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**INTERNSHIP REPORT**

**BY**

**DEEPTI MAHAPATRO**

JOB TITLE: DATA ANALYST INTERN

COMPANY NAME: NULL CLASS

DURATION: 2 MONTH [I.E. 31ST MAY 2025 TO 31ST JULY 2025]

CONTACT NUMBER: 7008017855

EMAIL ID: [Deeptimhp3@gmail.com](mailto:Deeptimhp3@gmail.com)

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**INTRODUCTION**

This report documents my experience as a Data Analyst Intern at NullClass over a two-month period. During this internship, I successfully developed and deployed an interactive Tableau dashboard for recruitment data analysis, involving comprehensive data cleaning using Python, advanced visualization techniques, and web integration.

The project required handling complex datasets with multiple quality issues, implementing sophisticated filtering mechanisms including time-based constraints, and creating user-friendly interfaces for data exploration. Working in a remote environment, I developed both technical competencies and professional skills essential for data analytics roles.

Key deliverables included cleaned datasets, interactive dashboard components, and a web-hosted analytics platform that enables stakeholders to make data-driven decisions regarding recruitment patterns and trends.

**BACKGROUND**

NullClass operates as a technology education platform focused on addressing the skills gap between academic preparation and industry requirements. The organization provides structured internship programs that combine practical project experience with personalized mentorship from experienced professionals.

The platform offers comprehensive learning pathways in web development, data science, and cybersecurity, emphasizing hands-on experience and portfolio development. Their approach includes daily support sessions and direct interaction with industry practitioners, enabling students to develop professionally relevant competencies.

NullClass's commitment to practical learning and career readiness makes it an effective bridge for students transitioning from academic environments to professional technology roles.

**LEARNING OBJECTIVES**

The primary objective of my internship was to bridge the gap between raw recruitment data and strategic decision-making by transforming complex datasets into clear, interactive visualizations. Throughout this experience, I set out to master a range of technical and professional skills, from Python-based data preparation to advanced Tableau dashboard design, while also optimizing for performance and user experience.

My role required not only technical proficiency but also effective communication, collaboration, and adaptability in a fast-paced, remote work environment.

This report highlights my learning objectives, the specific tasks and activities I undertook, the skills and competencies I developed and feedback. By reflecting on these experiences, I aim to demonstrate both my technical growth and my ability to contribute meaningfully to data-driven business initiatives.

**ACTIVITIES & TASKS**

## Data Understanding and Cleaning

My first responsibility as a data analyst intern was to familiarize myself with the raw dataset. Using Python, I analyzed the data types and explored the dataset’s contents to gain a comprehensive understanding. During the cleaning process, I identified a few inconsistencies and discovered several null values. I addressed these by replacing all missing data, eliminating duplicate entries, and normalizing categorical fields for consistency. Once the data was clean, I visualized the updated dataset to ensure there were no remaining null values or incorrect data types. After verifying the data quality, I exported the cleaned dataset, laying a strong foundation for reliable dashboard creation.

## Building Tableau Dashboards

With a well-prepared dataset, I connected it to Tableau and created a series of sheets based on the training video instructions:

* **Company**: Company, role, and job title in the rows; company size in the columns.
* **Country**: Job title, role, and longitude in rows; latitude and company size (color-encoded) in columns; country in detail.
* **Experience**: Job title, role, experience in rows; company size in columns.
* **Preference, Qualification, Salary Range, Skills, Work Type**: Each sheet followed a similar pattern, showcasing key fields in rows with company size in columns.

After completing these sheets, I assembled them into a cohesive dashboard, adding filters to ensure users could dynamically interact with all views. Special attention was paid to filter scope and user experience, following best practices from the training.

## Additional Analytical Tasks

**Task 1:** To show the relationship between country, job title, and role, I built a bar chart sheet ("Country–Job Title–Role"), arranging job title and role on the rows and country and record count on the columns. Coloring by role helped immediately distinguish between job categories.

**Task 2:** Next, I visualized preferences and work types for interns meeting all these strict criteria: latitude below 10, country name not starting with A-D, job title of 10 characters or fewer, company size under 50,000, and visibility limited to the 3–5 PM IST time window. I implemented these as calculated field filters scoped to the worksheet, ensuring only qualifying data was displayed and the chart was only available during the specified hours.

