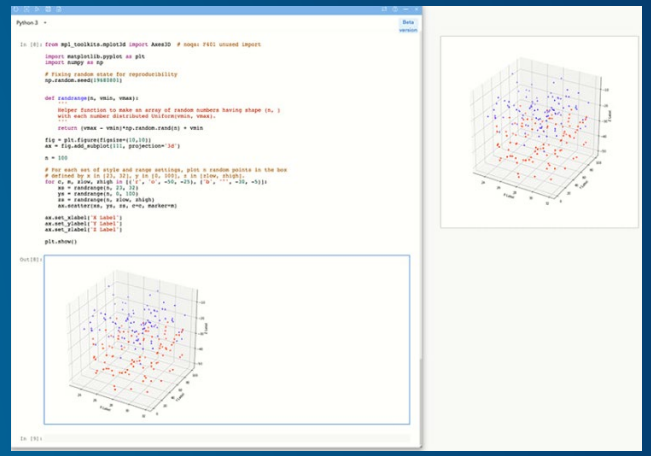


# Python and R with Insights

- Extend your analysis using Python and/or R
- Incorporate visualisations as card
- Manage data



# How do you get started ?

- Insights for ArcGIS 3.2 now supports scripting in Python and R
- Allows you to use existing open data science platforms
- Uses a Jupyter Kernel Gateway

# Connecting to Python and R

- From an Insights Workbook


- Click Console button on toolbar

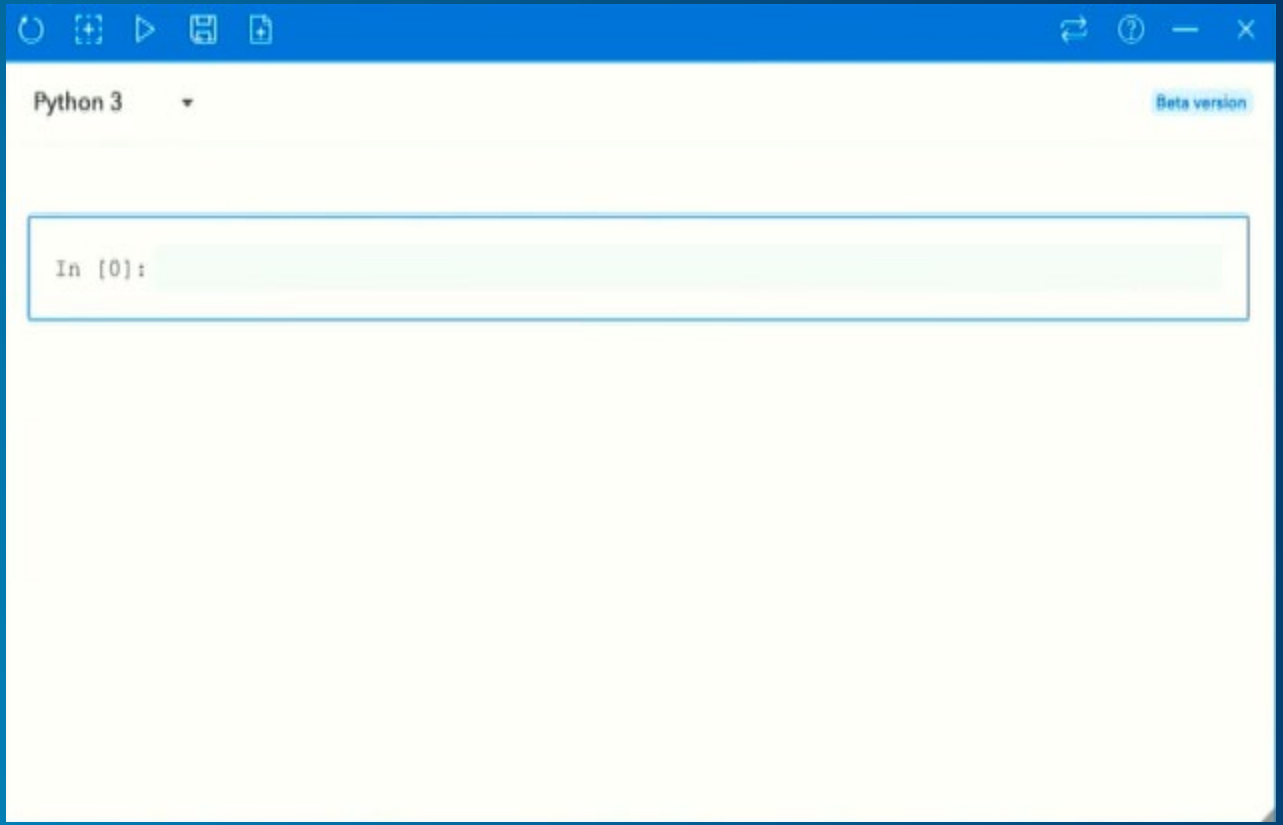
- Connect to Jupyter Kernel Gateway
  - https://insights.esri.com:9999
  - www://insights.esri.com:9999

