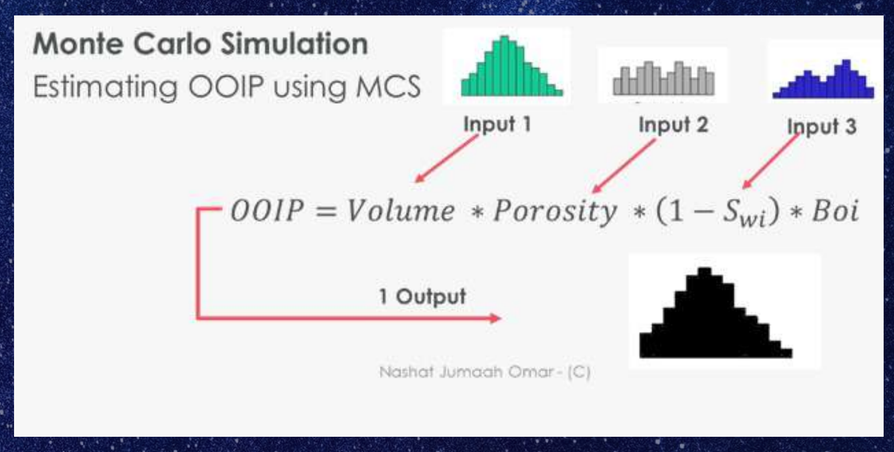
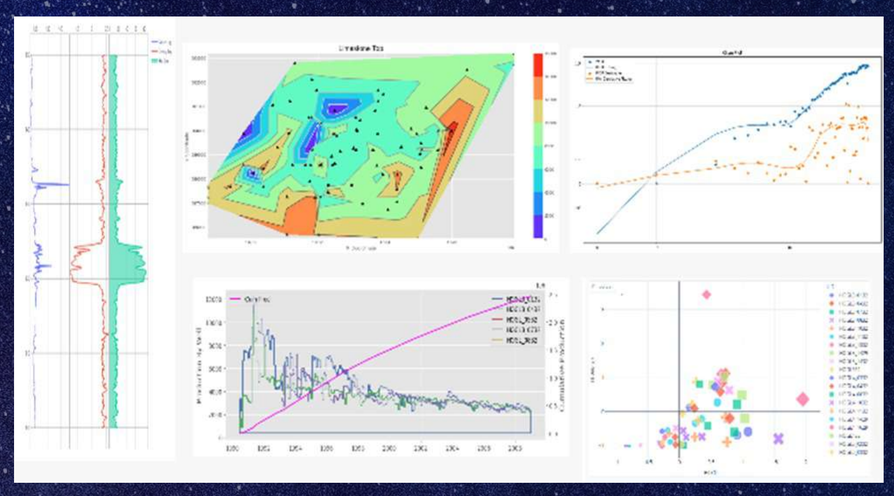
PEA
PETROLEUM ENGINEERS ASSOCIATION

2 WEEKS ONLINE TRAINING PROGRAM ON

PYTHON FOR RESERVOIR & PRODUCTION ENGINEERING

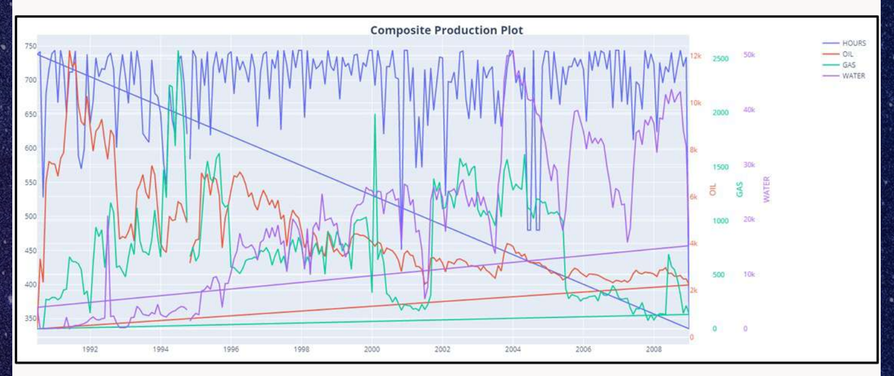
python™





MR. NASHAT JUMAAH

11+ YEARS EXPERIENCE
IN OIL AND GAS INDUSTRY



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COURSE INTRODUCTION

Welcome to the Python for Reservoir & Production Engineering course! This intensive 2-week online program is designed to equip you with the practical Python skills you need to excel in your oil and gas career.

