Day5_Regex_Internship

Overview

On Day 5 of the Regex Internship, we started by understanding the difference between Data Science and Data Engineering, followed by a comprehensive introduction to Python programming. Topics covered included variables, printing techniques, string formatting, comments, operators, conditional statements, and string slicing/indexing.

Data Science vs Data Engineering

Data Science is primarily focused on analyzing and interpreting complex data to support decision-making using statistics, machine learning, and data visualization.

Data Engineering focuses on building data pipelines and infrastructure to collect, store, and prepare data for analysis.

Feature	Data Science	Data Engineering
Focus	Analysis & modeling	Infrastructure & data pipelines
Tools	Python, R, Jupyter, Pandas	SQL, Spark, Airflow, Kafka
Output	Reports, models, predictions	Clean, structured, usable data
Skills	Statistics, ML, Visualization	ETL, Database Systems, Programming

Python Basics

```
### Printing in Python
print("Hello World", end = "-")
print("Hello Ashish")

### Variables and Data Types
x = '10'
print(type(x))

### Concatenation and Print with Variables
y = 2025
company = "Regex Software"
print("My year is", y)
print("Company name is", company)

### String Formatting using f-strings
y = 2025
company = "Regex Software"
print(f"My year is {y} and company is {company}")

### Multiline Strings
x = '''bla bla bla bla
```

```
bla bla bla bla
bla bla bla '''
print(x)
```

Comments in Python

Single-line Comment
```
# This is a comment
```

Multi-line Comment
```
'''
Multiline Comment
Line 1
Line 2
Line 3
'''
```

String Example and Output Understanding
```
username = "Tushar"
message = f"Happy bd {username}"
print(message)

username = "Isha"
print(message)
```

Basic Arithmetic Operators
```
print(5 + 3)   # 8
print(10 - 4)  # 6
print(2  3)  # 8
print(10 // 3) # 3
```

Comparison Operators
```
print(5 == 5)
print(5 != 3)
print(7 > 2)
```

Conditional Statements

if-else
```
x = 10
if x > 5:
```

```python
print("Greater than 5")
else:
print("Less or equal to 5")

### if-elif-else
x = 0
if x > 0:
print("Positive")
elif x < 0:
print("Negative")
else:
print("Zero")

### Nested if-else
x = 15
if x > 10:
if x < 20:
print("Between 10 and 20")
else:
print("Greater than or equal to 20")
else:
print("10 or less")
```

String Indexing and Slicing

```python
text = "RegexInternship"
print(text[0])      # R
print(text[-1])     # p
print(text[0:5])    # Regex
print(text[5:])     # Internship
print(text[:5])     # Regex
```