# Choose Kernel

- Select Kernel dropdown
  - Python
  - R

# The Console

- Where you interact with the kernel
  - Code editing
  - Imports scripts
  - Intellisense and code completion



# Write Code

- Python
- R

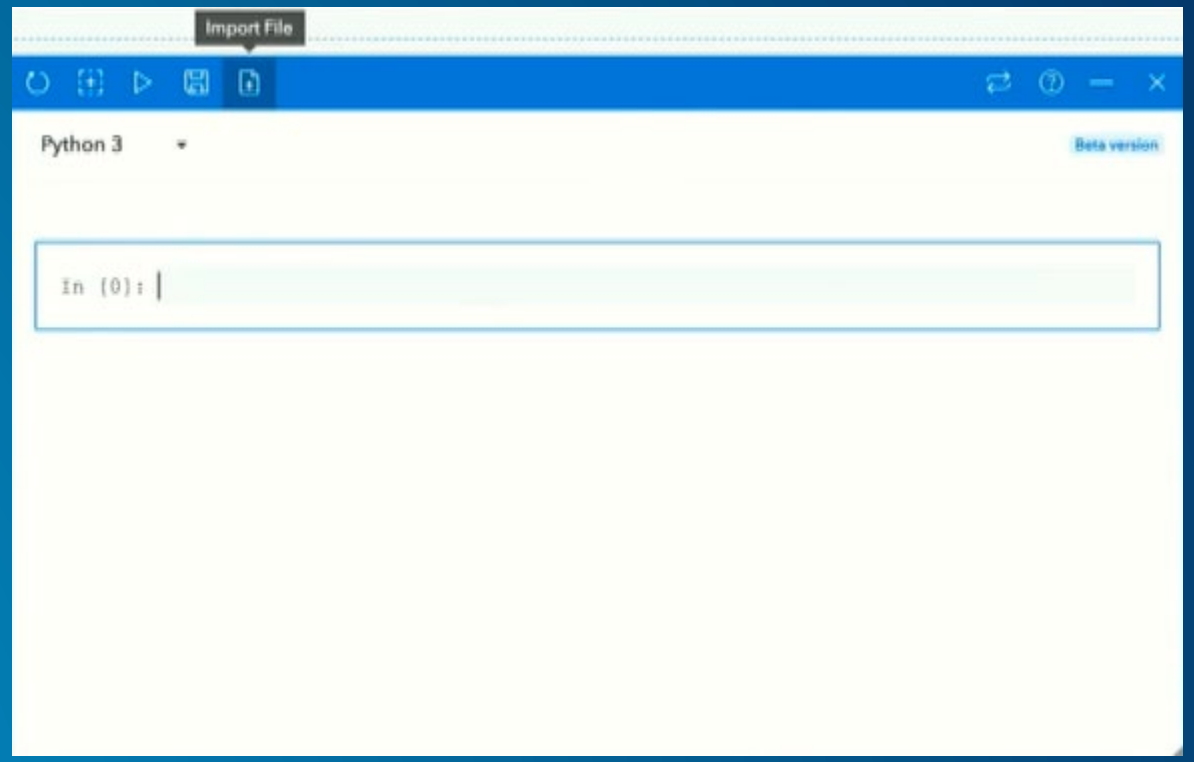
Python 3

Beta version

```
In [0]: import financetools.financetools as ft
        ft.monthly_aggregate(apple, "adj_close_price", "trade_date")
        ft.five_highest(apple, "adj_close_price")
        apple['trade_date'] = pd.to_datetime(apple["trade_date"])
        start_date = "2013-01-01"
        end_date = "2013-08-01"
        mask = (apple["trade_date"] > start_date) & (apple["trade_date"] <=
        end_date)
        apple.loc[mask]
```