In this course, you'll go beyond theory and dive straight into real-world applications. You'll work with diverse oil and gas datasets, learning how to analyze well performance, production trends, and reservoir behavior.

You'll also create engaging dashboards to visualize key metrics, automate repetitive tasks with Python libraries, and build the foundation for advanced data analysis and machine learning.

By the end of this program, you'll have a portfolio of practical projects showcasing your expertise in Python for reservoir and production engineering.

Whether you're a reservoir engineer, production engineer, geologist, or anyone working with oil and gas data, this course will give you the tools to make data-driven decisions and drive better results in your work.

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ACCREDITED

ISO 9001:2015 CERTIFIED

MSME
MICRO, SMALL & MEDIUM ENTERPRISES

WHO SHOULD ATTEND: AUDIENCE

- Production Engineers
- Chemical Engineers
- Drilling Engineers
- Geologists & Petrophysics
- Reservoir Engineers
- AL & Workover Engineer
- Undergraduate Students

PREREQUISITES

- No knowledge is required.
- A working laptop with Windows OS.

WHAT YOU WILL GET FROM JOINING

- Access to Video Recordings on daily basis.
- Study materials ppt, pdf
- Oil and Gas Datasets

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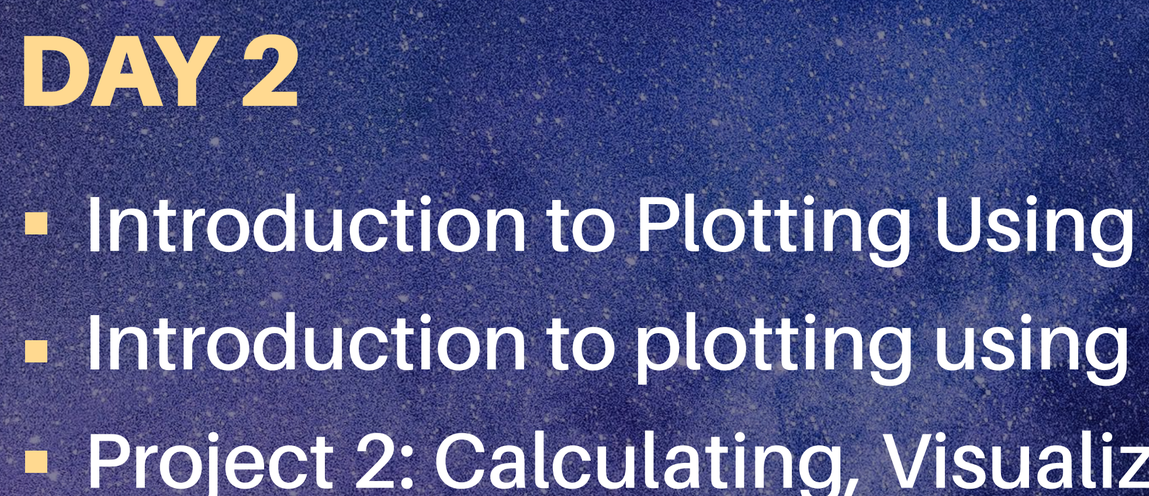
PYTHON FOR PRODUCTION MODULE

DAY 1

- Introduction to Python basics
- Python IDEs and available tools
- Python Data Structures
- Loops and Branching.
- Introduction to Tabular data Using pandas
- Project 1: Calculating Production Parameters from Tabular Data using Pandas

DAY 2

- Introduction to Plotting Using Matplotlib
- Introduction to plotting using Plotly
- Project 2: Calculating, Visualizing, Exporting Fluid Properties.
- Project 3: Calculating the Heterogeneity index for Oil Wells.
- Introduction to Lasio library for Well Log files.



