



**Department Of Decision Sciences**

**Faculty Of Business**

**University Of Moratuwa**

**Semester 4**

**Data Management & Visualization – DA2121**

**Due Date of Submission**

**[15/10/2024]**

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## **Acknowledgement**

We would like to take this opportunity to express our heartfelt thanks to Dr. Sandun Dassanayaka for the immense guidance and support he has given throughout this Power BI assignment. His insights and feedback meant a lot to us in terms of understanding each aspect of data visualization and creating a dashboard.

We would like to extend a special thank you to all our members for their hard work, collaboration, and dedication toward the group work. Every member was important and played a crucial role in the successful completion of this project.

Thank You.

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## **1.0 Initial Data Set of The Application**

- The original dataset contained five key columns:
  - **ID**: Unique identifier for each individual.
  - **Gender**: Gender of the individual.
  - **Academic**: Combined academic qualifications and details.
  - **Experience**: A detailed record of companies worked and past work experiences.
  - **Pay Verified**: Whether or not the pay information is verified.

## **2.0 Data Wrangling Process**

### **2.1. Splitting Academic and Experience Columns**

- The **Academic** and **Experience** columns were broken down into multiple sub-columns to extract more granular details:
  - **Academic Column**: Split using the colon (:) delimiter to create fields such as:
    - *University/Institute 1*
    - *Degree/Qualification 1*
    - *Degree Start Date 1*
    - *Degree End Date 1*
    - *Class 1*
  - The process was repeated for up to six qualifications, but **Qualifications 5 and 6** were later removed since only the highest qualifications were considered. (Ordinary level and Advanced Level qualifications were not used.)

- **Experience Column:** Split similarly to represent job history using the colon (:) delimiter:
  - *Company 1*
  - *Position 1*
  - *Starting Company 1* (start date)
  - *Ending Company 1* (end date)
- This breakdown was extended for up to **seven companies**.

## 2.2. Data Cleaning Process

- **Qualification Filtering:**
  - After splitting the qualifications, **Qualifications 5 and 6** were removed, retaining only the most relevant academic credentials.
  - Professional qualifications such as **CIMA**, **CA**, and **CMA** were grouped and renamed accordingly.
- **Institution Name Formatting:**
  - University or institution names were cleaned by capitalizing the first letter of each word for consistency & misspelled institution names were corrected & replaced accordingly.
- **Class Standardization:**
  - Classes of each degree/qualification were standardized to consistent categories:
    - *First Class, Second Class Upper, Second-Class Lower, General Degree,* and *Undefined* (if the class was missing or could not be determined).

- **Degree vs. Other Qualification:**

- Qualifications were categorized as either a *degree* or *other* based on whether a class was associated with it.

### 2.3. Categorization of Qualifications

- Using if contains formula, the qualifications were classified into three categories by giving the keywords:
  - **Business** (business-related qualifications)
  - **Other** (non-business qualifications)
  - **Professional** (e.g., CIMA, CA, CMA)

### 2.4. Duration Calculation

- For each qualification, the duration was calculated by finding the difference between the **start date** and the **end date** for each of the qualification.
- Durations of Professional Qualifications such as CIMA, CA was replaced as 3 years

### 2.5. Post-Qualification Experience Evaluation

- **Experience Evaluation**
  - The company experiences were evaluated for appropriateness using a keyword-based approach by “if contains” formula to make sure the particular experience level is related to the field of business.
- **Post-Qualification Experience:**
  - Post-qualification experience for each company was calculated by considering:

- If the qualification is a **degree**, the starting date of the company and ending date of the company together with the degree's end date was compared.
  - If the starting date of the company was before the degree end date, the company starting was considered to be the degree end date.
  - If the qualification is **professional**, the experience was calculated directly based on the company start and end dates.
- A DAX formula (e.g., Post\_Working\_Experience\_Company1) was used to calculate the difference between these dates, adjusting the start date as needed.

```

Post_Working_Experience_Company1 =
MAX(
    IF(
        [QualificationCategory1] = "Pro.Qualification",
        -- If it's a Professional Qualification, calculate experience directly from
        Starting and Ending Company dates
        IF(
            NOT(ISBLANK([Starting Company 1])) && NOT(ISBLANK([Ending Company 1])),
            DIVIDE(DATEDIFF([Starting Company 1], [Ending Company 1], DAY), 365),
            0
        ),
        -- If it's not a Professional Qualification, use the condition based on
        Degree End Date
        IF(
            NOT(ISBLANK([Starting Company 1])) && [Starting Company 1] < [Degree
            End Date 1],
            DIVIDE(DATEDIFF([Degree End Date 1], [Ending Company 1], DAY), 365),
            IF(
                NOT(ISBLANK([Starting Company 1])) && [Starting Company 1] >=
                [Degree End Date 1],
                DIVIDE(DATEDIFF([Starting Company 1], [Ending Company 1], DAY),
                365),
                0
            )
        )
    )
)