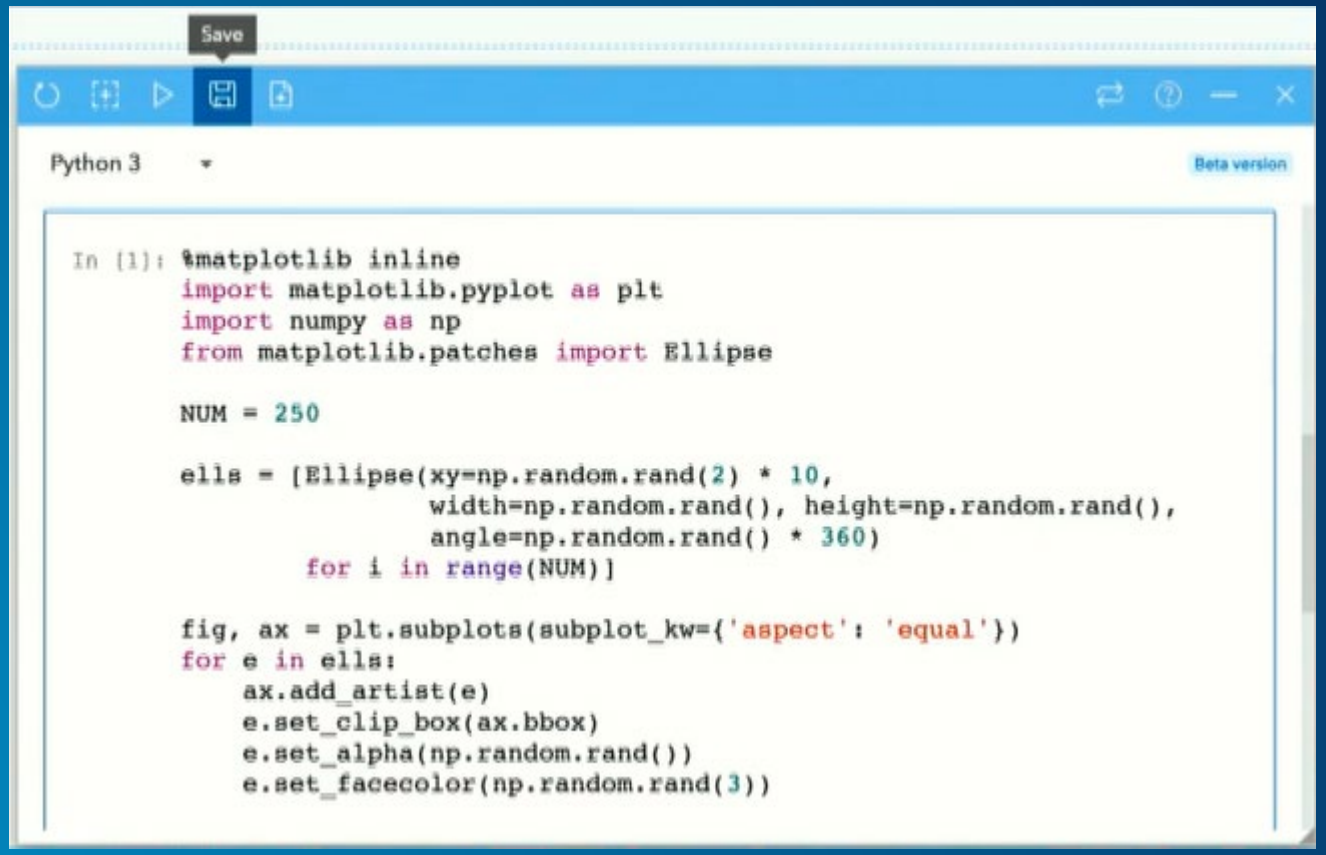
# Importing Code

- Import code in single cell
  - .py file input
  - .r file input



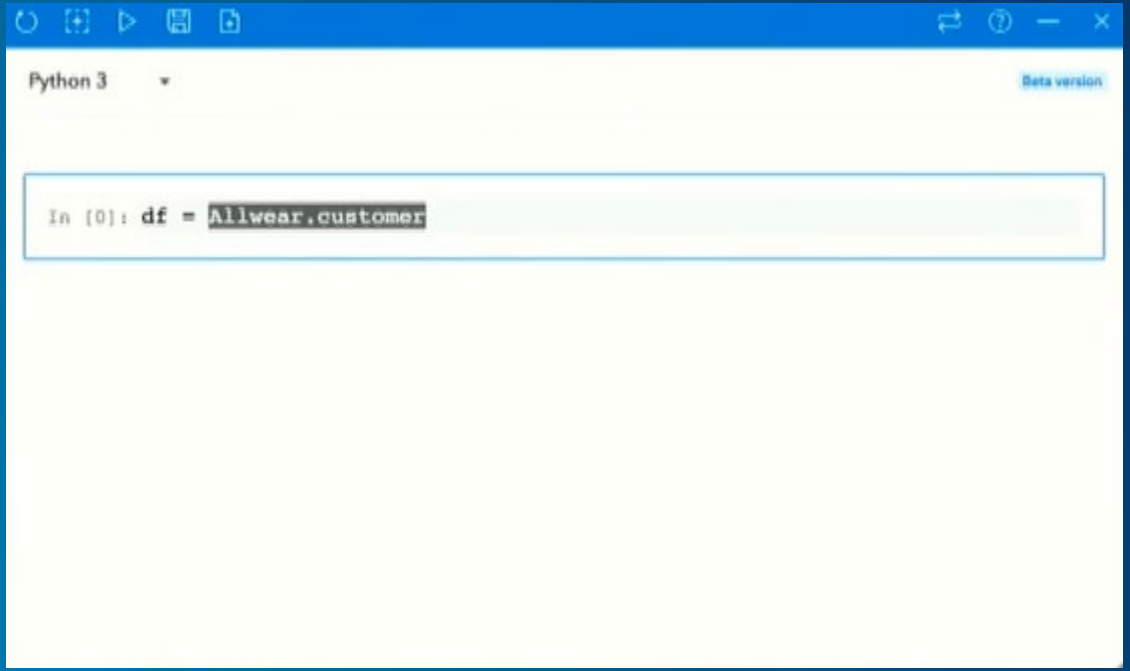
# Save Work

- Save history
  - ipnyb file
- Save code in single cell
  - .r file ouput
  - .py file oupute



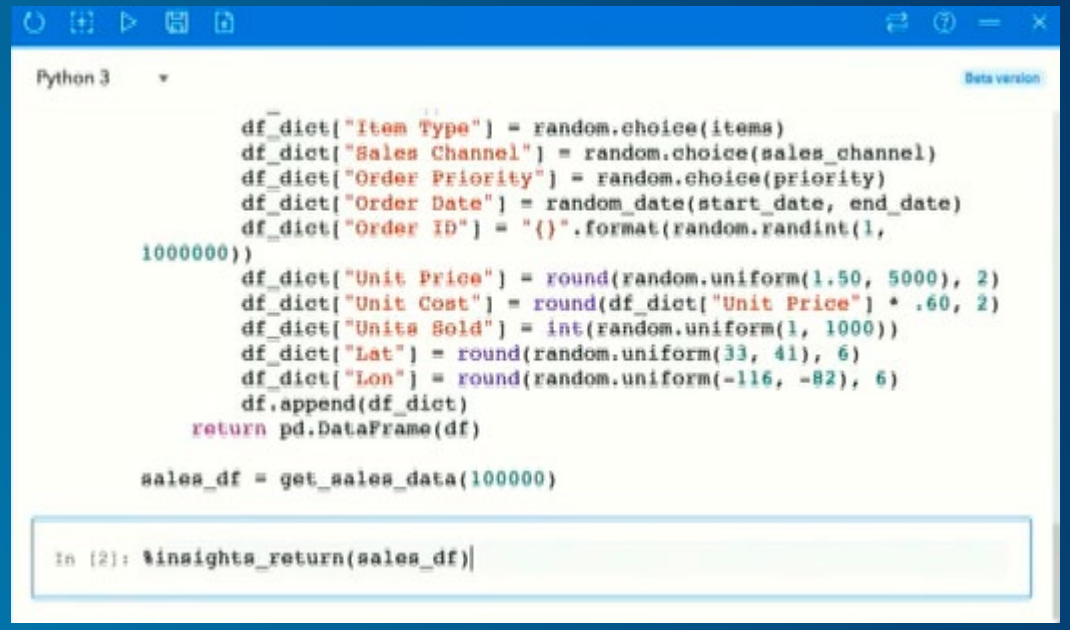
# Using Insights Data

- Choose data from Data Pane
- Drag-and-drop data into Console
- Create data frame from dropped data



# Data from Console to Data Pane

- Use Insights magic command
  - %insights_return(data_frame)
  - Takes R data frame or pandas Data Frame
  - Ctrl  + q for shortcut
  - Must be run on single line in single cell

