

## Business Intelligence & Data Intern - Pre-Interview Technical Assessment

**Deadline:** Sun, Mar 23, 2025 11:00 PM

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### Objective

This assessment is designed to evaluate your ability to **gather, clean, transform, analyze, and visualize** data from multiple sources while incorporating automation. You will be working with CSV files and an API to generate a **customer invoice summary** for AirSprint's client, **JimJets**. The final output should be presented as a **PDF report** that includes both a **summary visual** and **detailed flight activity breakdown for March 2025** and a **detailed explanation of your process** and screenshots (or links) to your backend process. Please note that the **use of AI** is not discouraged.

Your approach should showcase **ETL (Extract, Transform, Load) processes, data transformation, reporting automation, and data visualization** techniques. We encourage creativity in how you solve this challenge.

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### Understanding AirSprint's Business Model

AirSprint operates as a **fractional jet ownership company**, where customers purchase a share of an aircraft and are allocated a certain number of **contract hours (also known as owner hours)** to use for flights. Customers can purchase these hours **throughout the year**, and any unused hours from the previous year **can be brought forward**.

### How Contract Hours Work:

- Customers purchase hours based on **fleet type or aircraft registration**.
- If they do not use all their purchased hours in a year, the remaining balance is **brought forward**.
- As they fly, their total contract hours **decrease** based on **actual flight time** (retrieved via API).
- Each flight is **invoiced individually**, and the summary should reflect the account's total hours (starting, purchased, and used).
- **Each opportunity (contract) should have an asset** if it is won.
- An **asset** is an **aircraft tail (registration)** associated with the account.
- Each **account can have multiple assets, aircraft models, and opportunities**.
- **Each invoice represents one flight**.

The **final visual you produce is below** as a reference. **Note:** The data shown in the visual (e.g., GASR, 4.6%, total flight time hours, hours available, etc.) is **NOT actual expected data**—it is just a **formatting guide**. The numbers will come from the dataset you process.

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## Deliverable

- A **PDF report** (generated from any BI tool, Excel, Python, SQL, or any other method) showcasing:
    1. **Summary Visual:** An **Invoice Summary** for JimJets (note – a summary for each Aircraft Group CJ ONLY should be created.)
    2. **Detailed Flight Breakdown for March 2025:** Each flight as an individual invoice entry.
    3. **Process Explanation:** A short write-up (or screenshots or links) on **how you extracted, transformed, and visualized the data** and why you chose your approach.
      - **We are aware some candidates would not have access to all tools or ‘fancy’ tools.** We encourage you to think outside the box. Note that the type of tool does not determine your success rating, however, the way you think and come up with a solution (even in cases of limited tool accessibility) will showcase how you solve issues.
  - (Bonus) **Automated Invoice Generation:** A process that **emails the final PDF report** to **Steffany Welter** ([swelter@airsprint.com](mailto:swelter@airsprint.com)).
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## CSV Files Provided:

- [Account.csv](#) (Customer details)
- [Aircraft.csv](#) (Aircraft information)
- [Asset.csv](#) (Contracted flight hours and ownership details)
- [Contact.csv](#) (Contact person details for each account)
- [Invoices.csv](#) (Historical invoice records)
- [Opportunity.csv](#) (Purchase history and contract data)

## API Data Source (Flight Information):

<https://developer.fl3xx.com/reference>

**TOKEN:** 4y9IRGloQtzDdPLphsO4rtzhTbLPk6Sg

Authorization type API key ▾	
Name	X-Auth-Token
API key	{{API_AUTHENTICATION}}

OR

Key	X-Auth-Token
Value	4y9IRGloQtzDdPLphsO4rtzhTbLPk6Sg
Add to	Header ▾

- You will receive an **API link and authentication token** to retrieve **flight data** from FI3xx.
- The relevant **Flight IDs** to retrieve are: 79952, 79953, 79956, 79957, 79958, 79959, 79960.
- The **total flight time** for these flights will come from the **etd and eta** field in the API response.

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## Required Fields in the Final Summary

Your **summary visual** should include:

1. **Account Name**
2. **Contact Name**
3. **Account Number/FI3xx ID**
4. **Date the Summary Was Created** (Dynamic, should always show today's date)
5. **Anniversary Date** (Lease renewal date)
6. **Aircraft** (Concatenation of **Aircraft Tail/Registration** and **Aircraft Type/Model** from Aircraft.csv)
7. **Aircraft Group**
  - **Citation CJ2+ and Citation CJ3+** should be grouped as **CJ**.

- ### 11. Total Flight Time Used (from FI3xx API, using provided flight IDs)

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## Technical Requirements & Flexibility

- **Use Any Tools You Prefer:** Excel, SQL, Power BI, QuickSight, Tableau, Python, Snowflake, AWS, GCP, etc.
- **Ensure an ETL Process:** You must transform raw data into the final output.
- **Automation Is Key:** The more automation in your approach, the better.
- **Final Output Must Be in a PDF Format.**

**Bonus:** Automate the process of **emailing the final PDF** to Steffany (HR email address).

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## Evaluation Criteria

We will evaluate your submission based on:  **Data Processing & Transformation:** Ability to extract, clean, and merge data from multiple sources.  **SQL & ETL Skills:** Ability to write SQL queries and structure tables/views.  **Dashboard & Visualization:** Clarity, accuracy, and design of your report.  **Automation & Process Efficiency:** How automated and scalable your solution is.  **Creativity & Problem-Solving:** How well you handle data gaps and logical transformations.  **Documentation:** Clear explanation of your approach and decision-making process.

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## Submission Guidelines

- **Deadline:** Sun, Mar 23, 2025 11:00 PM
  - **File Format:** Submit a **PDF** containing the final visual, breakdown, and process explanation.
  - **Submission Method:** Email to [swelter@airsprint.com](mailto:swelter@airsprint.com) with the subject: **BI & Data Intern Assessment - [Your Name]**
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We look forward to seeing how you tackle this challenge! 