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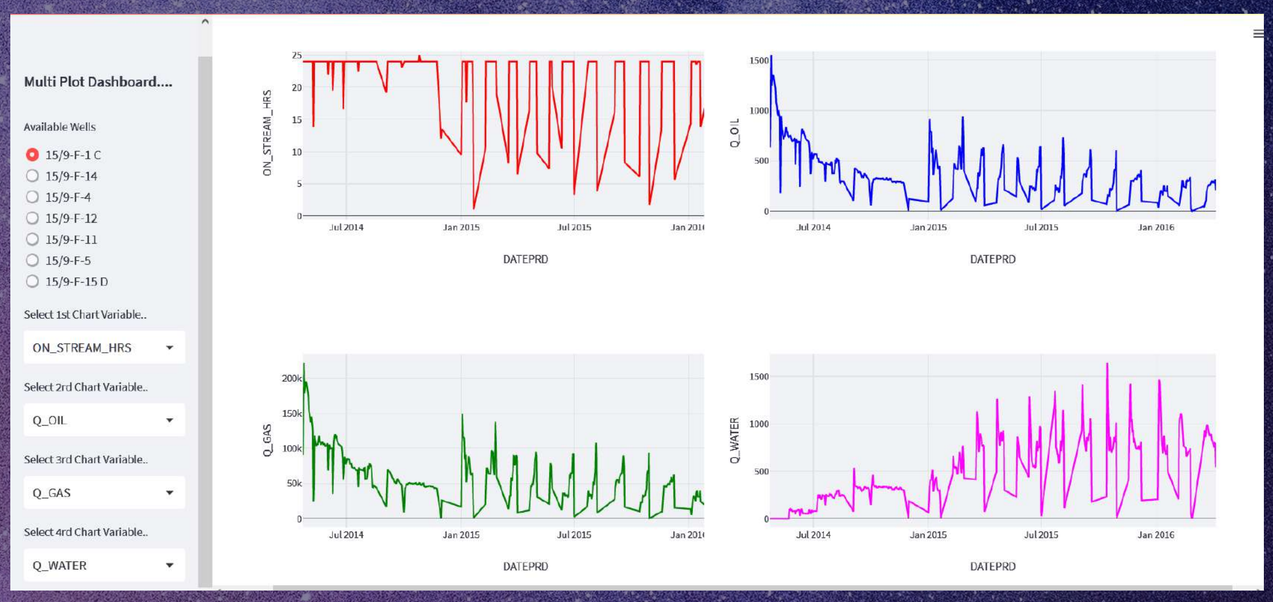
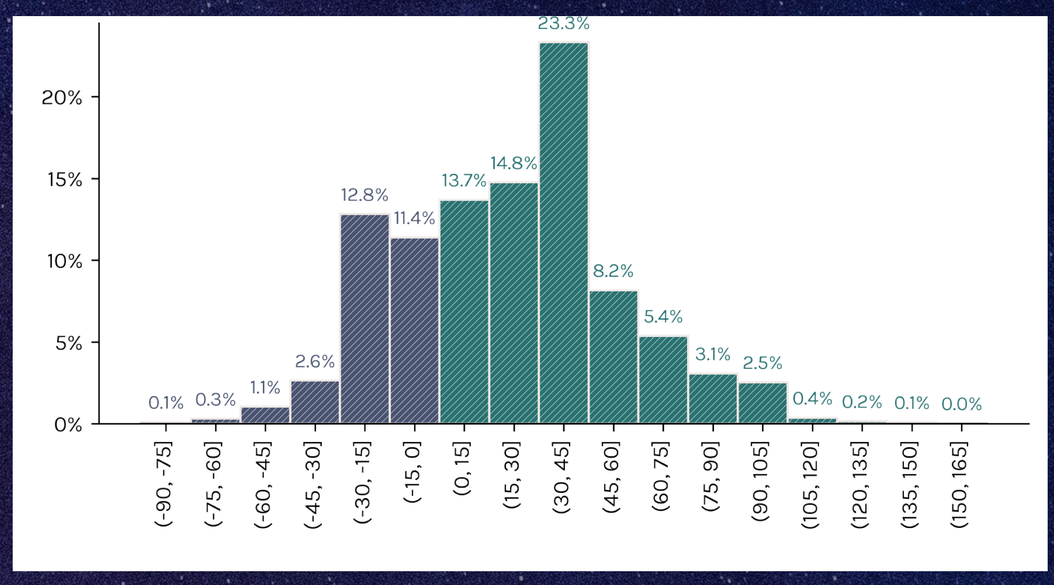
DAY 3

