

MIE 1624: INTRODUCTION TO DATA SCIENCE AND ANALYTICS

GROUP 17: CREATING AND DESIGNING THE DATA SCIENCE EDUCATION

Team Members: Hajra Begum, Harsh Panchal, Aditya Subramaniam, Kaan Kucukoglu, Shresh Mathur, Shreyas Choudhary



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PROJECT STATEMENT

- ▶ We are in the Data Science Era.
- ▶ The demand for this new breed of professionals (Data Scientist) skilled in data analytics, machine learning, and artificial intelligence requires a response from both higher education and workforce development.
- ▶ Part-1: Why redesign an introductory course 'MIE 1624 :Introduction to Data Science and Analytics'?
- ▶ Part-2: Why design an efficient program: Master of Data Science and Artificial Intelligence?
- ▶ Part-3: Need to Innovate as Data Scientist

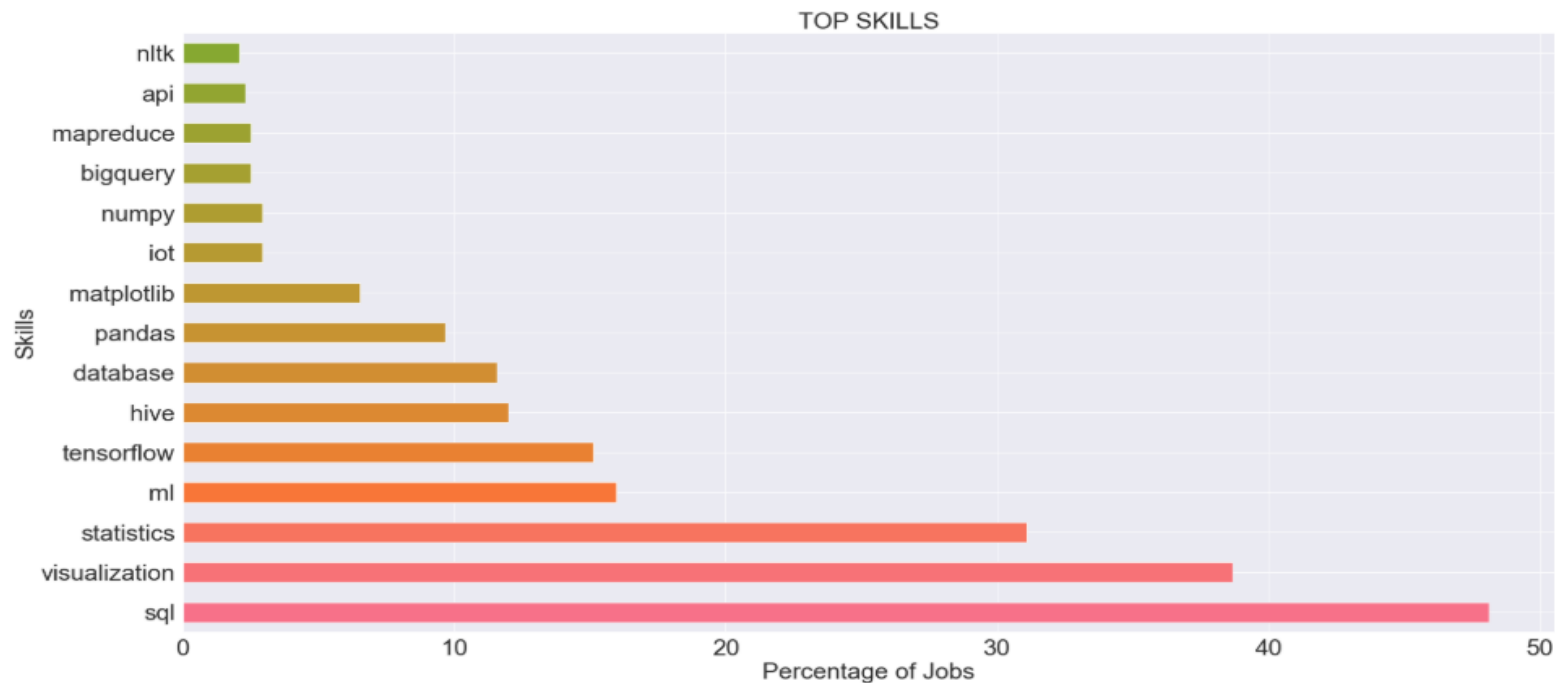


DATA SOURCES:

