Azubi Africa partners with Scalework (a German-based Data Science Company) to offer the Data Analytics Program. This program introduces quantitative methods used to analyze data and make better management decisions. This 9-month course takes a project-based approach focusing on building competency in key tools to improve your analytical toolset, and your ability to apply course concepts to solve problems. During the first 12 weeks, you will heavily focus on acquiring relevant skills. Afterwards, you will build yourself the project portfolio that will get you into a job.

Module	Week	Projects	Key Concepts	Key Exercises
Microsoft Excel	**1 Basic Excel & Intro to Statistics**	Use Excel functions and Statistics to generate insights for a Grocery Store	- Introduction to Excel - Excel Functions - Pivot Tables - Power Pivot - Descriptive Statistics	- Solve a business challenge utilizing Excel functions - Create a summary report and visualize findings using pivot charts - Graded Quiz
	2 Hypothesis & Visualization	National Park Services Visualization	- Hypothesis Testing - Data Visualization Techniques - Creating advanced Visuals in Excel	- Answer questions on Hypothesis Testing - Discover relationships between variables with Correlation - Visualize data with MS Excel inbuilt charting tools - Graded Quiz
	3 Power Query and Intro to Power BI	Visualize LinkedIn Data in Power BI	- Introduction to the Power Query add-in - Import data from various sources - Transform Data with Power Query - Introduction to Power BI - Data Modelling in Power BI	- Upload and clean data using Power Query - Build a Report with Power BI - Graded Quiz

Learning requirements: In order to earn a Scalework Certificate, participants must complete all modules, including satisfactory completion of associated quizzes, and projects by stated deadlines.

Module	Week	Projects	Key Concepts	Key Exercises
Databases	**4 Introduction to DB**	- SQL fundamental syntax	- What are Databases - Types of Databases - SQL fundamental syntax	- Create, alter, and delete SQL databases - Graded Quiz
Python Fundamentals	**5 Introduction to Python**	- The Tip Calculator Project - Mortgage Payments Calculator project - Number Guessing Game project	- Foundations of the Python Syntax, Data Types and Conditional Statements	- Implement control flow in Python programs to make decisions based on user input - Graded Quiz
	6 Introduction to Data Structures in Python	- The bid auction project - Sales and Operations Planning Project - Sales Report Project with Python	- Foundations of Python's Data Structures including lists, tuples, and dictionaries - Using loops to process each object in a collection	- Implement programs that utilize python's complex data structures - Graded Quiz
	7 Introduction to functions and libraries in Python	- Encrypt and decrypt your communication with Caesar's Cypher - The Inventory Management Problem	- Define Functions for reusable pieces of code - Working with Python's inbuilt libraries and third-party libraries	- Modularize your Python programs with functions - Utilize in-built python libraries to make your code better - Graded Quiz

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Module	Week	Projects	Key Concepts	Key Exercises
Python for Data Science	**8 Data Analysis with Python using NumPy and Matplotlib**	Analyze vehicle sales data with NumPy	- Applying vectorization and broadcasting to speed up data analysis in Python - Visualize data in Python with Matplotlib	- Use NumPy to produce descriptive statistics of vehicle sales data - Visualize vehicle sales data with Matplotlib - Graded Quiz
	9 Data Analysis with Python using Pandas Edition	- Perform Data Cleaning on Parking Tickets Data - Analyze Tourist Spending Data	- From MS Excel to Pandas: discover the power of Python for Data Analysis. - Perform Data Wrangling, Aggregation, Grouping and Merging with Pandas	- Perform Exploratory Data Analysis with Pandas on the Parking Tickets Data and Tourist Spending datasets - Visualize Data with matplotlib - Graded Quiz
	10 Introduction to Machine Learning		Machine Learning (ML) Fundamentals: - What is ML - Types of ML - What is a model - Main ML Challenges	This week is theoretical and thus the key exercise is the Graded Quiz.
	11 Regression Problem	Use Case 1: Predict California Housing Price	- Prepare Data for the ML model - Train Regression models - Evaluate models	- Train different models and compare the performance - Graded Quiz
	12 Classification Problem	Use Case 2: (MNIST) Classify handwritten digits	- Prepare Data for the ML model - Train model - Evaluate model	- Explore multiple performance metrics - Train different models and compare performance - Graded Quiz

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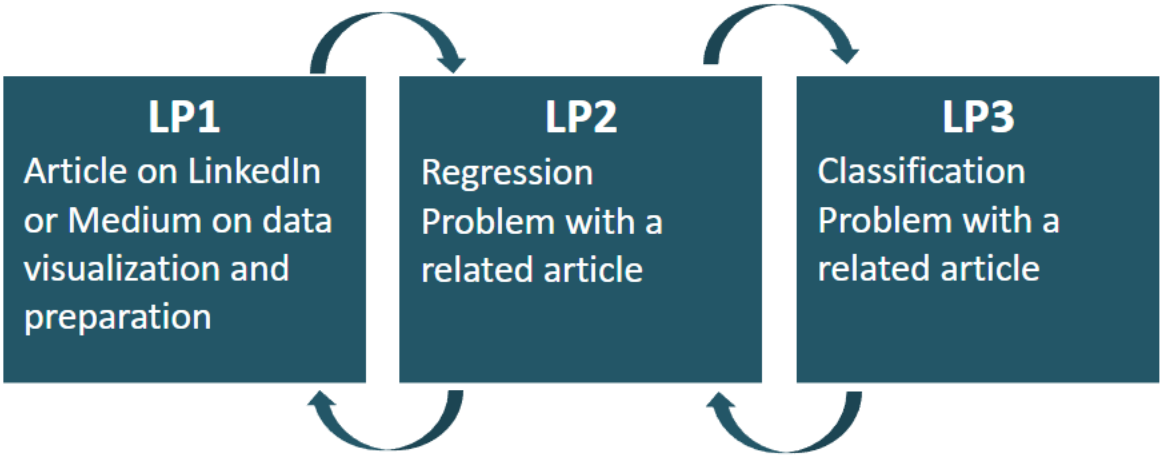
Project phase (months 4-9):