```

Similarly for companies 1 to 4

- **Total Post-Qualification Experience:**

- The total experience across all companies was summed using DAX. Only companies where the experience was considered "Appropriate" were included in the total:

```

• Total_Post_Working_Experience =
• IF([Appropriateness 1] = "Appropriate", [Post_Working_Experience_Company1], 0) +
• IF([Appropriateness 2] = "Appropriate", [Post_Working_Experience_Company2], 0) +
• IF([Appropriateness 3] = "Appropriate", [Post_Working_Experience_Company3], 0) +
• IF([Appropriateness 4] = "Appropriate", [Post_Working_Experience_Company4], 0) +
• IF([Appropriateness 5] = "Appropriate", [Post_Working_Experience_Company5], 0) +
• IF([Appropriateness 6] = "Appropriate", [Post_Working_Experience_Company6], 0) +
• IF([Appropriateness 7] = "Appropriate", [Post_Working_Experience_Company7], 0)

```

## 2.6. Eligibility Status Calculation

- Based on the qualifications and experience, an **Eligibility Category** was determined using a series of conditions in DAX, including:

- **Category 1 - Direct Eligibility:**

This category is for applicants who hold an Honors Bachelor's Degree in Business from the University of Moratuwa.

Checks up to four qualifications (Qualification 1 through 4) to see if any match this degree and institution combination, ensuring it's categorized as a "Degree".

- **Category 2 - Direct Eligibility (Business Degree):**

Applicants who have a four-year business/management degree from a recognized university.

Condition checks if the qualification category is Business, if the duration is 4 years or more, and if the qualification is a "Degree".

- **Category 3 - Eligible with Experience (Non-Business Degree):**

Applicants with a four-year non-business/non-management degree and at least 1 year of post-qualification experience.



This checks if the qualification category is Other (non-business), if the duration is 4 years or more and if the qualification is a "Degree" and if the applicant has 1 year or more of relevant work experience.

- **Category 4 - Eligible with Experience (Three-Year Degree):**

Applicants with a three-year degree and at least 2 years of post-qualification experience.

It checks if the degree duration is 3 years and ensures there are 2 or more years of relevant work experience and if the qualification is a "Degree"

- **Category 5 - Eligible with Professional Qualification:**

Applicants with a recognized professional qualification (e.g., CIMA, CA) and at least 2 years of post-qualification experience.

The code checks if the qualification is classified as a Professional Qualification and ensures there are 2 years of relevant experience.

- **Category 6 - Special Admission (Senior Managers/Entrepreneurs):**

Senior managers or entrepreneurs with considerable years of experience.

The code checks for job titles like Senior Manager or Entrepreneurs, ensuring they have 3 years of post-qualification experience.

*Accordingly, 2 applicants have been eligible under category 6 – special admission which is 2.4% of the class (this is less than 10% according to the requirements)*

- **Final Category: Not Eligible:**

If the applicant doesn't meet any of the conditions in the above categories, they are classified as **Not Eligible**.

```

• Eligibility Category =
• SWITCH(TRUE(),
•   -- Category 1: Honors Bachelor's in Business from University of Moratuwa
•   (
•       (
•           [Degree / Qualification 1] = "Honors Bachelor's Degree in Business" &&
•           [University / Institute 1] = "University of Moratuwa" &&
•           CONTAINSSTRING([Degree or Not 1], "Degree")
•       ) ||
•       (
•           [Degree / Qualification 2] = "Honors Bachelor's Degree in Business" &&
•           [University / Institute 2] = "University of Moratuwa" &&
•           CONTAINSSTRING([Degree or Not 2], "Degree")
•       ) ||
•       (
•           [Degree / Qualification 3] = "Honors Bachelor's Degree in Business" &&
•           [University / Institute 3] = "University of Moratuwa" &&
•           CONTAINSSTRING([Degree or Not 3], "Degree")
•       ) ||
•       (
•           [Degree / Qualification 4] = "Honors Bachelor's Degree in Business" &&
•           [University / Institute 4] = "University of Moratuwa" &&
•           CONTAINSSTRING([Degree or Not 4], "Degree")
•       )
•   ), "Category 1 - Direct Eligibility",
•
•   -- Category 2: Four-year business/management degree from recognized universities
•   (
•       (
•           [QualificationCategory1] = "Business" && VALUE([Duration1]) >= 4 &&
•           CONTAINSSTRING([Degree or Not 1], "Degree")
•       ) ||
•       (
•           [QualificationCategory2] = "Business" && VALUE([Duration2]) >= 4 &&
•           CONTAINSSTRING([Degree or Not 2], "Degree")
•       ) ||
•       (
•           [QualificationCategory3] = "Business" && VALUE([Duration3]) >= 4 &&
•           CONTAINSSTRING([Degree or Not 3], "Degree")
•       ) ||
•       (
•           [QualificationCategory4] = "Business" && VALUE([Duration4]) >= 4 &&
•           CONTAINSSTRING([Degree or Not 4], "Degree")
•       )
•   ), "Category 2 - Direct Eligibility",
•
•   -- Category 3: Four-year non-business/non-management degree with experience
•   (

