



DECODING
DATA SCIENCE

PANDAS

Cheat Sheet




[NAS.IO/ARTIFICIALINTELLIGENCE](https://nas.io/artificialintelligence)

1. Basic Commands

Pandas is a software library for Python that provides tools for data manipulation and analysis. It's important to ensure that the correct version of pandas is installed for compatibility with your code.

- Importing Pandas:



```
import pandas as pd
```

- Checking Pandas Version:



```
print(pd.__version__)
```



2. Dataframe Creation

Dataframes are two-dimensional labeled data structures with columns potentially of different types.
You can think of it like a spreadsheet or SQL table.

- From a list:

```
my_list = [1, 2, 3, 4, 5]  
df = pd.DataFrame(my_list, columns=['column_name'])
```

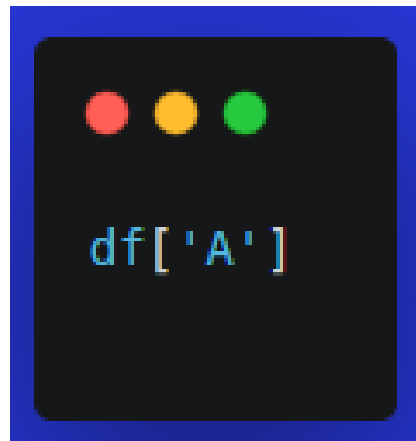
- From a Dictionary:

```
my_dict = {'A': [1, 2, 3], 'B': [4, 5, 6]}  
df = pd.DataFrame(my_dict)
```

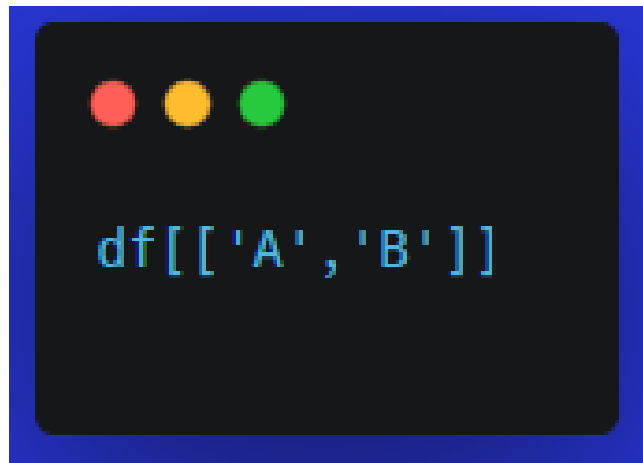


3. Data Selection

- Selecting a column:



- Selecting multiple columns:



Pandas provides different methods for data selection.



- Selecting rows:



```
df.loc[0] # row label  
df.iloc[0] # row index
```

- Selecting specific value:



```
df.at[0, 'A'] # row label and column name df.  
iat[0, 0] # row index and column index
```



4. Data Manipulation

Pandas provide various ways to manipulate a dataset.

- Adding a column:

```
df['C'] = pd.Series([7, 8, 9])
```

- Deleting a column:

```
df.drop('C', axis=1, inplace=True)
```



- Renaming columns:



```
df.rename(columns={'A': 'new_A'}, inplace=True)
```

- Applying a function to a column:



```
df['A'].apply(lambda x: x*2)
```



5. Data Cleaning

Data cleaning is detecting and correcting (or removing) corrupt or inaccurate records from a dataset.

- Checking for null values:

```
df.isnull()  
print(arr.dtype)
```

- Dropping null values:

```
df.dropna(inplace=True)
```



Filling null values:



```
df.fillna(value=0, inplace=True)
```

- Replacing values:




```
df.replace(1, 10, inplace=True)
```



6. Grouping & Aggregation

Grouping involves combining data based on some criteria, while aggregation is the process of turning the results of a query into a single row.

- Group by:



```
df.groupby('A')
```

- Aggregation:



```
df.agg({'A': ['min', 'max', 'mean', 'sum']})
```



7. Merging, Joining, and Concatenating

Pandas provides various ways to combine DataFrames including merge and join.

- Concatenating:

```
df1 = pd.DataFrame({'A': [1, 2, 3], 'B': [4, 5, 6]})  
df2 = pd.DataFrame({'A': [7, 8, 9], 'B': [10, 11, 12]})  
df = pd.concat([df1, df2])
```



- Merging:

```
df1 = pd.DataFrame({'A': [1, 2, 3], 'B': [4, 5, 6]})  
df2 = pd.DataFrame({'A': [1, 2, 3], 'C': [7, 8, 9]})  
df = pd.merge(df1, df2, on='A')
```

- Joining:

```
df1 = pd.DataFrame({'A': [1, 2, 3], 'B': [4, 5, 6]})  
df2 = pd.DataFrame({'C': [7, 8, 9]})  
df = df1.join(df2)
```



8. Working with Dates

Pandas provides powerful functionalities for working with dates.

- Convert to datetime:

```
df['date'] = pd.to_datetime(df['date'])
```

- Extracting date parts:

```
df['year'] = df['date'].dt.year  
df['month'] = df['date'].dt.month  
df['day'] = df['date'].dt.day
```



9. File I/O

Pandas can seamlessly read from and write to a variety of file formats.