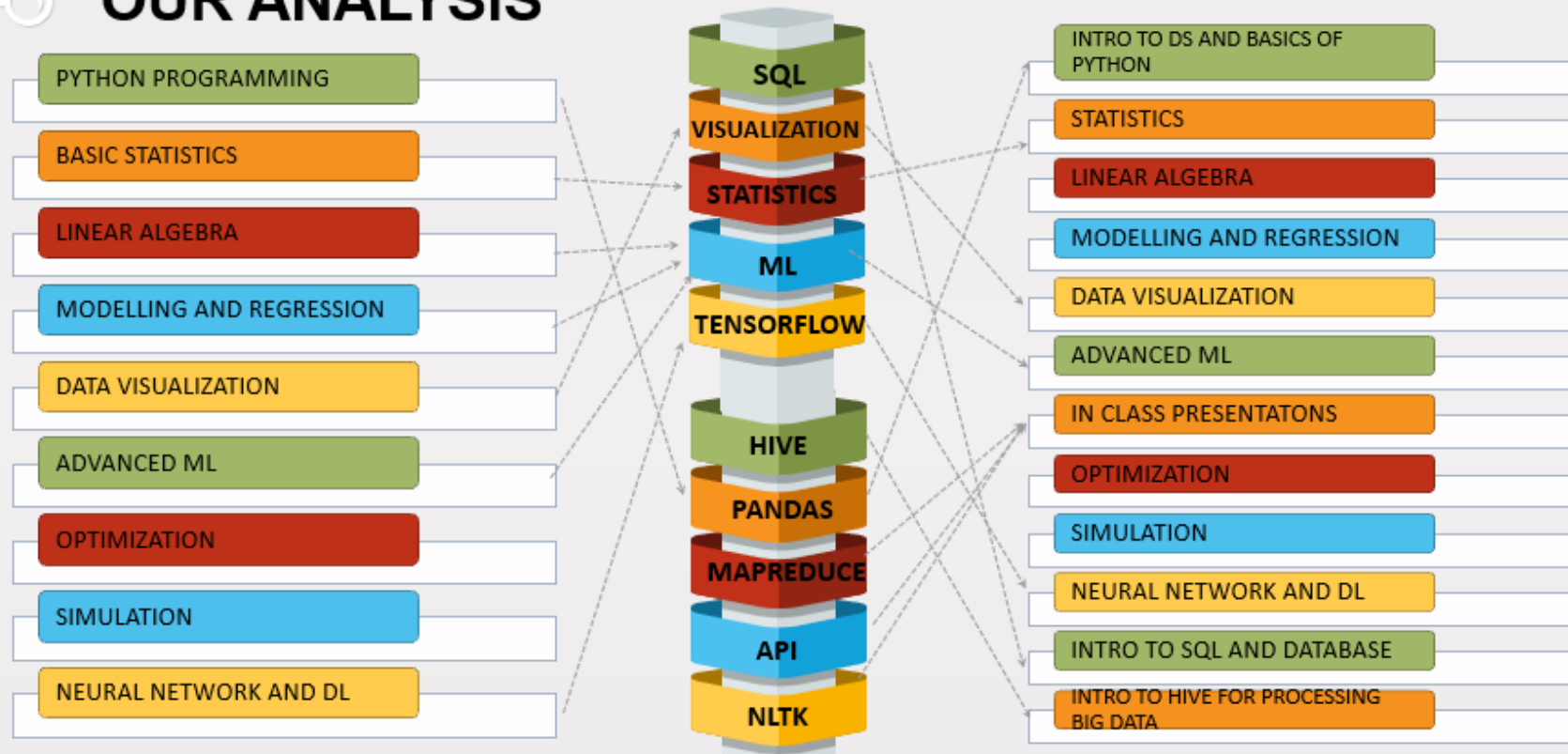


- ▶ Data from Indeed Canada ,LinkedIn and Coursera for course Design.
- ▶ Kaggle Machine Learning and Data Science Survey 2019 dataset