```

```

•      (
•          VALUE([Duration1]) >= 4 && [QualificationCategory1] = "Other" &&
•          VALUE([Total_Post_Working_Experience]) >= 1 &&
•          CONTAINSSTRING([Degree or Not 1], "Degree")
•      ) ||
•      (
•          VALUE([Duration2]) >= 4 && [QualificationCategory2] = "Other" &&
•          VALUE([Total_Post_Working_Experience]) >= 1 &&
•          CONTAINSSTRING([Degree or Not 2], "Degree")
•      ) ||
•      (
•          VALUE([Duration3]) >= 4 && [QualificationCategory3] = "Other" &&
•          VALUE([Total_Post_Working_Experience]) >= 1 &&
•          CONTAINSSTRING([Degree or Not 3], "Degree")
•      ) ||
•      (
•          VALUE([Duration4]) >= 4 && [QualificationCategory4] = "Other" &&
•          VALUE([Total_Post_Working_Experience]) >= 1 &&
•          CONTAINSSTRING([Degree or Not 4], "Degree")
•      )
•  ), "Category 3 - Eligible with Experience",
•
•  -- Category 4: Three-year degree with two years of post-qualifying experience
•  (
•      (
•          VALUE([Duration1]) = 3 && VALUE([Total_Post_Working_Experience]) >= 2 &&
•          CONTAINSSTRING([Degree or Not 1], "Degree")
•      ) ||
•      (
•          VALUE([Duration2]) = 3 && VALUE([Total_Post_Working_Experience]) >= 2 &&
•          CONTAINSSTRING([Degree or Not 2], "Degree")
•      ) ||
•      (
•          VALUE([Duration3]) = 3 && VALUE([Total_Post_Working_Experience]) >= 2 &&
•          CONTAINSSTRING([Degree or Not 3], "Degree")
•      ) ||
•      (
•          VALUE([Duration4]) = 3 && VALUE([Total_Post_Working_Experience]) >= 2 &&
•          CONTAINSSTRING([Degree or Not 4], "Degree")
•      )
•  ), "Category 4 - Eligible with Experience",
•
•  -- Category 5: Recognized professional qualification (e.g., CIMA) with two years of
experience
•  (
•      (
•          [QualificationCategory1] = "Pro.Qualification" &&
•          VALUE([Total_Post_Working_Experience]) >= 2

```

```

•         ) ||
•         (
•             [QualificationCategory2] = "Pro.Qualification" &&
VALUE([Total_Post_Working_Experience]) >= 2
•         ) ||
•         (
•             [QualificationCategory3] = "Pro.Qualification" &&
VALUE([Total_Post_Working_Experience]) >= 2
•         ) ||
•         (
•             [QualificationCategory4] = "Pro.Qualification" &&
VALUE([Total_Post_Working_Experience]) >= 2
•         )
•     ), "Category 5 - Eligible with Professional Qualification",
•
•     -- Category 6: Senior managers/entrepreneurs with 3+ years of experience
•     (
•         (
•             (CONTAINSSTRING([Position 1], "Senior Manager") || CONTAINSSTRING([Position 1],
"Senior Executive") || CONTAINSSTRING([Position 1], "Entrepreneurs")) &&
VALUE([Post_Working_Experience_Company1]) >= 3
•         ) ||
•         (
•             (CONTAINSSTRING([Position 2], "Senior Manager") || CONTAINSSTRING([Position 2],
"Senior Executive") || CONTAINSSTRING([Position 2], "Entrepreneurs")) &&
VALUE([Post_Working_Experience_Company2]) >= 3
•         ) ||
•         (
•             (CONTAINSSTRING([Position 3], "Senior Manager") || CONTAINSSTRING([Position 3],
"Senior Executive") || CONTAINSSTRING([Position 3], "Entrepreneurs")) &&
VALUE([Post_Working_Experience_Company3]) >= 3
•         ) ||
•         (
•             (CONTAINSSTRING([Position 4], "Senior Manager") || CONTAINSSTRING([Position 4],
"Senior Executive") || CONTAINSSTRING([Position 4], "Entrepreneurs")) &&
VALUE([Post_Working_Experience_Company4]) >= 3
•         ) ||
•         (
•             (CONTAINSSTRING([Position 5], "Senior Manager") || CONTAINSSTRING([Position 5],
"Senior Executive") || CONTAINSSTRING([Position 5], "Entrepreneurs")) &&
VALUE([Post_Working_Experience_Company5]) >= 3
•         ) ||
•         (
•             (CONTAINSSTRING([Position 6], "Senior Manager") || CONTAINSSTRING([Position 6],
"Senior Executive") || CONTAINSSTRING([Position 6], "Entrepreneurs")) &&
VALUE([Post_Working_Experience_Company6]) >= 3
•         ) ||
•         (

