Business Data Management (BDM) Capstone Project

Case Study of Studify Consultants

Final Submission

Submitted by

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Contents

Declaration Statement

I am working on a Project titled "**Case Study of Studify Consultants**". I extend my appreciation to **Studify Consultants**, for providing the necessary resources that enabled me to conduct my project.

I hereby assert that the data presented and assessed in this project report is genuine and precise to the utmost extent of my knowledge and capabilities. The data has been gathered from primary sources and carefully analyzed to assure its reliability.

Additionally, I affirm that all procedures employed for the purpose of data collection and analysis have been duly explained in this report. The outcomes and inferences derived from the data are an accurate depiction of the findings acquired through thorough analytical procedures.

I am dedicated to adhering to the principles of academic honesty and integrity, and I am receptive to any additional examination or validation of the data contained in this project report.

I understand that the execution of this project is intended for individual completion and is not to be undertaken collectively. I thus affirm that I am not engaged in any form of collaboration with other individuals, and that all the work undertaken has been solely conducted by me. In the event that plagiarism is detected in the report at any stage of the project's completion, I am fully aware and prepared to accept disciplinary measures imposed by the relevant authority.

I understand that all recommendations made in this project report are within the context of the academic project taken up towards course fulfillment in the BS Degree Program offered by IIT Madras. The institution does not endorse any of the claims or comments.

Signature of Candidate: 

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1. Executive Summary:

The project focuses on ‘Studify Consultants’, a medium-sized private education company located at SCO – 64, 2nd Floor, Sector 47 C, Chandigarh. The company operates under a B2C model, specializing in overseas education and travel services.

In the Mid-Term Submission, I presented the metadata and descriptive statistics for the cleaned and pre-processed data. This data was divided into two categories: Student Visa Data and Tourist Visa Data. Additionally, I provided initial insights into how the descriptive statistics could address the three key problems identified in the project.

For the Final Submission, I will perform a more detailed quantitative analysis, focusing on most of the features in the dataset. The goal of this analysis is to derive more in-depth inferences and discover the most effective solutions for the identified challenges.

Following this detailed analysis, I will provide recommendations on how to generate more leads, which is essential for increasing the number of consumers. This increase in consumer base will subsequently enhance sales and profitability, directly addressing the first problem of lead generation to improve the company's reach and financial performance.

Regarding the third problem, I contacted the company again to request sample forms they provide to customers, as the company had previously mentioned that they store customer data in unorganized Excel files and hard-copy forms. I requested these forms so that they can serve as the foundation for the application I am developing, which aims to streamline data management, reduce employee workload, and improve the efficiency of accessing customer information. More details and business insights about this application will be discussed later in the report.

The second problem is tied to various factors, including employee workload and satisfaction, which are influenced by profit margins. If the first and third problems are effectively addressed, the second problem can also be resolved. For example, granting only directors, trusted department heads, and team leaders full access to customer data through the proposed application can help prevent data leaks and breaches. Other recommendations, such as improving employee incentives beyond salary and fostering better team bonding, will also be discussed in the recommendations section.

Proof of Originality Google Drive Link

2. Detailed Explanation of Analysis Process/Method:

The eight months of data from 2023 underwent rigorous cleaning to prepare it for analysis. Irrelevant fields such as *Application No.* and *Biometric Status* were removed, while relevant fields like *Date of Birth* were meticulously added by extracting data from Passport PDFs. To ensure data privacy, sensitive information such as *Passport No.* was excluded. To address the challenge of distinguishing repeat applicants (second or third attempts for VISA applications), a new feature, *Attempt*, was created by analysing the frequency of the same *Passport No.* before its removal.

The analysis process for the cleaned data is discussed in a problem-oriented manner to clearly outline the approach for each problem statement.

Problem Statement – 1: Generation of more leads and consumers

I have two different types of data one is the Student VISA data and the other is Tourist VISA, even though the analysis process/method is quite similar for both but I will still make two subparts for better readability.

Excel's built-in functions, including *PivotTables*, *Pivot Charts*, and statistical tools for calculating measures such as mean, median, mode, range, etc. were extensively utilized to identify patterns and trends in both **Student VISA** and **Tourist VISA** datasets. Filters and slicers were applied to refine the data based on specific criteria, such as excluding repeat attempts using the *Attempt* field. Conditional formatting was used to enhance data visualization.