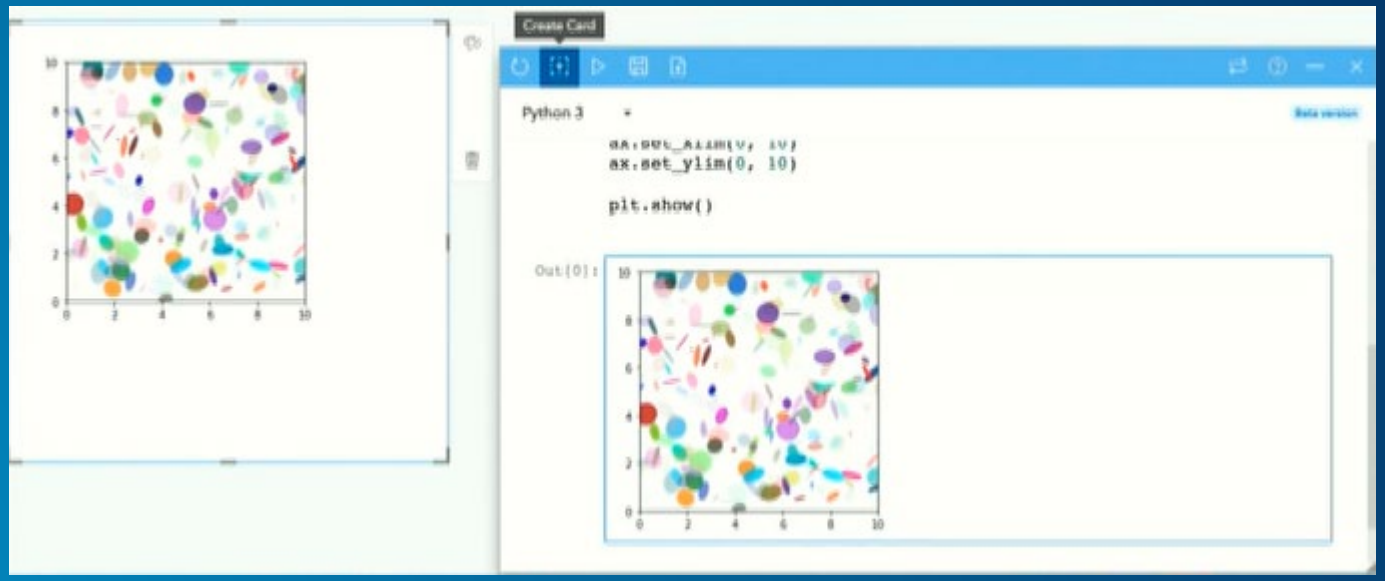


# Shortcuts

- Ctrl + q
  - Add %insights_return magic command to cell
- Ctrl + /
  - comment line
- Ctrl + Spacebar
  - intellisense
- Shift + Enter /return
  - execute cell
- Shift + Up Arrow or Down Arrow
  - access history of executed cells