```

```

•      (CONTAINSSTRING([Position 7], "Senior Manager") || CONTAINSSTRING([Position 7],
"Senior Executive") || CONTAINSSTRING([Position 7], "Entrepreneurs")) &&
VALUE([Post_Working_Experience_Company7]) >= 3
•      )
•    ), "Category 6 - Special Admission",
•
•
•
•      "Not Eligible"
•    )
•

```

### **3.0 Final Dashboard Preparation**

#### **Page 1: Home Page**

Home Page acts as an entry point by adding interactivity in the design to set the trend for the remaining parts of the dashboard. We have added at the top right some navigation buttons so that one can easily move from one page to another with ease. We have also added one interactive filter button through which users can personalize their view based on key dimensions such as:

- *Eligibility*
- *Qualification Category*
- *Institution*
- *Gender*
- *Post-Working Experience*

#### **Page 2: Dashboard**

The Dashboard page shows a informative summary display of key metrics, providing an overview of the eligibility and qualification within the dataset. Each visualization element has been created for a certain type of analytical purpose:

- Cards: Visualize the number of eligible and ineligible applicants to get an instant snapshot view of the qualification status of individuals.

- Gauge: Visualizes the eligible and ineligible applicants in terms of a proportion, for rapid conclusions.
- Horizontal Stacked Bar Chart: The bar chart to be visualized basically elaborates on the eligibility status of applicants against the different universities attended. This visual provides insight into which of these institutions provide the most eligible applicants.
- Pie Chart: Conveys the distribution of eligibility across six eligibility categories.
- Vertical Bar Chart: Visualizes count of applicants by the post-qualification experience (years). This shows how work experience would vary across the pool of applicants.
- Map: This will show the geographical mapping of applicants' university/ institute, thereby to take note of the location and distribution of the universities.
- Doughnut Chart: This will try to represent the class of degree such as First Class and Second Class Upper for those students who have acquired a degree.

### **Page 3: Detailed Information**

The Detailed Information page gives quite an extensive view into the details of the individual applicant by breaking down qualification and experience through tables combined with visual analysis.

- Table: It summarizes applicants' data including ID, degree type (Business related, professional qualification, others), institution, and experience in years.

Color-coding on the table gives further clarity on status:

- Red: Eligible
- Green: Not eligible

- Tree Map: Visually groups applicants by qualification type, business-related, professional, that is, CIMA, CMA, and CA, and others.
- Decomposition Tree: The overall number of eligible applicants is visually broken down by the six categories of eligibility. Besides, it does show how many have obtained a degree-a deeper layer for analysis to understand the composition of the pool of eligible applicants.

Overall, the color-coding, backgrounds, buttons were placed in a way to provide the user customized experience. The integration of filters will provide assurance that the dashboard can be tailored to specific needs, making the dashboard useful for decision-making. While the bright colors and clean layouts make the dashboard appealing to view and easy to navigate.

## **4.0 Conclusion**

- According to our analysis out of total 115 applicants 83 applicants are eligible for the Masters program.
  - Category 1 – 0 applicants
  - Category 2 – 47 applicants
  - Category 3 – 10 applicants
  - Category 4 – 17 applicants
  - Category 5 – 7 applicants
  - Category 6 – 2 applicants
- Highest eligible count of applicants are from Business related background whereas few from other (eg: engineering, computer science) and least from professional qualifications.
- Moreover, most applicants are from the University of Sri of Jayawardenapura also highlighting the highest eligibility applicant count in comparison to other institutes.
- Overall, this project showcased the effectiveness of data visualization in making informed conclusions. Our interactive dashboard gives stakeholders an easy way to explore and understand the data, making it a useful tool for future decisions and insights.