Student VISA Data:

Serial No	Student Name	Gender	University/College Name	Canadian Province	Course Taken	Date of Lodgemen	Date of Birt	Age	Intake	File Statu	Attempt
1	GURKIRAT SINGH DHILLON	MALE	UNIVERSITY OF LETHBRIDGE	ALBERTA	BACHELOR OF MANAGEMENT	02-01-2023	06-06-2004	18.57	Sep-23	REFUSED	FIRST
2	JASPAL SINGH	MALE	CAPE BRETON UNIVERSITY	NOVA SCOTIA	BACHELOR OF ARTS	06-01-2023	25-02-2001	21.86	May-23	REFUSED	FIRST
3	SIMRANJEET SINGH	MALE	UNIVERSITY OF LETHBRIDGE	ALBERTA	BACHELOR OF ARTS	07-01-2023	03-10-2001	21.26	Sep-23	REFUSED	FIRST
4	MONIKA SHARMA	FEMALE	GEORGIAN COLLEGE	ONTARIO	PROJECT MANAGEMENT	09-01-2023	11-01-1996	27.00	May-23	APPROVED	FIRST
5	ROHIT KUMAR	MALE	SHERIDAN COLLEGE	ONTARIO	ADVANCE DIPLOMA MECHANICAL ENG TECH	11-01-2023	03-10-2001	21.28	Aug-23	REFUSED	FIRST
6	VIKASH RAJ	MALE	UNIVERSITY OF LETHBRIDGE	ALBERTA	BACHELOR OF SCIENCE	11-01-2023	27-09-2002	20.29	Sep-23	REFUSED	FIRST
7	ADITYA BHARDWAJ	MALE	UNIVERSITY OF LETHBRIDGE	ALBERTA	BACHELOR OF SCIENCE	12-01-2023	26-01-2004	18.96	Sep-23	APPROVED	FIRST
8	JASJEET SINGH	MALE	CAPILANO UNIVERSITY	BRITISH COLUMBIA	ASSOCIATES OF SCIENCE	16-01-2023	02-02-2005	17.95	May-23	APPROVED	FIRST
9	NAVJEET KAUR	FEMALE	CAPILANO UNIVERSITY	BRITISH COLUMBIA	ASSOCIATES OF SCIENCE	16-01-2023	06-03-2004	18.86	May-23	APPROVED	FIRST
10	HIMANSHI	FEMALE	UNIVERSITY OF LETHBRIDGE	ALBERTA	BACHELOR OF SCIENCE	17-01-2023	29-10-2002	20.22	Sep-23	APPROVED	FIRST
11	AMRINDER SINGH	MALE	UNIVERSITY OF LETHBRIDGE	ALBERTA	BACHELOR OF ARTS	17-01-2023	23-09-2003	19.32	Sep-23	APPROVED	FIRST
12	HARSIMRAT KAUR SIDHU	FEMALE	UNIVERSITY OF LETHBRIDGE	ALBERTA	BACHELOR OF SCIENCE	27-01-2023	24-04-2002	20.76	Sep-23	REFUSED	FIRST
13	JAGJOT KAUR	FEMALE	UNIVERSITY OF SASKATCHEWAN	SASKATCHEWAN	TECH-OF-MANAGEMENT	26-01-2023	10-02-2001	21.96	Aug-23	APPROVED	FIRST
14	HARMANJOT KAUR	FEMALE	SHERIDAN COLLEGE	ONTARIO	SOCIAL SERVICE WORKER	28-01-2023	13-12-2003	19.13	Sep-23	APPROVED	FIRST
15	LOVEPREET SINGH	MALE	UNIVERSITY OF LETHBRIDGE	ALBERTA	BACHELOR OF MANAGEMENT	04-02-2023	19-11-1999	23.21	Sep-23	REFUSED	FIRST
16	SANJANA	FEMALE	SHERIDAN COLLEGE	ONTARIO	UG - SOCIAL SERVICE WORKER	04-02-2023	10-09-2004	18.40	Sep-23	APPROVED	FIRST
17	TARANDEEP SINGH	MALE	UNIVERSITY OF LETHBRIDGE	ALBERTA	BACHELOR OF MANAGEMENT	05-02-2023	05-05-2002	20.76	Sep-23	APPROVED	FIRST
18	HARSHDEEP KAUR	FEMALE	CAPILANO UNIVERSITY	BRITISH COLUMBIA	BACHELOR OF BUSINESS ADMINISTRATION	07-02-2023	23-03-2003	19.88	May-23	APPROVED	FIRST
19	YUVRAJ SINGH BATTH	MALE	ALGOMA UNIVERSITY	ONTARIO	PG - HUMAN RESOURCE MANAGEMENT	09-02-2023	15-12-1999	23.15	May-23	REFUSED	FIRST
20	HARNEET KAUR	FEMALE	NIAGARA COLLEGE	ONTARIO	UG- BUSINESS	09-02-2023	15-11-2002	20.24	Sep-23	APPROVED	FIRST

Image – 2.1. Student VISA Data Subset

The features on which the analysis will be done are *Gender, University/College Name, Canadian Province, Course Taken, Age, Intake, File Status.*

Gender:
The *Gender* field was analysed to calculate the percentage distribution of male and female applicants, revealing their respective shares in the total Student VISA applications. A pie chart was used for visualization.

University/College Name:
Since this feature contains a large number of distinct values, a pie chart was chosen to visualize the share of university or college selected by students. The pie chart effectively highlights the dominant institutions, making it easier to identify the most frequently chosen ones. To do this PivotTable was used for analysis and PivotChart was used for pie chart with university or college with very less contribution were included in others, this approach provides a clear view of the universities/colleges with the highest share, as plotting a bar graph would result in clutter due to the high number of entries.

