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DWBI Project - Career Insights Dashboard for Graduate Students

1. Describe the Scenario

The project involves analyzing hiring trends, coursework selection, and employment outcomes for students from the **University of Illinois Urbana-Champaign (UIUC)**. The data highlights key aspects such as employment by role, GPA correlations with income, hiring regions, and unemployment reasons.

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2. What is the Problem You are Trying to Solve?

Students usually anxious about job search. Use the power of data and convert it into information and eventually actionable insights. The goal is to understand:

- Employment outcomes for UIUC students, including roles, industries, and regions.
- How GPA, coursework, and education choices influence job opportunities and income.
- Reasons for unemployment among recent graduates.

The project aims to uncover actionable insights for improving student employability and guiding academic decisions.

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3. Who is the Intended Audience?

The intended audience includes:

- **UIUC Faculty and Academic Advisors**: To align curriculum with job market demands.
- **UIUC Career Services**: To assist students in targeting high-demand roles and industries.
- **Employers and Recruiters**: To understand student talent pools and hiring trends.
- **UIUC Students**: To make informed decisions about courses, GPA goals, and career pathways.

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4. Where Did Your Data Come From?

The data was sourced from a CSV dataset for which the schema was provided by the career center. Since the data was confidential, we synthesized the data using mockaroo and Chatgpt. The dataset contains details on hiring, coursework, academic performance, and employment trends for UIUC students.

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5. Who Acted as Your Client and What Perspective Did They Offer?

The client for this project was **UIUC's Career Center**. They emphasized the need to analyze:

- Correlation between the Illini Success reports from across the years that they have published it
- Dynamic filtering capabilities to get Year, College & Job Role Specific Metrics
- Hiring outcomes for graduates.
- How course selection and GPA influence job placements.
- Key areas of concern like unemployment trends and academic performance.

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6. Describe the Steps Taken in the Project

1. **Data Preparation**:
    - Using Tableau Prep performed ETL on the raw dataset for filtering and cleaning of the dataset. Removed any PII from the data to create de-identified data which is suitable to use for the dashboard.
    - Loaded the dataset into Tableau.
    - Cleaned the data to resolve missing and inconsistent values.
2. **Exploratory Data Analysis (EDA)**:
    - Explored key metrics such as hiring roles, regions, GPA correlations, and unemployment reasons.
3. **Dashboard Creation**:
    - Developed visualizations in Tableau to represent the findings effectively.
4. **Insights and Refinement**:
    - Analyzed trends and patterns in employment, income, and course selection.
    - Refined dashboards based on feedback for clarity.

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7. Describe the Analysis

The analysis focused on:

1. **Employment Trends**:
    - Hiring patterns over years and across regions were explored (*Figure 1&2: Hiring Trends over Years and Employment by Region*).