- Project 4: Well Log Interpretation and Visualization using Python
- Introduction to IPM PVTp OpenServer Commands
- Introduction to IPM MBAL OpenServer Commands
- Project 5: Controlling IPM package using DO, SET, GET and Python

DAY 4

- Introduction to Streamlit dashboarding and the visual components
- Introduction to Curve Fitting.
- Project 6: Water Production Diagnostics via Chan Plot.
- Project 7: Grid, and heat Mapping for Reservoir Production and Petrophysical Properties.





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DAY 5

- More on data Manipulation and Advanced pandas.
- Introduction to Statistics and Distribution
- Introduction to fast Dashboarding using Gradio.
- Project 8: Carlo Simulation and Histograms for OOIP

LIST OF ALL PROJECTS:

Project 1: Calculating Production Parameters from Tabular Data using Pandas

Project 2: Calculating, Visualizing, Exporting Fluid Properties.

Project 3: Calculating Heterogeneity Index for Oil Wells.

Project 4: Well Log Interpretation and Visualization using Python

Project 5: Controlling IPM package using DO, SET, GET and Python

Project 6: Water Production Diagnostics via Chan Plot.

Project 7: Grid, and heat Mapping for Reservoir Production and

Project 8: Carlo Simulation and Histograms for OOIP

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PYTHON FOR RESERVOIR ENGINEERING AND SURVEILLANCE MODULE

DAY 6

- Introduction to Python basics
- Python IDEs and available tools
- Python libraries and PIP command
- Use Case 1: Inflow Performance Relationship
- Introduction to plotting
- Use Case 2: Create Interactive Production Plots

DAY 7

- Handling tabular data using Pandas
- Using Plotly for Interactive data visualization
- Use Case 3 : Create a Composite Production Plot with Multiple Y Axis
- Liquid Loading Calculation in Python.
- Use Case 4: Turner's & Colman's Rate for Gas Well Diagnostics

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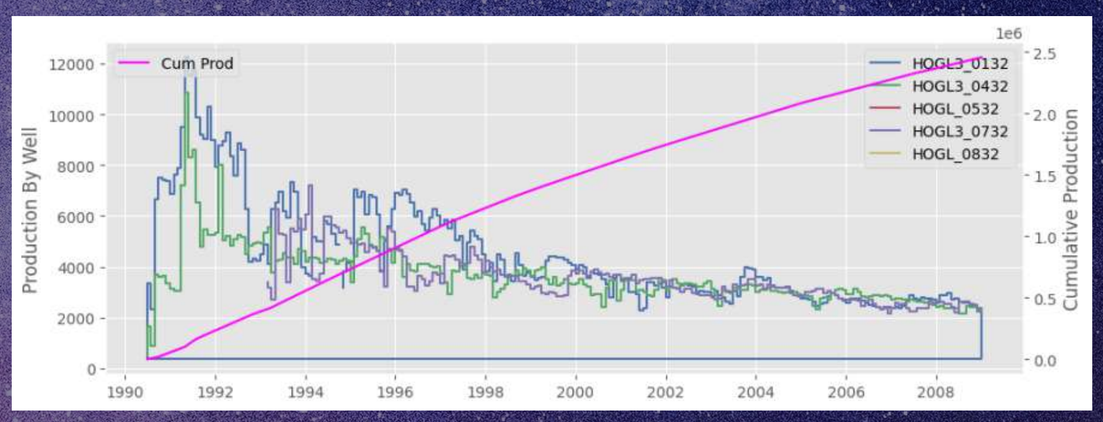
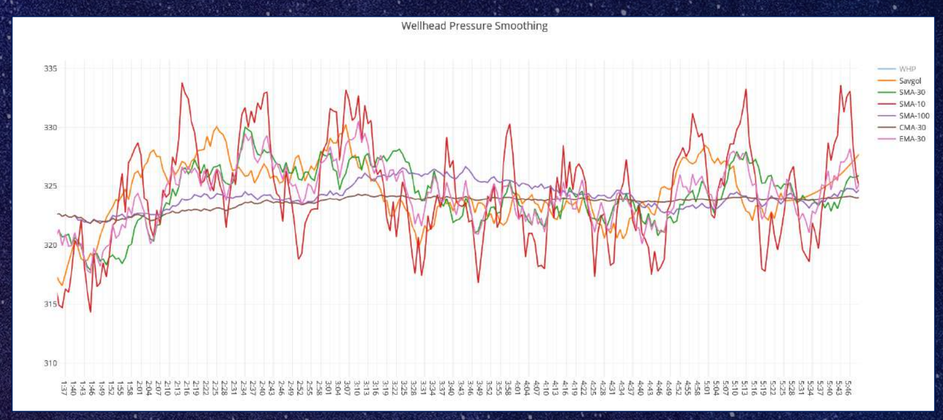
DAY 8

