Jaguar TCS Racing Formula E Data Analytics Project

Project Duration: 6 Weeks
Target Audience: College Students and Working Professionals
Mode: Online Live Sessions
Start Date: **15th December 2024**
End Date: **26th January 2025**
Sessions per Week: 3 (Monday, Wednesday, Saturday)
Session Duration: 1.5 hours
Total Hours: 27 hours
Time Slot Options:

- Weekdays: 7:00 PM – 8:30 PM (Post-office/college hours)
- Saturday: 11:00 AM – 12:30 PM

Course Fees

Fee per Participant: ₹6,000/-
Discount Offer: Early-bird registration by **5th December 2024** gets a ₹500 discount.

Week-by-Week Breakdown

Week 1: Introduction and Basics

- **Session 1 (15th Dec)**:
  - Overview of Formula E and Jaguar TCS Racing.
  - Introduction to Data Analytics in Racing.
  - Tools and Platforms to be Used (e.g., Python, Cloud Platforms).
- **Session 2 (18th Dec)**:
  - Basics of Racing Data Collection (Telemetry Data, Sensors).
  - Understanding Key Metrics in Racing Performance.
- **Session 3 (21st Dec)**:
  - Setting Up the Project Environment (Python IDE, Cloud Access).
  - Introduction to Sample Datasets.

Week 2: Data Processing and Cleaning

- **Session 4 (23rd Dec)**:
    - Handling Large Datasets: Techniques and Tools.
    - Data Cleaning and Preprocessing.
- **Session 5 (25th Dec)**:
    - Exploratory Data Analysis (EDA) of Racing Data.
    - Visualizing Key Racing Metrics.
- **Session 6 (28th Dec)**:
    - Case Study: Historical Formula E Race Data Analysis.

Week 3: Building Predictive Models

- **Session 7 (30th Dec)**:
    - Introduction to Machine Learning for Data Analytics.
    - Regression and Classification in Racing Data.
- **Session 8 (1st Jan 2025)**:
    - Developing Predictive Models for Race Outcomes.
    - Training Models with Historical Data.
- **Session 9 (4th Jan)**:
    - Evaluating Model Performance.

Week 4: Optimizing Race Strategies

- **Session 10 (6th Jan)**:
    - Using Data to Optimize Car Performance (Energy Usage, Speed, etc.).
    - Predicting Pit Stops and Strategy Adjustments.
- **Session 11 (8th Jan)**:
    - Real-time Data Processing and Decision Making.
- **Session 12 (11th Jan)**:
    - Case Study: Optimizing a Race Strategy Using Historical Data.

Week 5: Cloud Integration

- **Session 13 (13th Jan)**:
    - Introduction to Cloud Platforms (e.g., AWS, Google Cloud).
    - Deploying Predictive Models on the Cloud.
- **Session 14 (15th Jan)**:
    - Real-time Data Streaming and Analytics.

- **Session 15 (18th Jan)**:
    - Hands-on: Deploy a Live Analytics Dashboard.

Week 6: Final Implementation and Presentation

- **Session 16 (20th Jan)**:
    - Integrating Insights into Racing Strategy.
    - Debugging and Final Testing.
- **Session 17 (23rd Jan)**:
    - Team Project: Simulating a Race Strategy with Data.
- **Session 18 (26th Jan)**:
    - Final Presentations and Feedback Session.

Certification Information

- **Eligibility**:
    - Attendance in at least 80% of the live sessions.
    - Submission of all assignments and the final project.
    - Successful presentation of the final project.
- **Certification Type**:
    - "Certificate of Completion in Data Analytics for Formula E Racing" by Hackveda.
- **Recognition**:
    - Highlights proficiency in data analytics, cloud integration, and machine learning for performance optimization in Formula E.