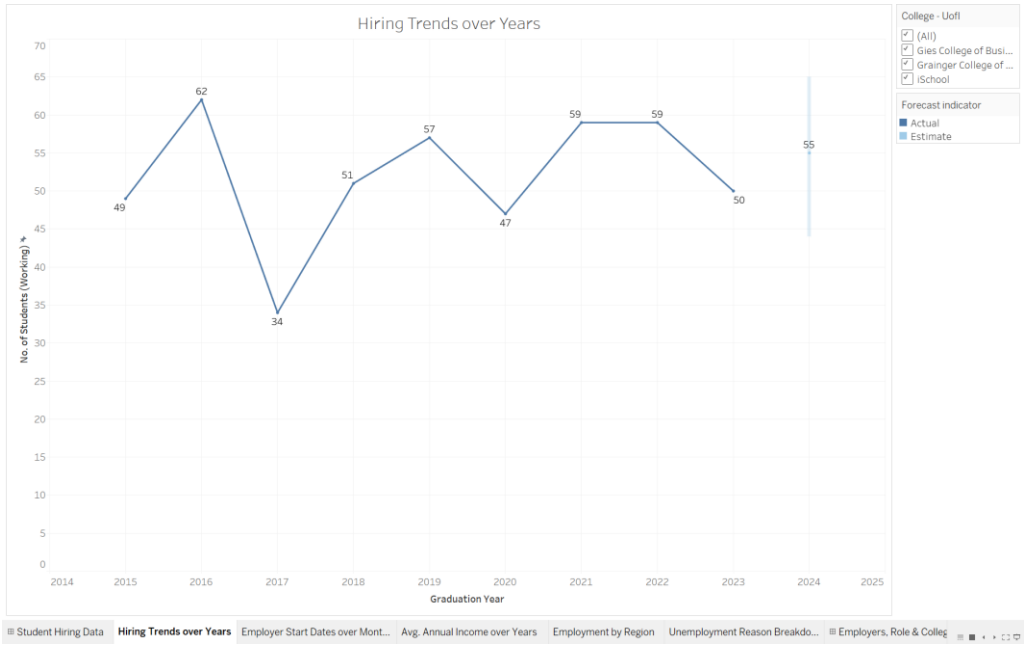

Figure 1

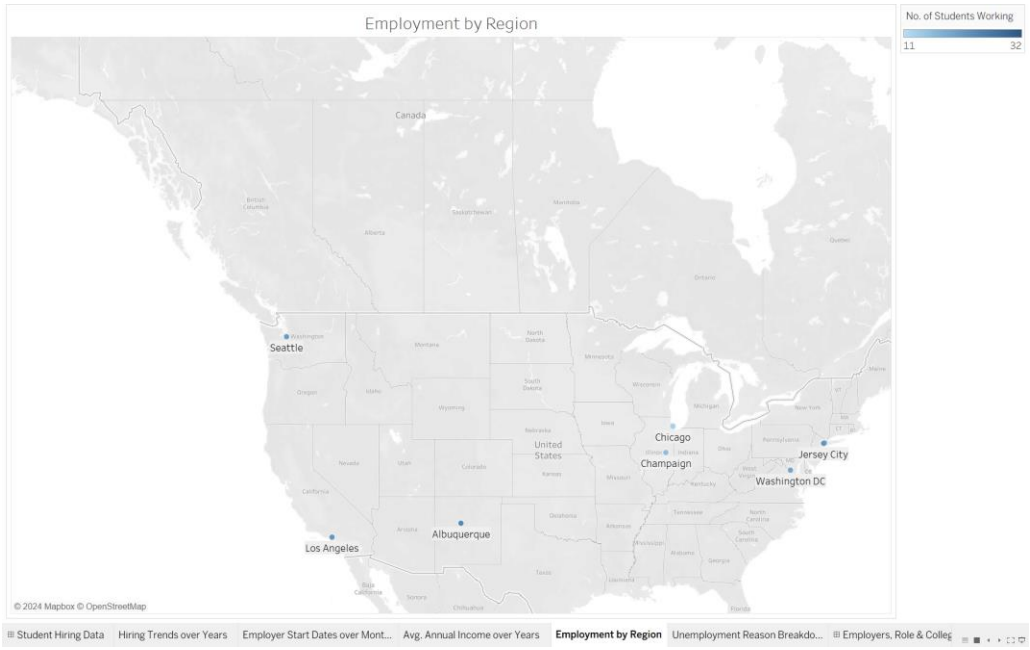

Figure 2

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2. **Role Distribution**:
    - Identified the most common roles for UIUC graduates, such as **Data Analyst**, **UX Designer**, and **Mechanical Engineer**.

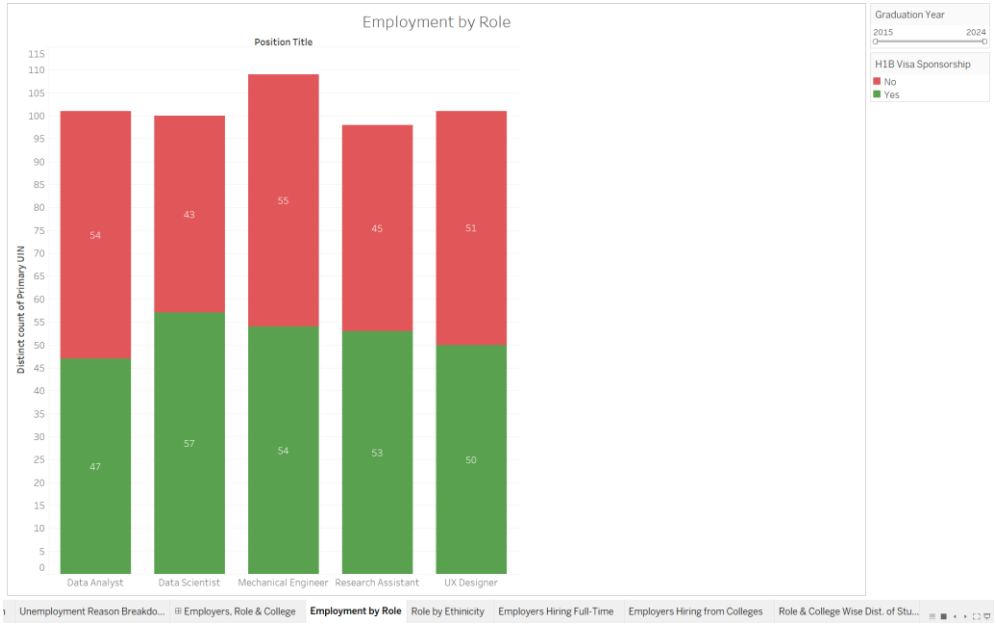

Figure 3

3. **GPA Impact on Income**:
    - Assessed how GPA correlates with annual income (*Figure 4: Avg. GPA vs Avg. Annual Income*).