Requirements to participate in project challenges:

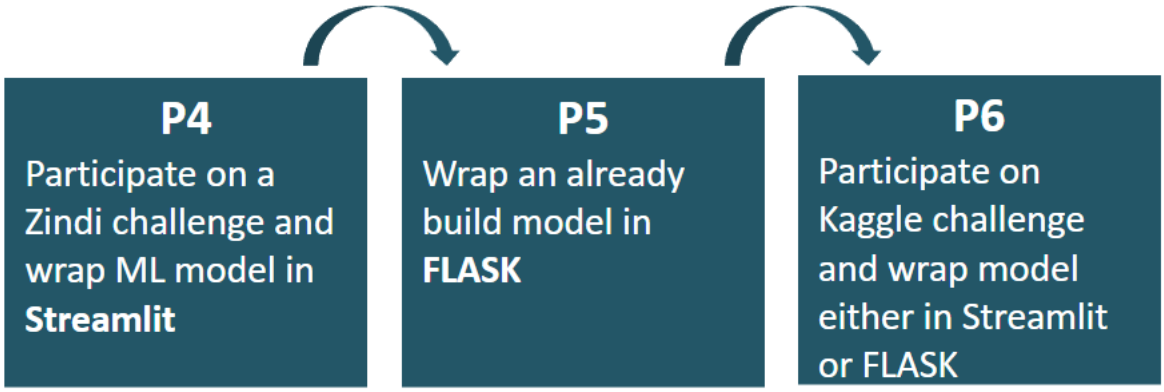
- Successfully passed the first stage of the program (see above)
- GitHub Profile and basic knowledge on how to work on GitHub (some guidance: Advantages and tips for a profile 10: https://impulsate.between.tech/en/tips-github-profile; How To Use GitHub – Developers Collaboration Using GitHub: https://www.edureka.co/blog/how-to-use-github/)

Project Overview:

- You will complete a total of six (6) projects, out of which the first three (3) projects are live challenges
- You will have to complete the three (3) live challenges before moving to the final three projects
- During the live challenges, there will be daily check-ins with our experienced engineering team and the projects are split into four (4) weekly sprints



- For the live challenges, there is no fixed order in which they must be approached and every month one of the live challenges will be offered by our Engineering team
- The non-live projects are also independent of each other, but it is highly recommended to take them in corresponding order



Project Submission:

- You will be required to create a GitHub repository for each project
- The allowed programming language is Python
- Collaboration amongst co-learners is encouraged, but each student must submit their project

Career Support:

- Next to building a project portfolio that is relevant to the jobs that you will apply for, Career Center will support you on your end-2-end application process
    1. Define what positions to apply for
    2. Finding the right jobs
    3. Preparing the perfect application
    4. Mastering the job interview
    5. Mastering the first 100 days in your job

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Time		WEEKLY TIMETABLE				
(GMT)	(EAT)	MON	TUE	WED	THU	FRI
12pm	3pm			Contact hours		Contact hours
1pm	4pm					
2pm	5pm	**Faculty Touchpoint A (Option 1)** Career Sessions // Curriculum Deep-dive				
3pm	6pm					
4pm	7pm					
5pm	8pm	**Faculty Touchpoint B (Option 2)** Career Sessions // Curriculum Deep-dive				
6pm	9pm					
7pm	10pm					

DAILY SELF-STUDY MINIMUM REQUIREMENTS (Monday - Friday):
ADDITIONAL 2 hours on average
WEEKLY QUIZES EVERY WEEKEND

Timetable of Certification Phase

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Faculty Touchpoint

- In the Faculty Touchpoint, you will have a chance to either participate in a discussion into the topics that have been covered (curriculum deep-dive) or have an information packed career lab session with our career team.
- There are 2 time slots to choose from (see schedule above).

Curriculum deep-dive

- You will go over the core concepts that were studied that week.
- The first 30 minutes of each session will be spent on check-ins. Here we give time for you to share your questions and feedback on how the learning has been so far.
- Deep dives are supported by scenario-based hands-on practice of concepts learnt in self-study.

Biweekly Career lab Sessions

- You will join the career team and colleagues from other cohorts for an hour-long session every other week.
- In the lab sessions you learn essential soft skills that will support your situational awareness, enhance your ability to get a job done. You will also learn how to better reconstruct your CV and prepare for interviews.

* You can also reach out to the career centre for exclusive sessions.

Contact Hours

- Contact hours outside of session times in which learners are free to reach out to trainers and facilitators for clarification of concepts.
- You can proactively book a 15-minute meeting with your facilitator as well.