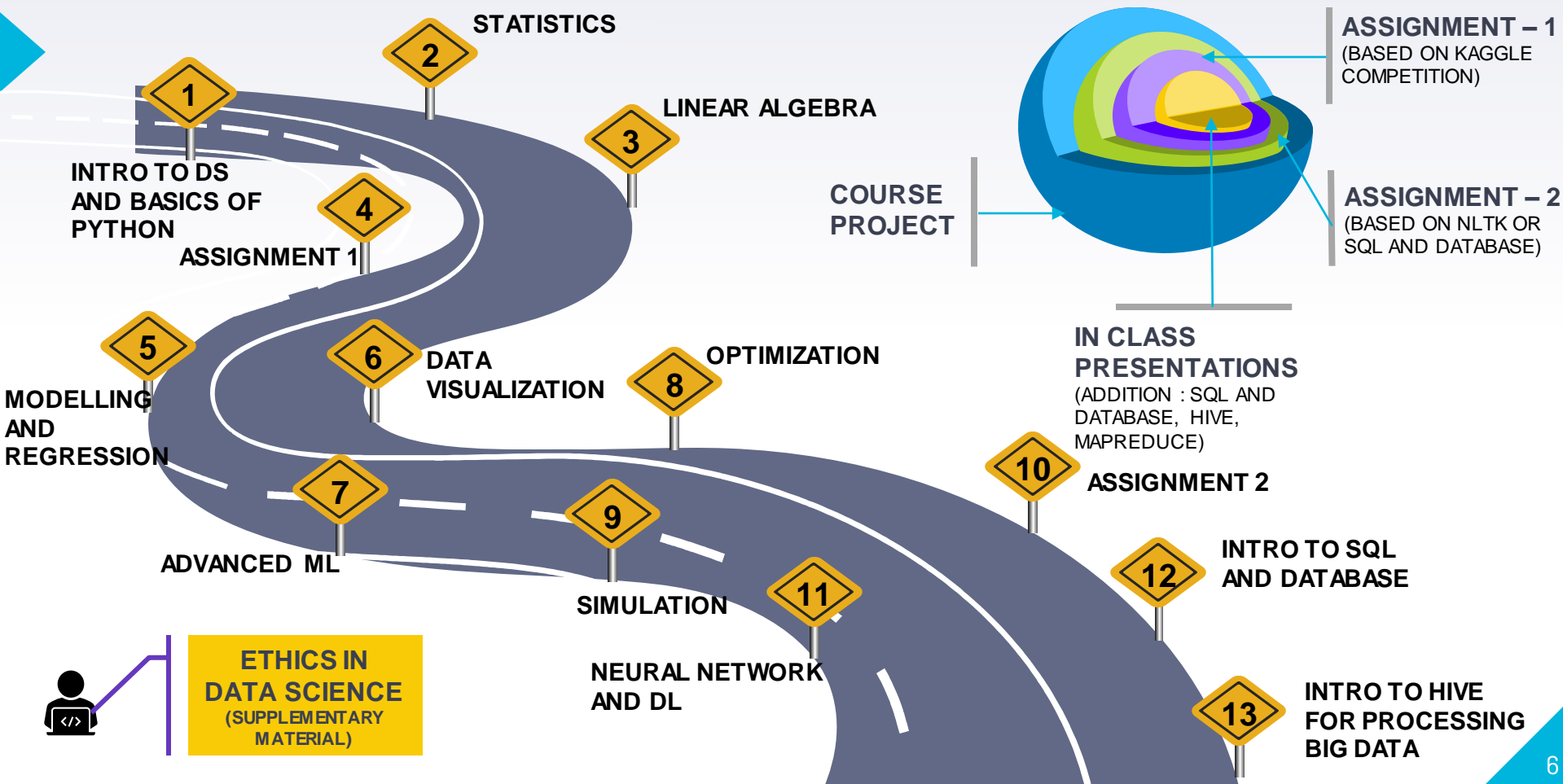
REDESIGNING MIE 1624



OUR ANALYSIS



DATASCIENCE – PROPOSED COURSE



DESIGNING THE PROGRAM

DATA SOURCES

- Kaggle Dataset
- Job postings (Indeed, LinkedIn)

KAGGLE DATASET

- Categorize job titles based on salary

JOB TITLES SCRAPPED

- Mid-level
 - Data Analyst
 - Business Analyst
- High-level
 - Data Scientist
 - Machine Learning Engineer
 - Senior Data Analyst
 - Data Engineer