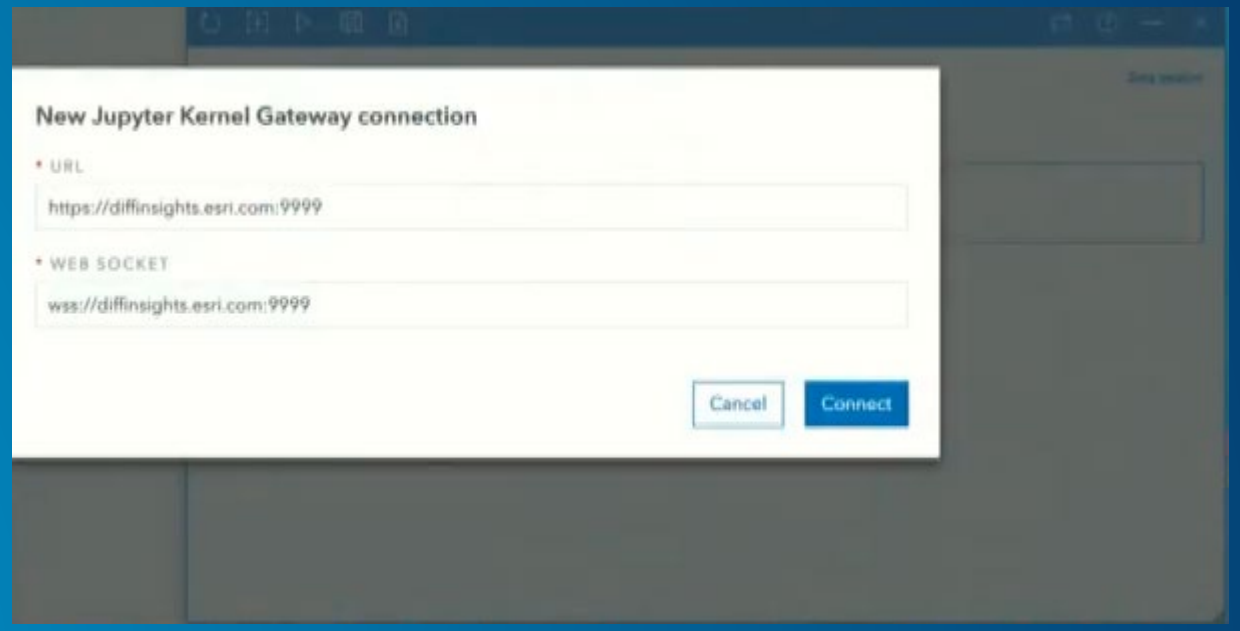
# Create Custom cards

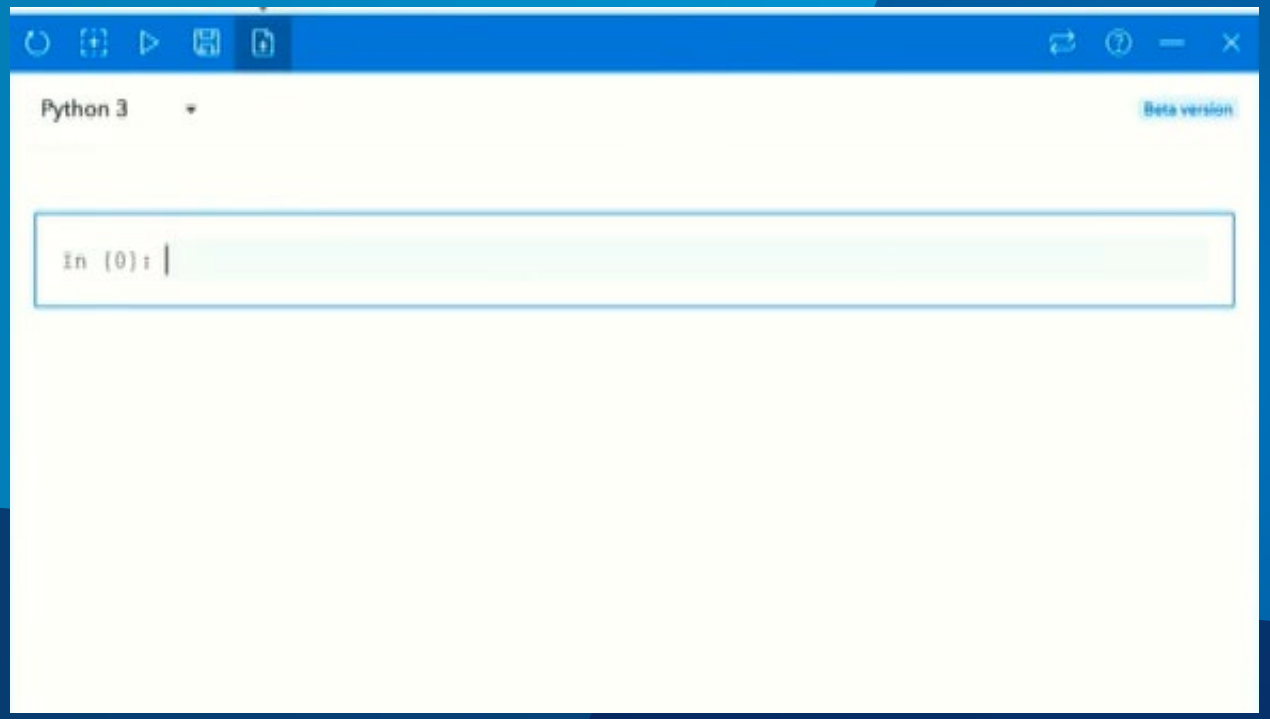
- Custom visualisations
- Select ouput result cells
- Click create Card button
- Custom Card added



# Switch Gateway

- Click Switch Jupyter Kernel Gateway button
- Connect to different Jupyter Kernel Gateway
  - https://myurl.com:9999
  - wss://myurl.com:9999
- Click Connect






# Insights Scripting

Introduction

# Setting up the Gateway

# Required components

- Jupyter Kernel Gateway
  - Python Kernel
  - R Kernel
- Install and configuring using
  - Docker
  - Anaconda
- TLS/SSL configuration

# Outlined on Github

- [Insights scripting guide – Github]

| | | |
|---|---|---|
| Docker | Update docker file comments | 9 days ago |
| Graphics | Initial commit | 7 months ago |
| Py | Update README.md | 3 months ago |
| R | Initial commit | 7 months ago |
| .gitignore | Initial commit | 7 months ago |
| LICENSE | Initial commit | 7 months ago |
| README.md | Remove beta restrictions | 4 days ago |