- Python automation and Integration
- Introduction to PETEX GAP.
- Introduction to GAP API.
- DO, SET, GET commands in GAP and Open Server Integration with Python
- Use Case 5: Connecting GAP to Python for various tasks.

DAY 9

- Introduction to Dashboarding with Streamlit
- Use Case 6: Create a Production Dashboard for Oil and Gas Fields
- Introduction to Well Integrity and Barlow Equation.
- Introduction to Lasio library for Well Log files.
- Use Case 7: Calculated MAOP from MultiFinder logs(MFC)





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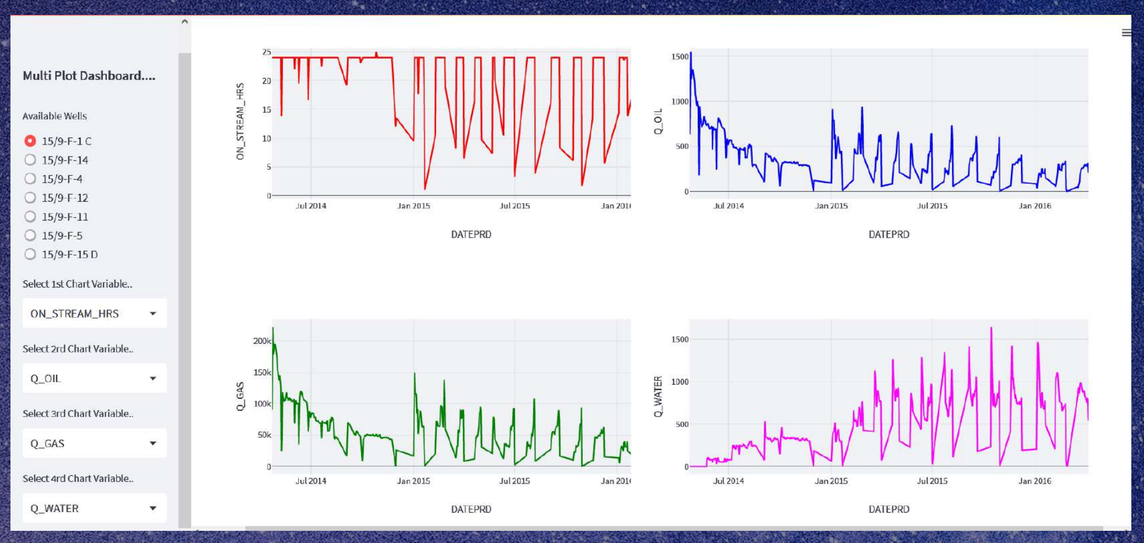
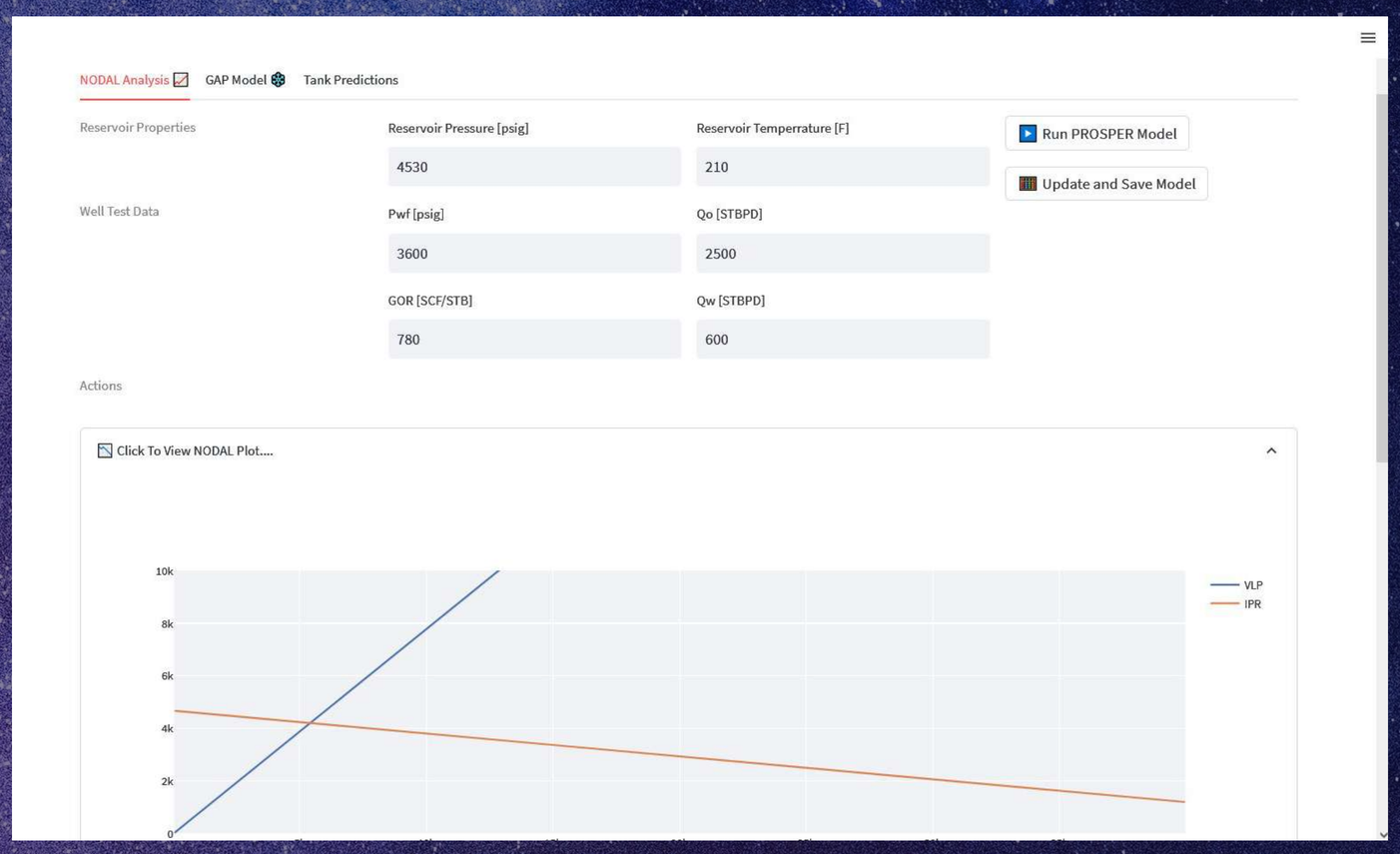
DAY 10

- Use Case 8 : Converting WHP to BHP using Beggs and Brill Correlation
- Use Case 9 : Operational Data Smoothing using various Filters and AVG algorithms
- Use Case 10: Automated Decline curve analysis (Time-Rate)





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