Canadian Province:
Similar to the *University/College Name* the analysis is done using the PivotTable and PivotChart and representation is done by pie chart for proper visualisation.

Course Taken:
There are a lot of different courses so a proper visual presentation is not there as bar chart will cause clutter and pie chart will become congested. So only numerical analysis will be done through the use of PivotTable.

Age:
Age, being a continuous variable, was analysed using a histogram. This visualized the age groups most likely to go abroad for education, as well as those less likely.

Intake:
To identify the most common student intakes, a pie chart was created using the *Intake* field with the help of PivotChart and PivotTable. While a bar graph could also be used for this analysis, a pie chart was deemed more suitable as it clearly highlights intakes with significantly higher contributions, providing a better visual representation of their share relative to others. This approach ensures a concise and effective analysis of intake trends.

File Status:
A pie chart was created to examine the outcomes of applications (e.g., approved, rejected) as there can be only two choices for the *File Status* so pie chart is the best option.

Attempt as a Filter:
To avoid repetition and ensure accurate analysis, the Attempt field was used as a filter to include only the rows marked as "FIRST." This eliminated duplication and ensured that trends were based on unique applicants.

Tourist VISA Data:

Serial Number	Candidate Name	Gender	Country	Purpose of Visit	Date of Birth	Date of Lodgement	Age	File Status	Attempt
1	AMRIK SINGH	MALE	CANADA	TO MEET SON & DAUGHTER IN LAW	03-01-1939	02-01-2023	84.00	APPROVED	FIRST
2	KULDIP KAUR	FEMALE	CANADA	TO MEET SON & DAUGHTER IN LAW	18-02-1942	02-01-2023	80.87	APPROVED	FIRST
3	TARANJIT KAUR	FEMALE	CANADA	TO MEET SISTER	04-10-1990	02-01-2023	32.25	APPROVED	FIRST
4	SATINDER KAUR	FEMALE	AUSTRALIA	TO ATTEND BROTHER MARRIAGE	01-11-1992	02-01-2023	30.17	APPROVED	FIRST
5	DEEPAK	MALE	AUSTRALIA	TO MEET BROTHER	10-08-1991	03-01-2023	31.40	APPROVED	FIRST
6	TARANBIR SINGH	MALE	CANADA	SOCIAL VISIT	02-10-1979	04-01-2023	43.26	REFUSED	FIRST
7	SURJIT SINGH	MALE	AUSTRALIA	TO CELEBRATE SON BIRTHDAY	24-09-1956	04-01-2023	66.28	APPROVED	FIRST
8	TARANJIT KAUR SAINI	FEMALE	AUSTRALIA	TO CELEBRATE GRANDCHILD BIRTHDAY	08-12-1961	04-01-2023	61.08	APPROVED	FIRST
9	SARBJIT KAUR	FEMALE	CANADA	TO MEET SON & DAUGHTER IN LAW	15-10-1975	13-01-2023	47.25	REFUSED	FIRST
10	JAGVIR SINGH	MALE	AUSTRALIA	TO ATTEND BROTHER CONVOCATION	14-02-1998	13-01-2023	24.91	REFUSED	FIRST
11	VIAN THAKUR	MALE	CANADA	VISITOR	21-03-2021	16-01-2023	1.82	APPROVED	FIRST
12	KULWINDER KAUR DHARNI	FEMALE	AUSTRALIA	TO ATTEND BROTHER MARRIAGE	20-01-1988	16-01-2023	34.99	APPROVED	FIRST
13	HARPREET KAUR	FEMALE	CANADA	TO CELEBRATE SON BIRTHDAY	16-06-1977	03-02-2023	45.64	REFUSED	FIRST
14	MANDEEP SINGH	MALE	CANADA	TO CELEBRATE SISTER BIRTHDAY	10-10-1994	03-02-2023	28.32	REFUSED	FIRST
15	JAGDISH DHIMAN	MALE	AUSTRALIA	TO CELEBRATE GRANDCHILD BIRTHDAY	10-06-1953	03-02-2023	69.65	APPROVED	FIRST
16	BRIJ RANI	FEMALE	AUSTRALIA	TO CELEBRATE DAUGHTER BIRTHDAY	14-04-1958	04-02-2023	64.81	APPROVED	FIRST
17	RISHABJOT SINGH	MALE	CANADA	TO MEET MOTHER	15-03-2017	05-02-2023	5.90	APPROVED	FIRST
18	AMIT	MALE	AUSTRALIA	TO MEET SISTER	15-01-1990	05-02-2023	33.06	APPROVED	FIRST
19	HARNEET KAUR	FEMALE	CANADA	TO MEET SPOUSE	07-10-1993	18-02-2023	29.37	REFUSED	FIRST
20	BHAGWANT SINGH	MALE	AUSTRALIA	TO CELEBRATE DAUGHTER BIRTHDAY	22-02-1979	19-02-2023	43.99	APPROVED	FIRST

Image – 2.2. Tourist VISA Data Subset

The features on which the analysis will be done are *Gender, Country, Purpose of Visit, Age, File Status.*

Gender:
The *Gender* field was analysed similarly like for the Student VISA dataset, the percentage distribution of male and female applicants was calculated, revealing their respective shares in the total Tourist VISA applications. A pie chart was used for visualization.