HIERARCHIAL CLUSTERING

- To identify subjects in the course curriculum

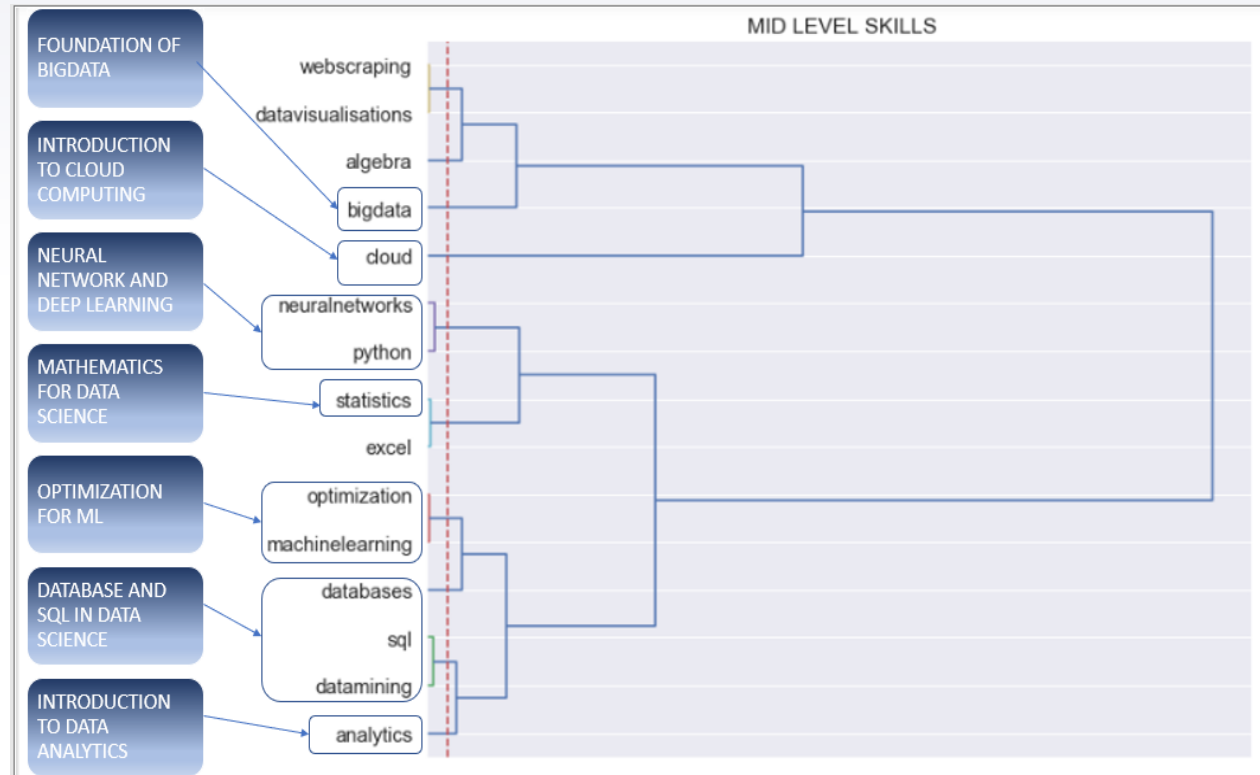


HIERARCHICAL CLUSTERING- MID LEVEL JOBS



COURSES IDENTIFIED FROM THESE SKILLS:

- Introduction to Data Analytics: Basic Methods
- Foundations of Big Data
- Data Science
- Database and SQL in Machine Learning
- Mathematics in Data Science
- Neural Networks and Deep Learning
- Introduction to Cloud Computing
- Optimization for Machine Learning

