

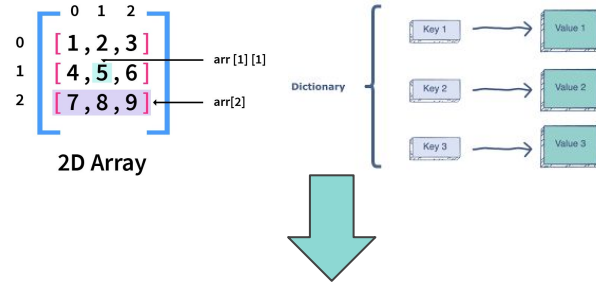
# Python Basics

## for Data Analytics and Visualization

Haris Gulzar  
AI Researcher



# Lecture 2: Moving towards real data



|    | A           | B        | C        | D           | E         | F        | G     |
|----|-------------|----------|----------|-------------|-----------|----------|-------|
| 1  | Donation ID | Donor ID | Type     | Method      | Status    | Amount   | Date  |
| 2  | D153        | S067     | Donation | Credit card | Completed | \$100,00 | 02.05 |
| 3  | D154        | S123     | Shirt    | Credit card | Abandoned | \$25,00  | 03.05 |
| 4  | D155        | S345     | Shirt    | Paypal      | Completed | \$25,00  | 07.05 |
| 5  | D156        | S367     | Donation | Cash        | Completed | \$50,00  | 07.05 |
| 6  | D157        | S121     | Shirt    | Paypal      | Failed    | \$25,00  | 07.05 |
| 7  | D158        | S112     | Donation | Credit card | Completed | \$75,00  | 10.05 |
| 8  | D159        | S055     | Donation | Credit card | Completed | \$100,00 | 12.05 |
| 9  | D160        | S089     | Donation | Paypal      | Completed | \$60,00  | 13.05 |
| 10 | D161        | S523     | Shirt    | Credit card | Failed    | \$25,00  | 15.05 |
| 11 | D162        | S123     | Shirt    | Cash        | Completed | \$25,00  | 17.05 |
| 12 | D163        | S165     | Donation | Paypal      | Abandoned | \$35,00  | 17.05 |
| 13 | D164        | S094     | Donation | Paypal      | Completed | \$75,00  | 21.05 |
| 14 | D165        | S054     | Donation | Credit card | Completed | \$50,00  | 22.05 |
| 15 | D166        | S031     | Shirt    | Credit card | Completed | \$25,00  | 24.05 |
| 16 | D167        | S451     | Donation | Cash        | Completed | \$100,00 | 24.05 |
| 17 | D168        | S112     | Shirt    | Credit card | Abandoned | \$25,00  | 27.05 |
| 18 | D169        | S002     | Donation | Paypal      | Failed    | \$50,00  | 27.05 |
| 19 | D170        | S112     | Shirt    | Credit card | Completed | \$25,00  | 30.05 |
| 20 | Total May   |          |          |             |           | \$895,00 |       |

Libraries



# Summary of Lecture 2



Numpy (For Numerical Operations in Python)

Pandas (For Structured Data)

Read Data From Excel spreadsheets and text files.

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| 19 | D170        | S112     | Shirt    | Credit card | Completed | \$25.00  | 30.05 |
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Burger,Henry,25063 S.W Leith Ave,Conway,AR,72032,(501) 216-1936  
Bryan,Derrick,526 W Mohawk Court,Fayetteville,AR,72783,(501) 937-3922  
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Curry,Betty,120 S. Hall Street,Phoenix,AZ,85015,(602) 741-0954  
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Lawler,Evelyn,579 S.W Sequoia Cir,Berkeley,CA,94701,(415) 670-5367
```

Everything for Data Analytics is possible!

Imagine Hard and Search the Solution!

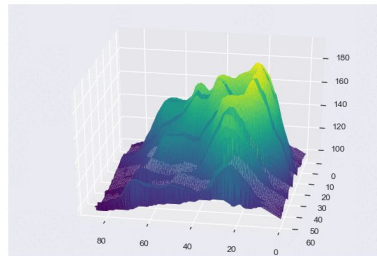
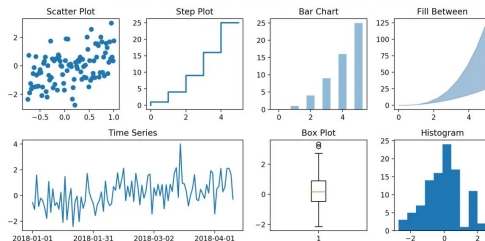
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Imagine Hard and Search the Solution!

# 3. Data Visualization and Clustering

## Data Visualization in Python

The best practice is to visualize the data at hand, before thinking about what we want to do with it. We will study different types of the data visualizations by plotting.



## Data Clustering

We will study the basic clustering techniques in Python like

1. K-means clustering
2. Hierarchical Clustering