Country:
A bar chart was plotted to visualize the distribution of Tourist VISA applications across countries like Canada, Australia, and the United Kingdom. The analysis was conducted using a PivotTable to count the applications and a PivotChart for visualization.

Purpose of Visit:
Similar to the *Course Taken* feature of the Student VISA Data, this feature also had numerous distinct values. There are a lot of different purposes so a proper visual presentation is not there as bar chart will cause clutter and pie chart will become congested. So only numerical analysis will be done through the use of PivotTable.

Age:
Age, being a continuous variable, was analysed using a histogram. This visualized the age groups most likely to apply for tourist VISA as well as those less likely.

File Status:
Similar to the Student VISA analysis, a pie chart was plotted to examine approval and rejection percentage for Tourist VISA applications.

Attempt as a Filter:
As with Student VISA data, the *Attempt* field was used to filter only "FIRST" attempts, ensuring accurate and unique insights.

Google Drive Link for both the datasets is provide below:

Student VISA Data
Tourist VISA Data

Problem Statement – 3: Developing a way to access person's data easily and in a time efficient way

I am talking about the process/method for the problem statement 3 before 2 is because solution of problem statement 3 will become one of the base for the solution of problem statement 2.
To streamline the data collection process and mitigate the challenges of managing unorganized Excel sheets and hard copies, I am developing a web application. The application will use **Flask** for the backend, **HTML, Bootstrap, and JavaScript, Jinja2 Templates** for the frontend, and **PostgreSQL** for database storage. **SQLAlchemy** was utilized as the Object Relational Mapper (ORM). Hosted locally on the company's Wi-Fi, the application allows employees to directly input applicant data through a user-friendly form, eliminating reliance on Excel files or manual entries from hard copies. This solution ensures easy access, efficient data management, and significant time savings.

Problem Statement – 2: Increasing Resource Credibility, Retention and Productivity

To address concerns highlighted by Director Mr. Mandeep Hooda regarding employees misusing applicant data by providing the data to other companies without his knowledge, I am implementing a feature in the web application that ensures transparency and accountability. The admin who creates an employee account will have access to all applicant data handled by that employee, provided digitization of forms is made mandatory. This will prevent unauthorized sharing of data, improve resource credibility, and boost productivity. For retention strategies, insights from the **Equal Employment Opportunity Commission (EEOC)** report will be analysed and applied.

3. Results and Findings:

The analysis methods and processes outlined in the "Detailed Explanation of Analysis Process/Method" were consistently applied to uncover key trends and insights. This section summarizes the results, supported by relevant statistics, graphs, and charts, categorized into four subparts: **Student VISA Data**, **Tourist VISA Data**, **Web Application**, and **Retention and Productivity Improvements**. Each subpart highlights specific findings derived from the datasets and features of the newly developed web application, ensuring actionable insights to address the identified problem statements.

Student VISA Data:

Gender:

Attempt feature was used as filter so that no person is counted twice or thrice, and after using PivotTable it was seen 39% percent of the total student applying for Student VISA for Canada are Female.

Attempt	FIRST
Gender	**Number of Students**
FEMALE	42
MALE	66

Table – 3.1. PivotTable for Gender (Student VISA Data)

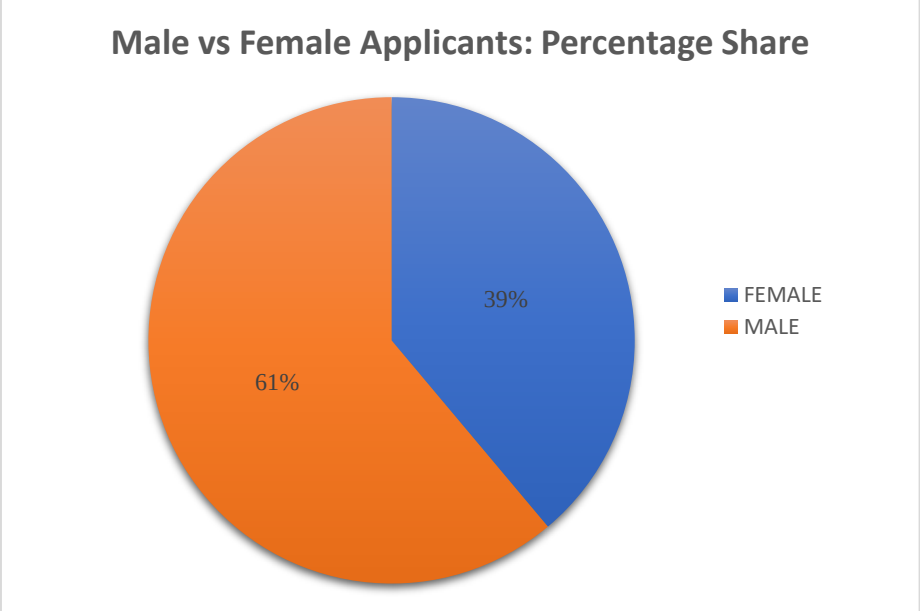

Figure – 3.1. Gender Distribution (Student VISA Data)

University/College Name:

Again, *Attempt* was used a filter and after analysing through PivotTable it is seen that out of 23 Universities/Colleges to which students chose, 2 Universities alone have about 49% share. University of Lethbridge with 30% followed by Algoma University with 19%.