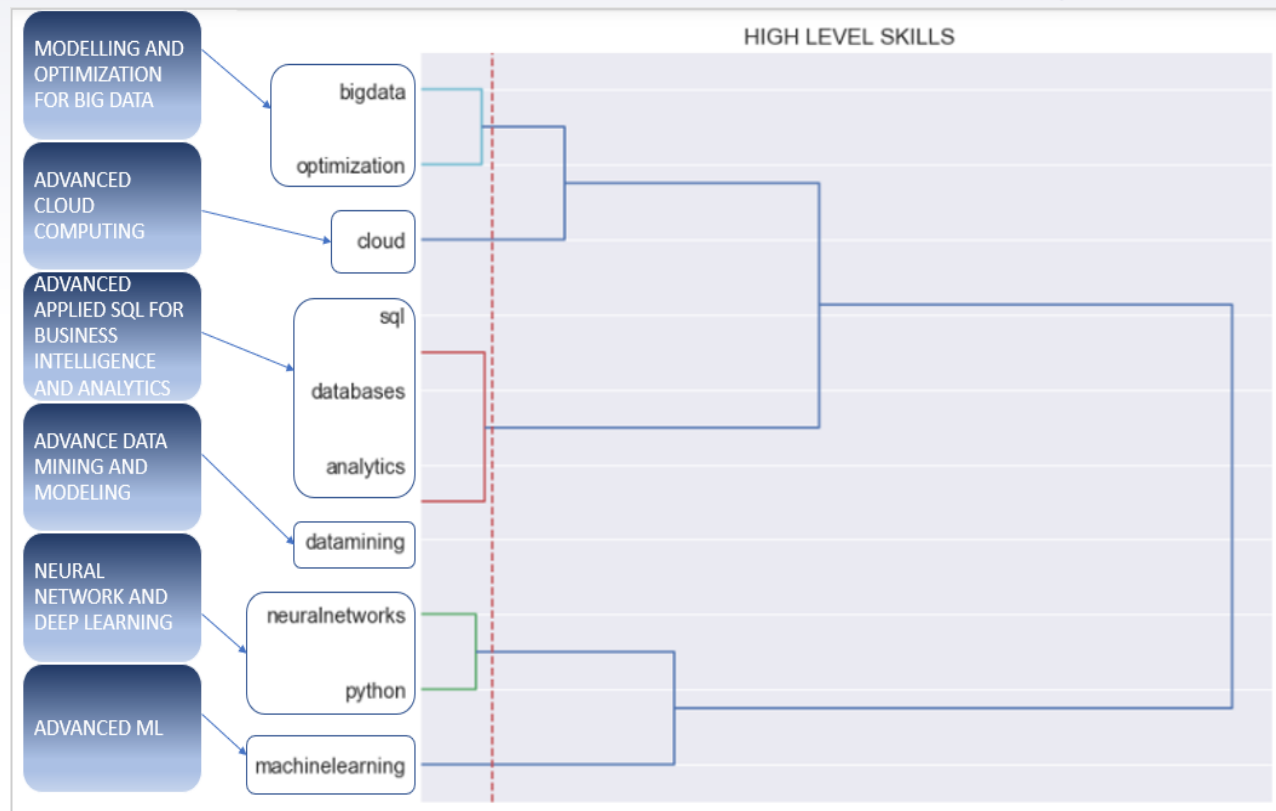


HIERARCHICAL CLUSTERING- HIGH LEVEL JOBS



COURSES IDENTIFIED FROM THESE SKILLS:

- Advanced SQL for Data Science
- Advanced Cloud Computing
- Modelling and Optimization for Big Data



OTHER COURSES

Management& Technology Consulting

Leading for Group organizations

Project Management

Soft Skills &Presentations

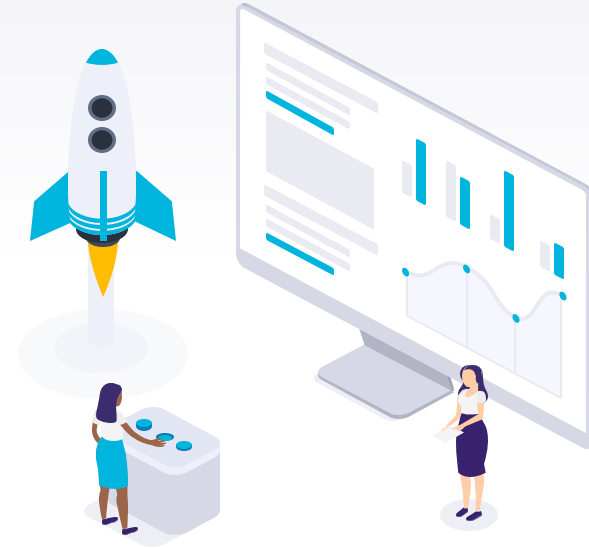
Business Analytics

Reinforcement Learning

Trustworthy Machine Learning

Time Series Analysis and Forecasting

Operations Research and Management for Data Science



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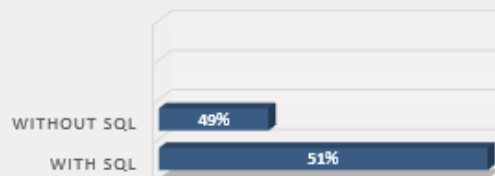
MANDATORY COURSE: INTRODUCTION TO DATA ANALYTICS: BASIC METHODS