**Task 3:** I examined high-qualification, full-time roles in African countries, restricted by: qualifications ('B.Tech', 'M.Tech', 'PhD'), preference (male), job titles starting with D, company size over 80,000, contact persons whose names start with A, and job portal as Indeed. Data points also had to allow for clicking the latitude and longitude to open a map. All logic was applied as filters; however, after applying all conditions, no records were available, confirming the dataset's consistency and the integrity of my filter logic.

**Task 4:** I designed a dashboard comparing roles in India and Germany, limited to 'B.Tech' qualification, full-time status, >2 years’ experience, specific job titles (Data Scientist, Art Teacher, Aero Space Engineer), and a salary above $10,000. Only jobs for females on Indeed before 08/01/2023 were included, with India visualized in orange and Germany in green. The time filter (3–5 PM IST) ensured data was shown only during business-relevant windows. In practice, only German job postings met all criteria, which demonstrate a realistic approach to layered filtering and dataset validation.

**Task 5:** The final chart related company size and name for Asian Mechanical Engineers with >5 years’ experience, salaries over $50,000, male preference, applying through Idealist, and work type restricted to part-time/full-time. Filters ensured only qualifying candidates within Asia (as defined by country list) were included. This robust filter set left only one qualifying company, ensuring the results’ accuracy and relevance.

## Dashboard Design

While organizing the Tableau dashboard, I used floating blank sheets to logically segment content and enhance the interface's visual appeal. I created a distinct section for time-filtered sheets, explaining their IST-based display windows. I also accommodated for Tableau Public’s UTC timing, clarifying available hours for dashboard viewers.

Task 3 required map interactivity: I created a custom Google Maps URL using latitude and longitude fields (“<https://www.google.com/maps?q=>" + STR([Latitude]) + "," + STR([Longitude])"). This was added as a detail to the marks pane, then made clickable via a "Go to URL" dashboard action so users could see precise job locations directly in Google Maps.

After verifying functionality, I published the dashboard to Tableau Public using my credentials.

## Website Integration

To embed the dashboard in a website, I used Visual Studio Code, created an HTML file (index.html), and incorporated the embed code from Tableau Public. The structure included:

* **HTML**: Establishes the site skeleton, references external CSS, and defines the Tableau container.
* **CSS**: Ensures responsiveness and clean visuals, handling screen size variations so the dashboard remains accessible and well-presented across devices.
* **JavaScript**: Dynamically adjusts container size based on viewport and loads Tableau's JavaScript API for smooth rendering.

Each code section was organized for clarity and tested for responsiveness in Visual Studio Code using a link extractor. All steps were carefully verified, from data handling and dashboard creation to website deployment, ensuring the project’s seamless flow and reliability from start to finish.

**SKILLS & COMPETENCIES**

**• Python for Data Cleaning and Transformation:** Leveraged pandas and NumPy to profile, clean, and normalize recruitment datasets. I built reusable functions to handle missing values and standardize formats, ensuring consistency across nightly data refreshes. Development was streamlined using Visual Studio Code, where I organized scripts, debugged functions, and maintained a modular structure for easy updates.

**• Tableau for Advanced Dashboard Development:** Designed interactive, multi-tab dashboards with dynamic filters, Set and Parameter Actions, and responsive layouts. Through rapid prototyping and stakeholder reviews, I balanced depth of insight with intuitive navigation on both desktop and mobile.

**• HTML & Netlify for Dashboard Hosting:** Wrapped the Tableau dashboard embed code in a simple HTML shell and deployed it on Netlify. This setup provided a public, responsive web page accessible on any device without additional server configuration. HTML development and previewing were handled in Visual Studio Code for quick iteration and responsive tweaks.

**• GitHub:** Organized repositories with clear folder structures, maintained detailed README documentation, and used feature branches alongside pull request reviews. This approach streamlined teamwork and ensured every change was tracked and verifiable. Visual Studio Code’s integrated Git support enabled efficient version control and collaboration.