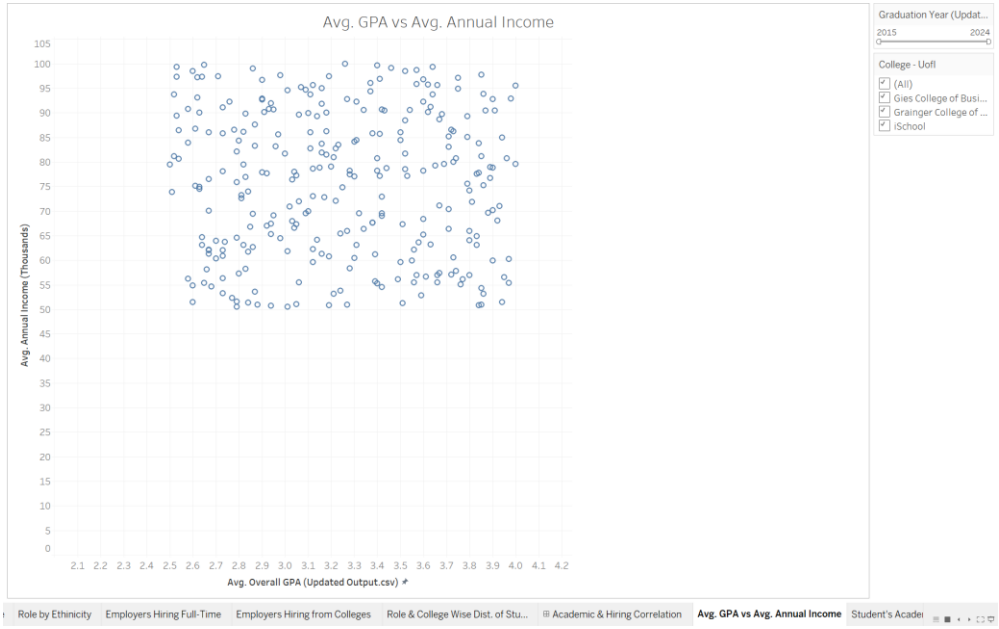

Figure 4

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4. **Course Selection and Employment**:
    - Analyzed how different coursework aligns with job opportunities (*Figure 5: Course Selection vs No. of Students Working*).

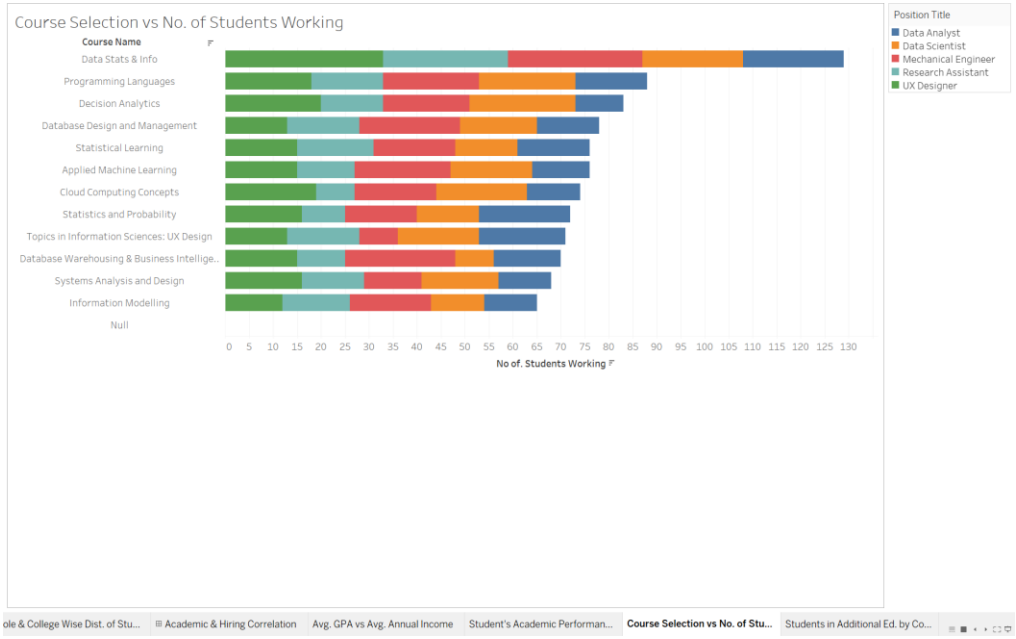

Figure 5

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8. Describe the Discoveries

Key findings include:

1. **Employment by Role**:
    - **Data Analysts** and **UX Designers** are among the most hired positions (*Figure 3*).
2. **GPA Correlation**:
    - Higher GPA correlates positively with higher annual income (*Figure 4*).
3. **Hiring Regions**:
    - Employment opportunities are concentrated in certain regions, such as Washington DC and Los Angeles (*Figure 2).*
4. **Coursework Impact**:
    - Students specializing in courses like **Data Stats & Information** and **Programming Languages** tend to secure more jobs (*Figure 5*).

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9. Challenges Encountered and Solutions

- **Data Integration**: Multiple data connections required careful handling in Tableau to avoid inconsistencies.
    - *Solution*: Cleaned and verified data relationships before creating dashboards.
- **Complex Visualizations**: Some patterns were initially difficult to communicate visually.
    - *Solution*: Simplified visuals to focus on key insights, such as combining hiring trends with role distribution.

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10. Adjustments from the Original Plan

The initial focus was on unemployment reasons. However, further analysis revealed strong correlations between GPA, coursework, and employment outcomes. Adjustments were made to prioritize these findings.

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11. Feedback and Incorporation

The client suggested refining dashboards to emphasize actionable takeaways. As a result:

- Visuals were adjusted for clarity.
- Combined trends like GPA and income correlations were prioritized.

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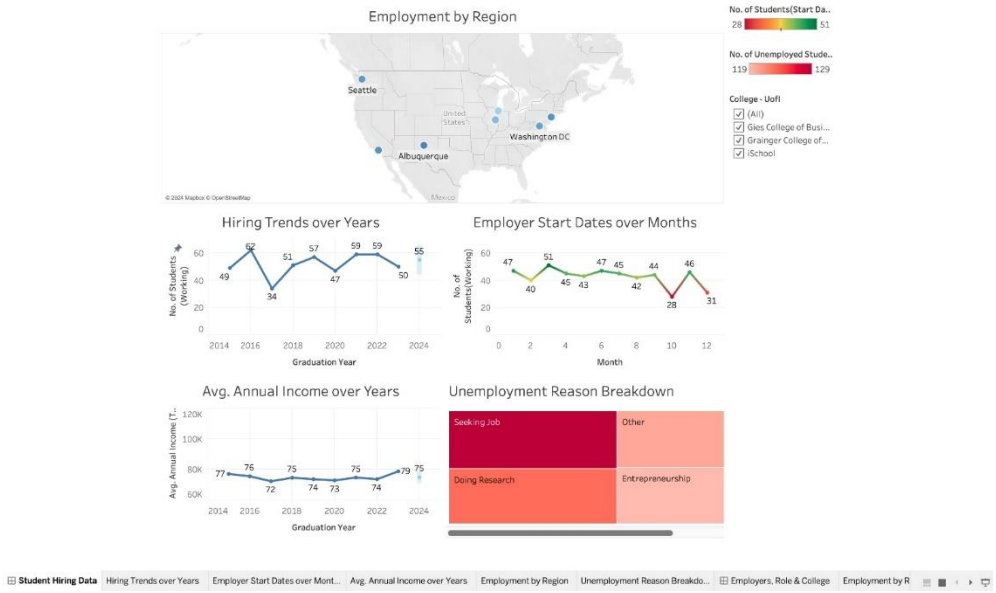
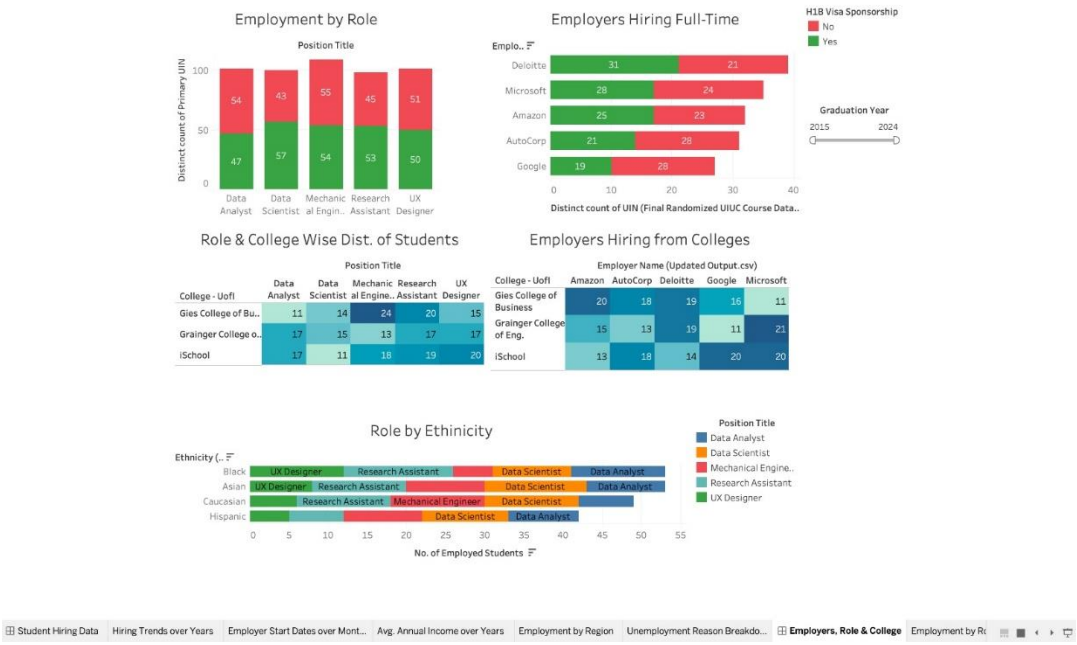
12. Final Product