University/College Name	Number of Students
UNIVERSITY OF LETHBRIDGE	32
ALGOMA UNIVERSITY	21
OTHERS	18
CAPILANO UNIVERSITY	8
LOYALIST COLLEGE	8
CONESTOGA COLLEGE	6
GEORGIAN COLLEGE	6
UNIVERSITY CANADA WEST (UCW)	5
CAPE BRETON UNIVERSITY	4
Grand Total	**108**

Table – 3.2. University/College Table after Grouping/Aggregation in Others(Student VISA Data)

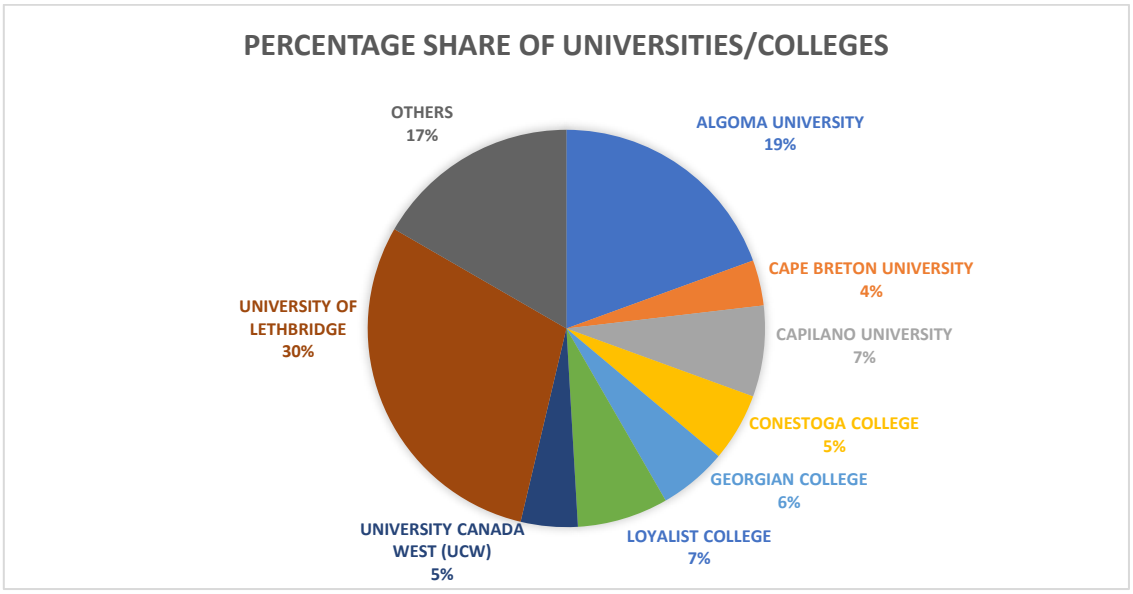

Figure – 3.2. University/College Distribution (Student VISA Data)

Canadian Province:

After using *Attempt* feature to filter out those with Second or Third attempt, analysis of the *Canadian Province* feature was done using PivotTable out of the 5 provinces which students chose for education, 2 alone have 80% share. Ontario with 50% followed by Alberta with 30%.

Attempt	FIRST
Canadian Province	**Number of Students**
ALBERTA	33
BRITISH COLUMBIA	16
NOVA SCOTIA	4
ONTARIO	54
SASKATCHEWAN	1

Table – 3.3. PivotTable for Canadian Province (Student VISA Data)