**Feedback and Evidence**

The remote internship structure utilized Google Meet for regular mentorship sessions and Google Forms for issue tracking and feedback collection. This arrangement required developing strong communication skills and the ability to articulate technical challenges clearly.

Without immediate peer support, I learned to leverage online resources effectively, including official documentation, community forums, and tutorial materials. This independent learning approach enhanced my research capabilities and self-reliance in problem-solving situations.

The mentorship process emphasized structured feedback cycles, requiring me to document challenges systematically and present potential solutions for review. This process improved my analytical thinking and professional communication skills.

**Challenges and Solutions**

One of the trickiest hurdles was building a live time filter that only shows “right now” tasks on my sheets. I started by using Tableau’s NOW() and TODAY() functions, but quickly discovered they either excluded valid records or still let old entries slip through. I then dug into date functions like DATEADD, DATEDIFF, and DATETRUNC, crafting several calculated‐field formulas and testing each in turn.

By iterating—adjusting time‐zone offsets, rounding to the nearest hour, and verifying results against my raw data—I finally arrived at a formula that consistently filters tasks to the current timestamp. This methodical trial‐and‐error approach not only fixed the live‐filter issue but also deepened my understanding of time‐based calculations in Tableau.

After fixing the time filter, I ran into another roadblock: no matter what tweaks I made, the dashboard still looked cramped and misaligned. To solve this, I turned to online tutorials, community forums, and the official Tableau documentation to learn about floating versus tiled layouts. I discovered that switching key sheets and images to “floating” objects let me position and resize each element freely—down to the pixel—without being bound by the grid. Through trial and error, I moved containers, adjusted padding, and layered objects until the dashboard looked clean and responsive. This process not only rescued the visual design but also showed me how powerful self-directed learning and practical experimentation can be.

The next challenge was creating a clickable URL from the latitude (and longitude) to display the exact location. I dove into online tutorials, Tableau community forums, and the official documentation to master URL actions and calculated fields. By concatenating my latitude and longitude into a Google Maps link within a calculated field and assigning it as a dashboard URL action, a single click on any data point now opens its precise coordinates in a browser. This hands-on exploration not only solved the problem but also deepened my understanding of Tableau’s interactive capabilities.

Next, I realized the live dashboard on Tableau Public wasn’t reflecting my recent edits, so I re-uploaded the workbook to apply the necessary changes. I dove into official Tableau documentation, step-by-step tutorials, and community forum threads to understand the best practices around republishing and extract refreshing. Armed with those insights, I updated my extract, adjusted workbook permissions, and verified all data source connections before hitting “Publish.”

## Outcomes and Impact

During my internship, I learned how to take messy, real-world job data and turn it into clear, useful information that others can explore easily. I started with a lot of raw data, cleaned it up so there were no mistakes or missing values, then built an interactive Tableau dashboard and shared it through a simple website.

This made it easy for the company and users to see job trends by country, experience, and job role. The dashboard is easy to use, let’s people filter what they see, and even shows details based on the time of day.

I also learned a lot from online resources. Python tutorials helped me understand how to process and clean data, while Tableau training videos showed me how to create different charts and dashboards. Reading guides and documentation online taught me the best ways to handle data and make dashboards that are useful and visually appealing.

Overall, this experience helped me get better at using Python, Tableau, and web tools. I also improved my ability to research, solve problems, and explain my work. The project made a real difference by showing the value of learning new skills online and applying them to real-life problems.

## Conclusion

My two-month remote internship at NullClass has been an invaluable experience, allowing me to develop practical data analytics and dash boarding skills that bridge the gap between academic concepts and industry needs.

Navigating challenges like real-time filtering, dashboard layout optimization, and creating interactive visualizations pushed me to become a more resourceful and independent learner.

Through hands-on problem solving—and by making full use of online tutorials, official documentation, and community forums—I advanced my technical capabilities in Python, Tableau, and web development while also strengthening my communication and self-management skills in a remote work environment.

This project not only resulted in a professional, user-friendly dashboard that brings clarity to complex recruitment data, but also transformed me into a more confident, adaptable data analyst, prepared to add real value in future roles.