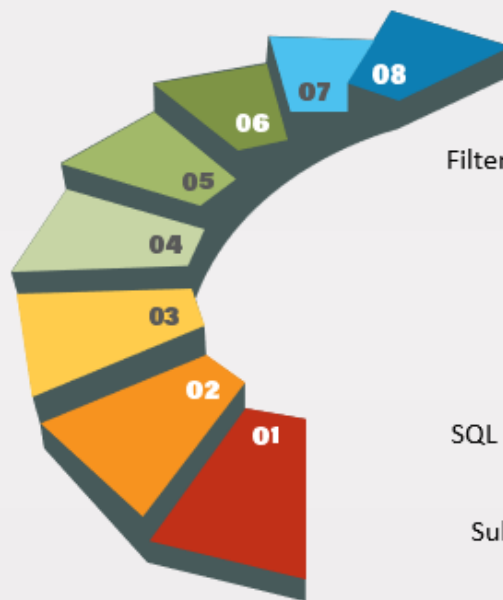
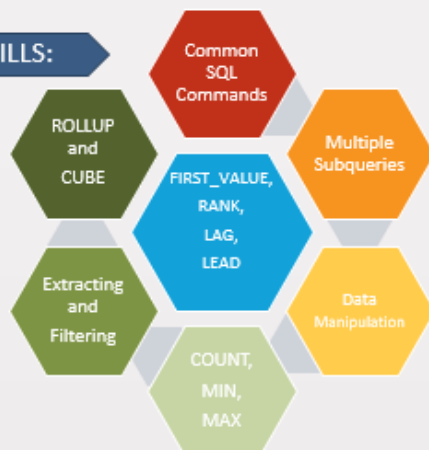
CORE COURSE: DATABASE AND SQL IN DATA SCIENCE