README.md

## ArcGIS Insights scripting guide

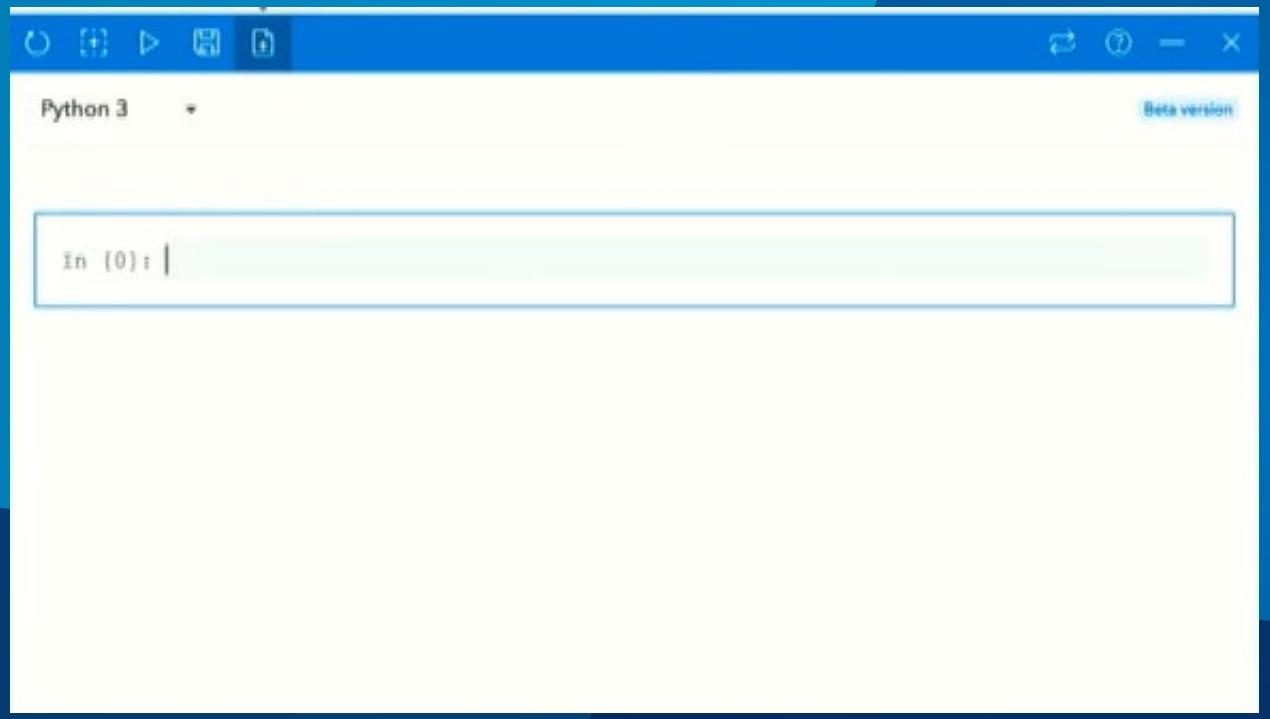
Welcome to the ArcGIS Insights scripting guide.

This repo contains information on getting started with scripting in ArcGIS Insights. This feature enables the execution of Python and R code using a bring-your-own scripting environment. Among many topics, we outline how to deploy a Jupyter Kernel Gateway, how to connect to a Jupyter Kernel Gateway, and tips and tricks for using the ArcGIS Insights scripting environment with other ArcGIS Insights features. In addition, the repo serves as a place to find and share useful Python and R scripts and creates a community around those who prefer to write code to advance data science and knowledge sharing.

We welcome any contributions for improving this guide. If you find a bug or would like to report a problem in the ArcGIS Insights scripting environment, please log an issue in this repo.

### Overview

- Learn how to configure a Jupyter Kernel Gateway (this is a requirement for using the ArcGIS Insights scripting environment).
- Pick a Windows or macOS machine, such as a desktop or laptop, to host your Jupyter Kernel Gateway.
- Generate Transport Layer Security (TLS) or Secure Sockets Layer (SSL) certificates.
- Follow the guide for installing and deploying a Jupyter Kernel Gateway.
- Learn tips about keyboard shortcuts and important scripting options.
- Search for Python and R code.
- Contribute Python and R code.
- Read ArcGIS Insights use cases and product documentation.
- Try ArcGIS Insights in Enterprise.