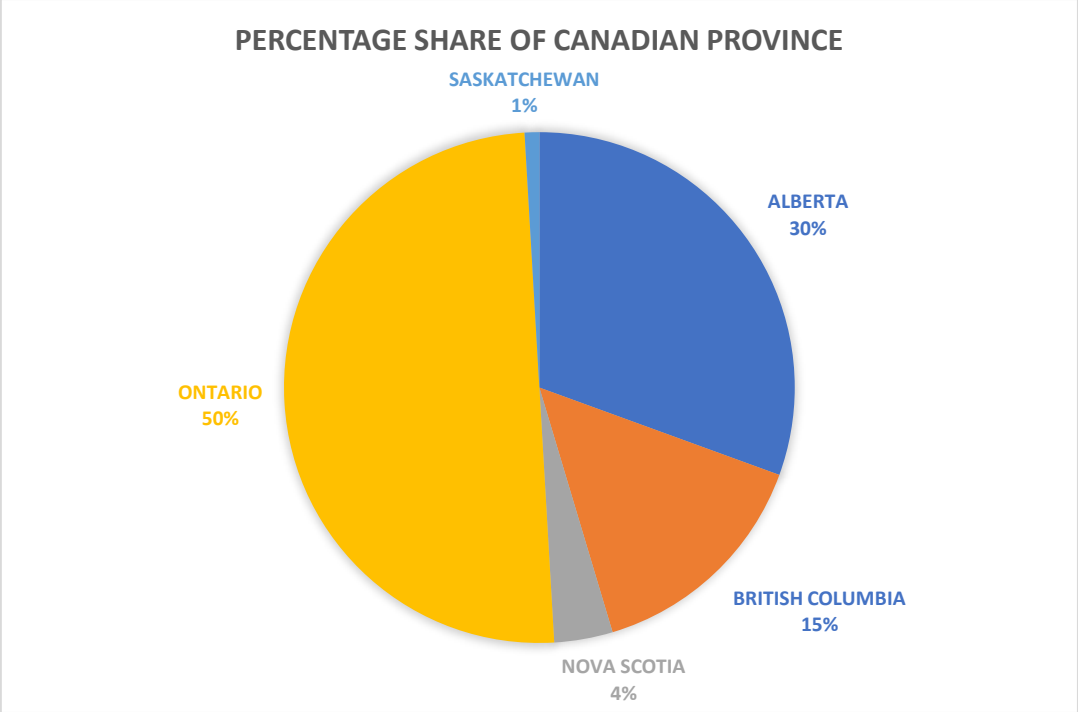

Figure – 3.3. Canadian Province Distribution (Student VISA Data)

Course Taken:

Attempt as filter while using PivotTable it was analysed that the most common course taken by the students is Bachelor of Arts with 13.89% followed by Bachelor of Science with 9.26% making it the second common.

Course Taken	Percentage of Students
BACHELOR OF ARTS	13.89%
BACHELOR OF SCIENCE	9.26%
BACHELOR OF MANAGEMENT	7.41%
PG - HUMAN RESOURCE MANAGEMENT	5.56%
ASSOCIATES OF SCIENCE	4.63%
BA - POLITICAL SCIENCE	4.63%

Table – 3.4. Significant Courses Percentage Table (Student VISA Data)

Age:

After analysis (using *Attempt* as filter) of the *Age* feature it was seen that the average age of student is 21.8 years. After creating the histogram using the Excel tools it was seen that the most common age group for Student VISA is 19.3 to 21.6 years, contributing to about 36.1%

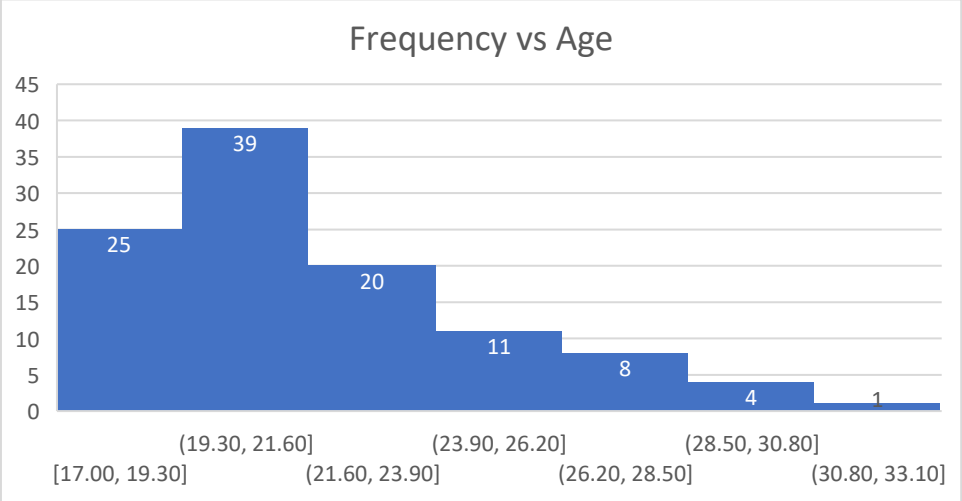

Figure – 3.4. Frequency vs Age Histogram (Student VISA Data)

Intake:

After using filters and analysis it was seen that the most common *Intake* was September Intake which have about 78% of the total share followed by May Intake with 16%.

Attempt	FIRST

Intake	Number of Students
Jan	3
May	17
Jul	1
Aug	2
Sep	85
Grand Total	108

Table – 3.5. PivotTable of Intake (Student VISA Data)