DATABASE AND SQL IN DATA SCIENCE

JOB COUNTS

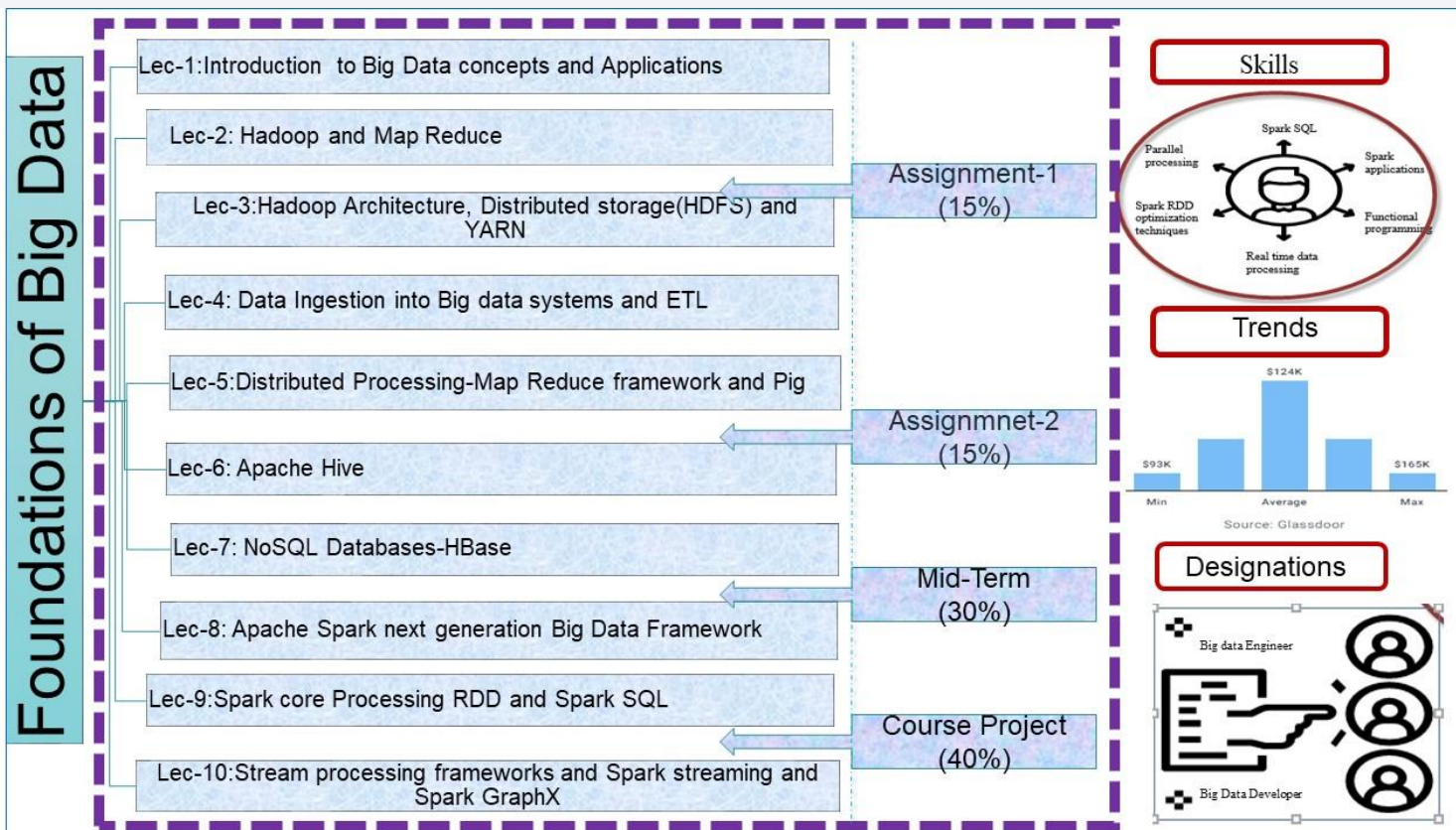


SKILLS:

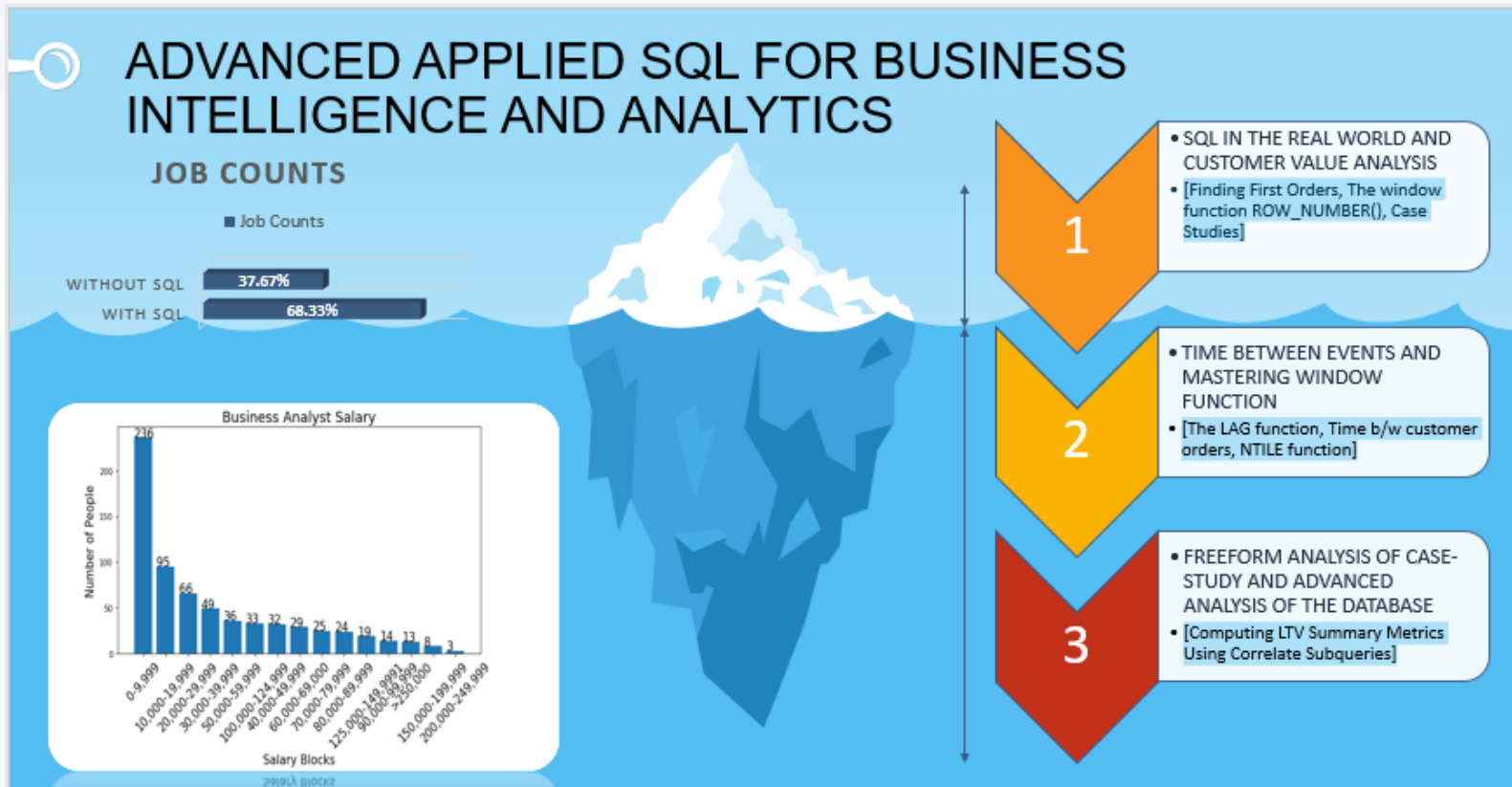


- Final Project 08
- Window Functions and Ordered Data 07
- Filtering, Joins and Aggregation 06
- Data Munging 05
- Basic Statistics with SQL 04
- SQL as a Tool for Data Science 03
- Subqueries and Temp Tables 02
- Basic SQL 01