# Insights Scripting

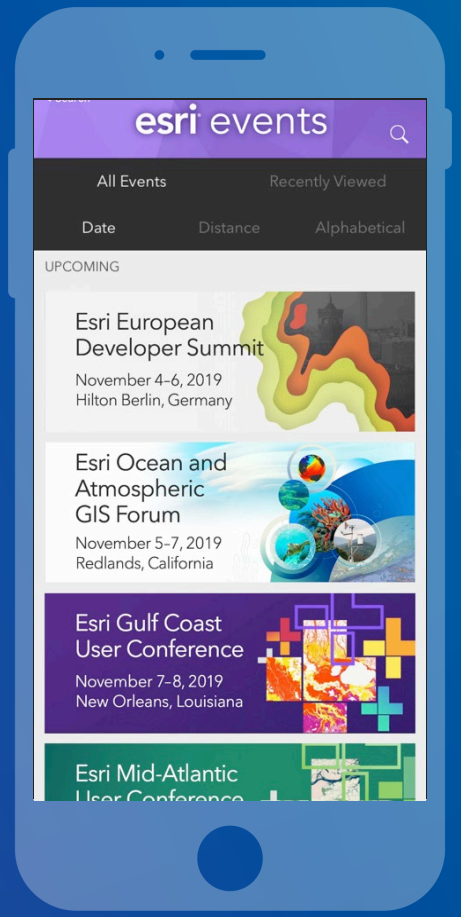
Data management with Python

# Conclusion

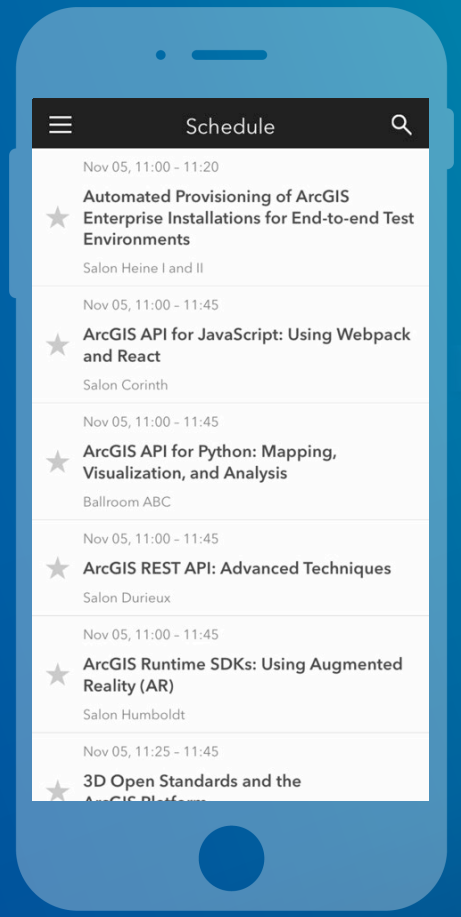
- Leveraging the existing environment
- Write your own code
- Import your own script
- Notebook Server will be the default kernel (you can bring notebooks)
- Available in ArcGIS Enterprise with Insights 3.2
- In the future for ArcGIS Online (no date)
- Ask questions on the Github page → place to collaborate
- Take into account your advice to improve the roadmap

# Please Take Our Survey on the App

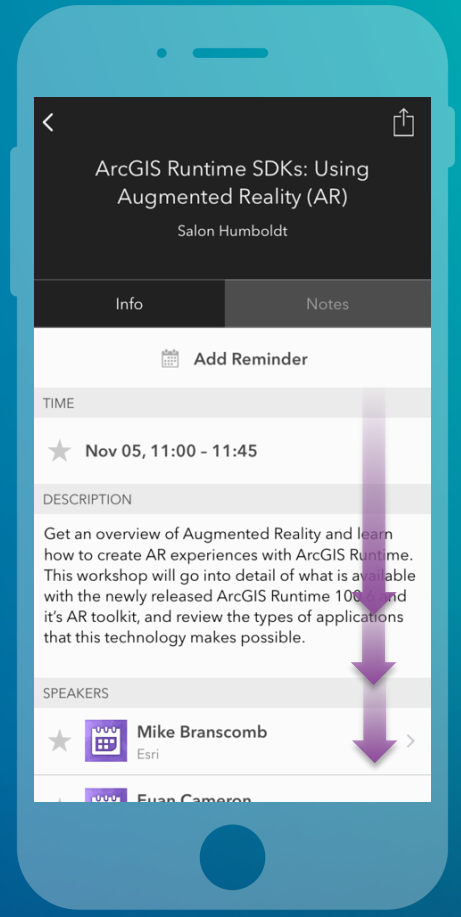
Download the Esri Events app and find your event



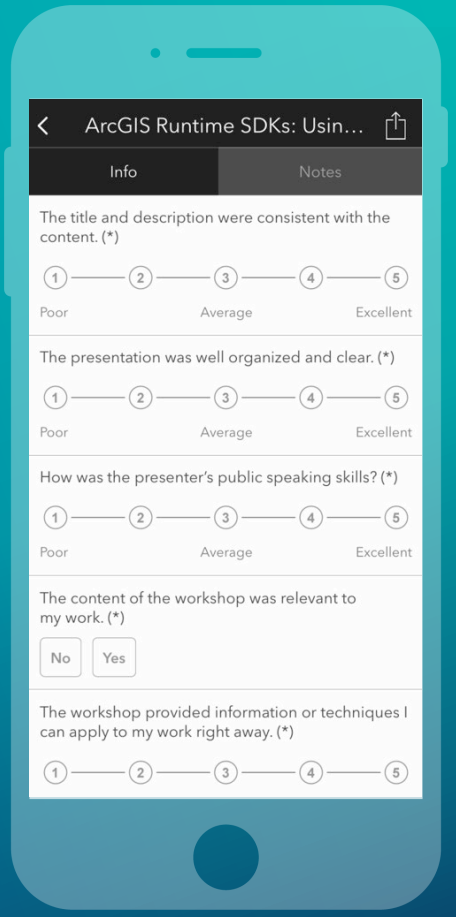

Select the session you attended




Scroll down to find the feedback section




Complete answers and select "Submit"



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