- Reading a CSV file:

```
df = pd.read_csv('file.csv')
```

- Writing to a CSV file:

```
df.to_csv('file.csv', index=False)
```

- Similarly for other file formats like

```
Excel (read_excel, to_excel), JSON (read_json, to_json), SQL (read_sql, to_sql), etc.
```



Next Steps

1. **Advanced Visualization Workshops:** Dive deeper into the intricacies of data visualization with hands-on workshops.
2. **Data Science Bootcamps:** A comprehensive, project-based learning experience to enhance your data science skills.
3. **AI Innovation Hub:** Collaborate with fellow learners and industry experts on cutting-edge AI projects.
4. **Community Webinars:** Regular webinars on the latest trends, tools, and best practices in AI and Data Science.
5. **Peer-to-Peer Learning:** Engage in discussion forums, group projects, and mentorship programs.



[NAS.IO/ARTIFICIALINTELLIGENCE](https://nas.io/artificialintelligence)

Take Action Now

SELF PACED COURSE

Generative AI (chatGPT) for Business

By Mohammad Arshad

Course: Generative AI(ch...

★ The "Mastering Generative AI for Business Success with ChatGPT"...

7 items inside

SELF PACED COURSE

PROMPT ENGINEERING FOR DEVELOPERS

By Mohammad Arshad

Course: Prompt Engineeri...

💡 Unlock the power of prompt engineering in machine learning...

10 items inside

SELF PACED COURSE

Basic Excel for Data Science

By Mohammad Arshad

Course: Master Excel for D...

★ Master Data Science with Excel: Unlock Insights and Boost Your...

12 items inside

SELF PACED COURSE

Basic SQL for AI/Data Science

By Mohammad Arshad

Course: Basic SQL for AI/D...

In the realm of AI and Data Science, the ability to efficiently retrieve an...

12 items inside

SELF PACED COURSE

Basic Python for AI/Data Jobs

By Mohammad Arshad

Course: Basic Python

Python is a versatile and widely-used programming language...

7 items inside

SELF PACED COURSE

Advanced Python for AI/Data

By Mohammad Arshad

Course: Advanced Python

Delve deeper into the world of Python with our comprehensive...

8 items inside

SELF PACED COURSE

Basic PowerBI for AI/Data Science

By Mohammad Arshad

Basic PowerBI for Data Sci...

Basic PowerBI for Data Science. Power Query, DAX and Dashboards

9 items inside

RECORDINGS

Outcome based Workshops

By Mohammad Arshad

Outcome Based Worksho...

Outcome Based Workshops series

14 items inside

Co-authored by | Updated Regularly

Generative AI Resources

By Mohammad Arshad

Generative AI Resources

Looking to stay on the cutting edge of technology? Check out our...

7 items inside

Meetup RECORDINGS

AI Community Meetup Recordings

By Mohammad Arshad

Meetup Sessions

Meetup Sessions recordings for all speakers

@decodingdata science

Ready to use Resume Template

By Mohammad Arshad

Ready to Use Resume Te...

Introducing our Ready to Use Resume Template - the perfect to...

@decodingdata science

LinkedIn Profile Optimization 20 Checklist

By Mohammad Arshad

LinkedIn Profile Optimizati...

Introducing our LinkedIn Profile Optimization 20 Checklist - the...

Sep 9 Sat

18th AI Community Meetup

Saturday, 9 September

4:00PM - 5:00PM ⓘ

Online

With Mohammad Arshad

I'm Going

Sep 10 Sun

Data Science/AI Career Talk

Sunday, 10 September

12:00PM - 1:00PM ⓘ

Online

With Mohammad Arshad

I'm Going

Sep 12 Tues

Generative AI/AI Uses

Tuesday, 12 September

7:00PM - 8:00PM ⓘ

Online

With Mohammad Arshad

I'm Going

Sep 16 Sat

19th AI Community Meetup

Saturday, 16 September

4:00PM - 5:00PM ⓘ

Online

With Mohammad Arshad

I'm Going

Sep 17 Sun

Data Science/AI Career Talk

Sunday, 17 September


12:00PM - 1:00PM ⓘ

Online

I'm Going



[NAS.IO/ARTIFICIALINTELLIGENCE](https://nas.io/artificialintelligence)







Importance of Domain Knowledge

Decoding Data Science



Public

6 videos No views Updated 4 days ago


 


No description

-  Sort
- 


Importance of Domain

Decoding Data Science • 31 views • 2 months ago
- 


Data Career Options

Decoding Data Science • 24 views • 2 months ago
- 


Data Science Career Exploration

Decoding Data Science • 32 views • 1 month ago
- 

Data Career Exploration

Decoding Data Science • 31 views • 1 month ago
- 

Linkedin Growth using Data

Decoding Data Science • 30 views • 2 weeks ago
- 

Scratch to Data Jobs in 3 months

<https://www.youtube.com/@decodingdatascience/>



[NAS.IO/ARTIFICIALINTELLIGENCE](https://www.nas.io/artificialintelligence)

Join Our AI Community

Being part of an AI community like ours offers multiple benefits. You can network with like-minded individuals, learn from experienced professionals, and stay up-to-date with the latest AI trends and developments.

Whether you're a beginner looking to start your journey in AI, or an experienced professional looking to enhance your skills, our community has something to offer.

Join us and be a part of this exciting journey. Learn more, Grow more!

Click the link in the footer to join us today!