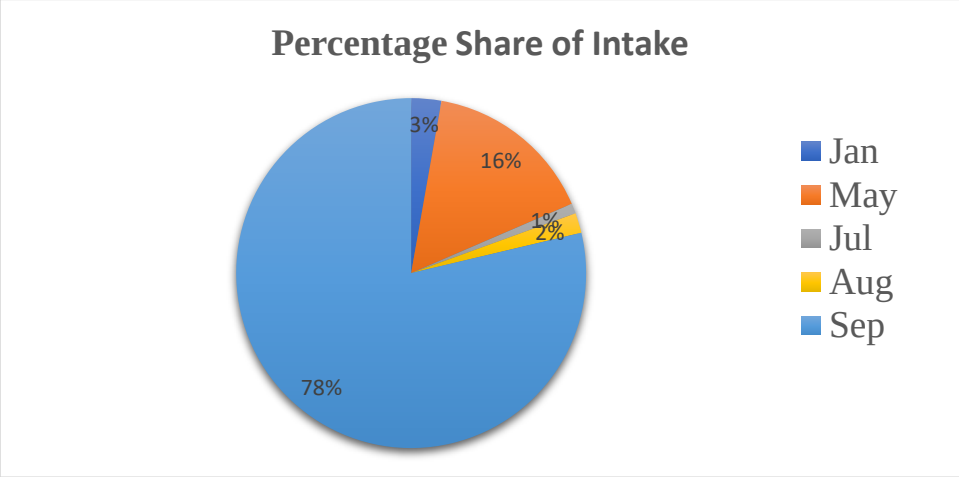

Figure – 3.5. Intake Distribution (Student VISA Data)

File Status:

After analysis it was seen that about 38% of the applications which were sent for the First attempt were rejected. Indicating that significant number of application gets rejected.

Attempt	FIRST

File Status	Number of Students
APPROVED	67
REFUSED	41
Grand Total	**108**

Table – 3.6. PivotTable of File Status (Student VISA Data)

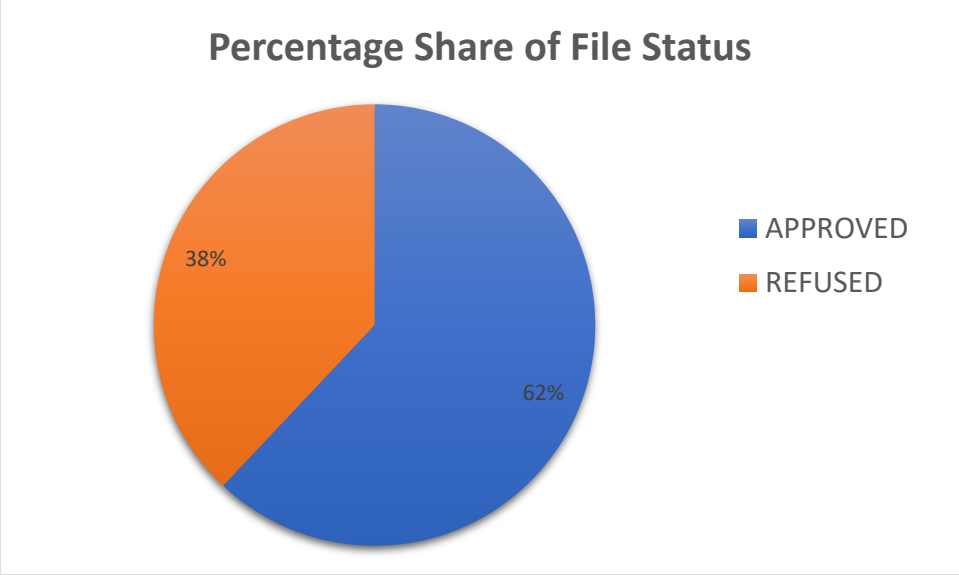

Figure – 3.6. File Status Distribution (Student VISA Data)

Tourist VISA Data:

Gender:

Similar to the Student VISA *Attempt* feature was used for the filter purposes while using PivotTable and it was seen that 39% of the tourist VISA applicants are female. This percentage is similar to the gender percentage share of Student VISA data.

Attempt	FIRST
Gender	**Number of People**
FEMALE	34
MALE	54

Table – 3.7. PivotTable of Gender (Tourist VISA Data)

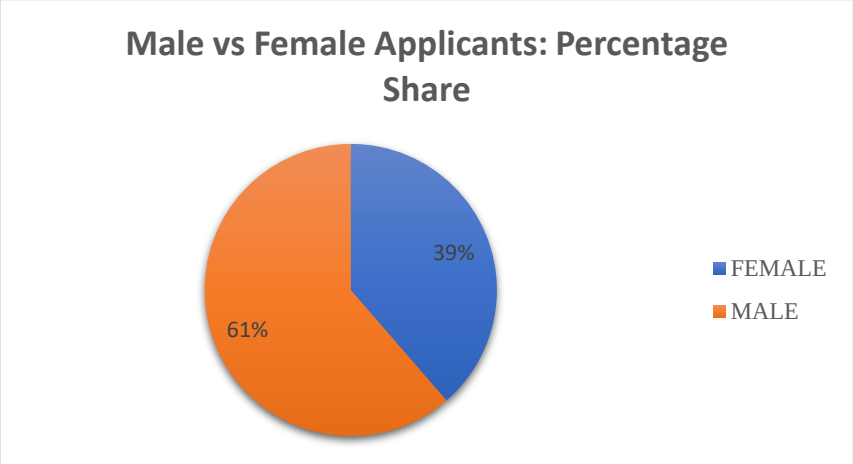

Figure – 3.7. Gender Distribution (Tourist VISA Data)

Country:

The Tourist VISA data provided by the company included applications for only three countries. Upon analysis, it was found that 55% of the applicants applied for a Canadian Tourist VISA, making it the most popular choice. 29% of the applicants preferred Australia, while 16% opted for the United Kingdom, reflecting the distribution of interest among these destinations.