The final product includes:

1. **Tableau Dashboards** covering:
    - *Student Hiring Data*



    - *Employers, Role & College*



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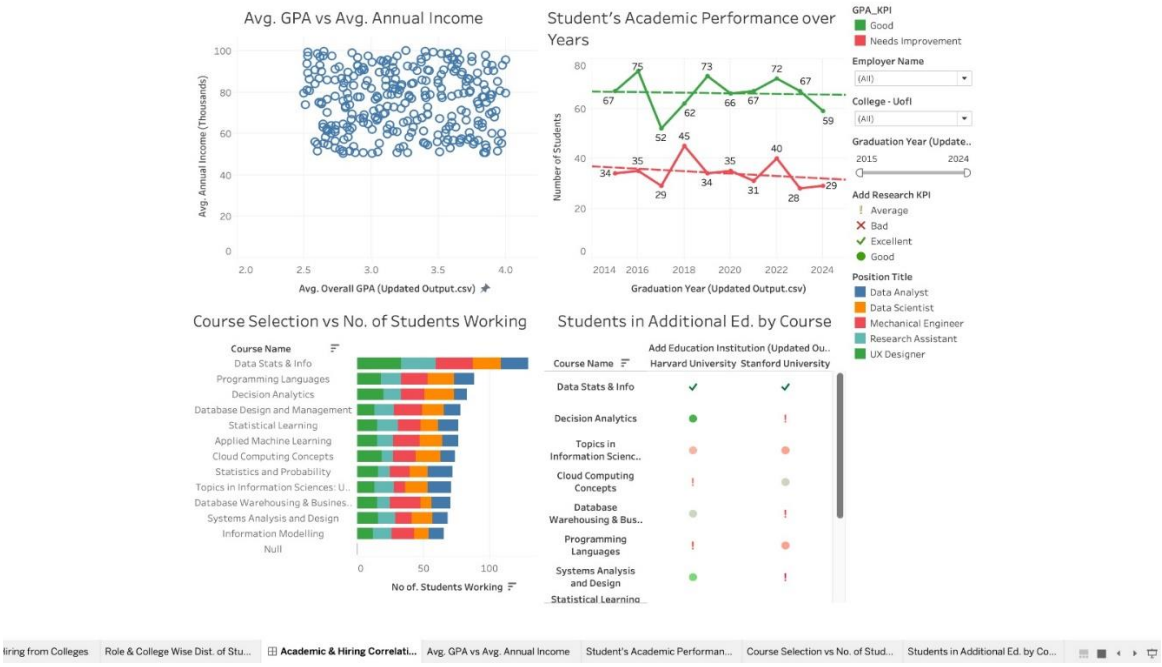
- *Academic & Hiring Correlation*



Key Screenshots:

1. **Hiring Trends Over Years** : *(Figure 1)*
    - Shows a steady increase in employment trends post-2020.

2. **GPA vs Annual Income** : *(Figure 4)*
    - Highlights a strong correlation between GPA and higher income levels.

3. **Course Selection vs No. of Students Working** : *(Figure 5)*
    - Courses like **Programming Languages** and **Data Stats & Info** dominate job placements.