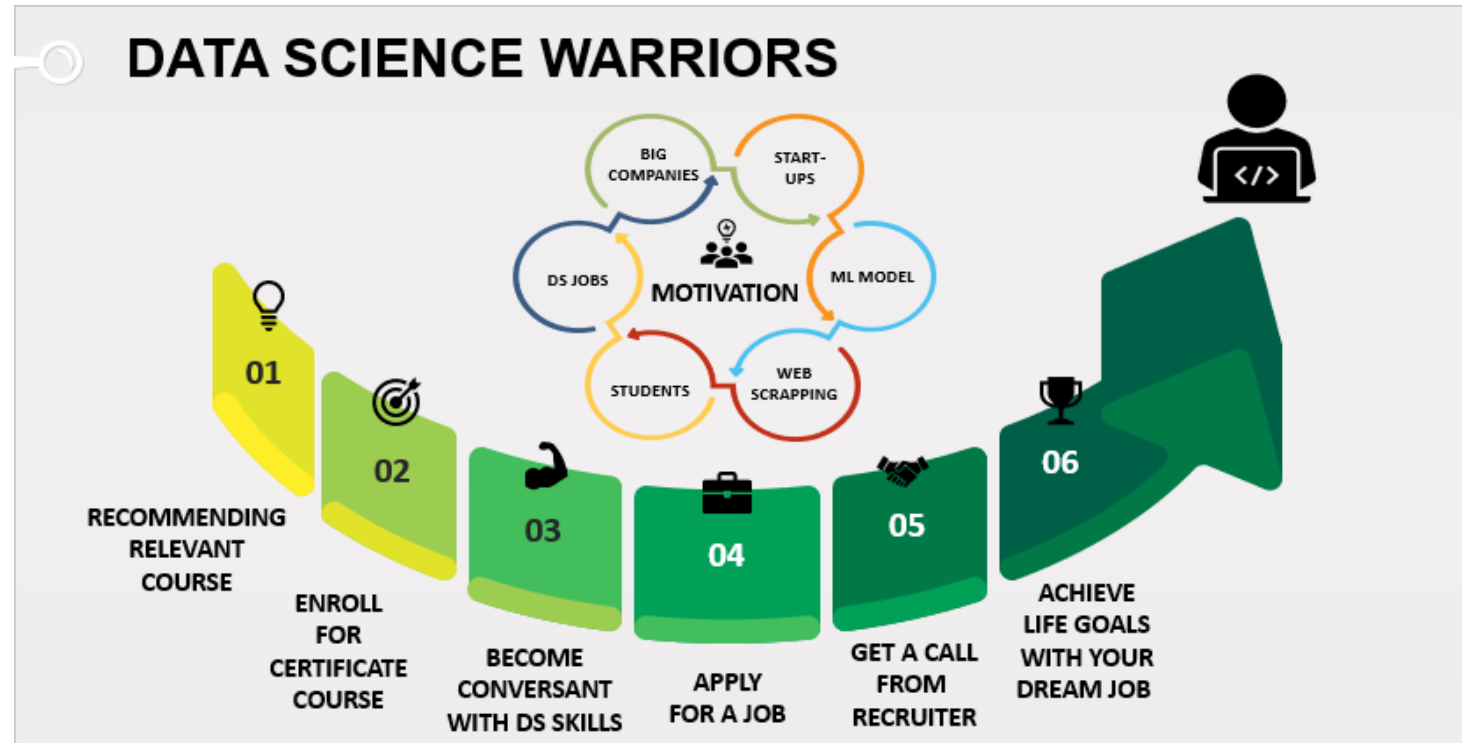
CORE COURSE: FOUNDATIONS OF BIG DATA



ELECTIVE COURSE: ADVANCED APPLIED SQL FOR BUSINESS INTELLIGENCE AND ANALYTICS



INTRODUCING NEW CONCEPT – DATA SCIENCE WARRIORS



THANKS!

Any questions?