Attempt	FIRST
Country	**Number of People**
AUSTRALIA	26
CANADA	48
UNITED KINGDOM	14

Table – 3.8. PivotTable of Country (Tourist VISA Data)

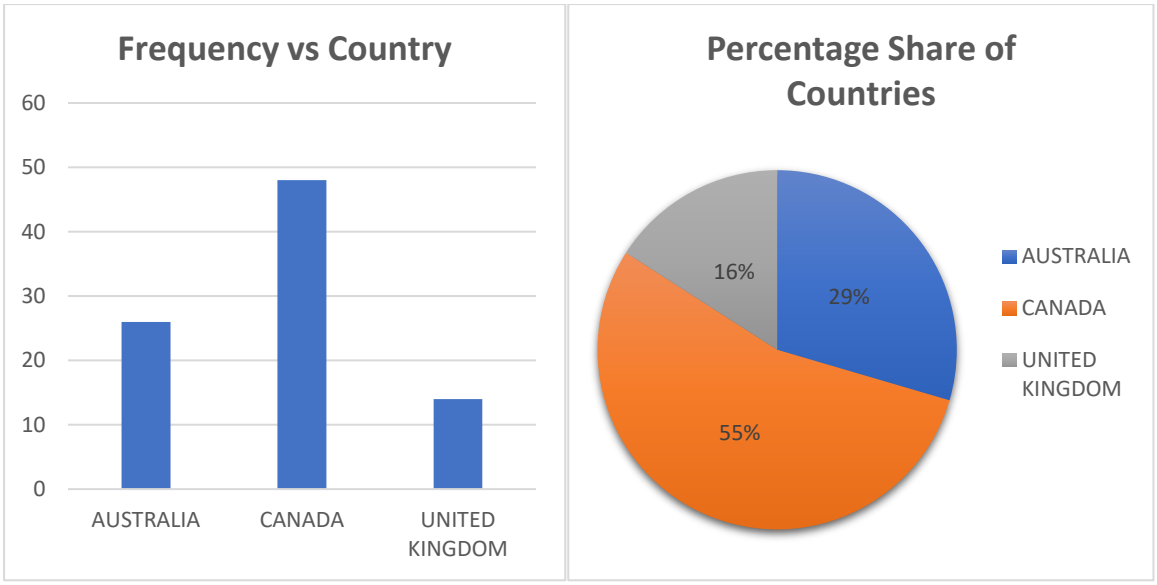

Figure – 3.8. Country Distribution with Pie and Bar Chart (Tourist VISA Data)

Age:

Similar to the Student VISA data after analysis (using *Attempt* as filter) of the *Age* feature it was seen that the average age of student is 42.3 years. After creating the histogram using the Excel tools it was seen that the most common age group for Tourist VISA is 40.82 to 53.82 years, contributing to about 36.4%.

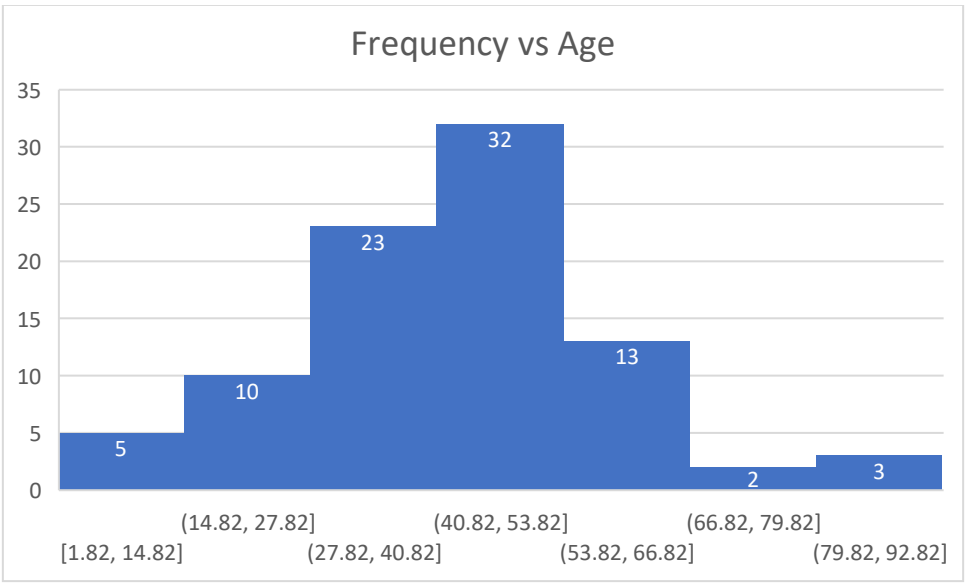

Figure – 3.9. Frequency vs Age Histogram (Tourist VISA Data)

Purpose of Visit:

After using *Attempt* as filter and doing the analysing it was found that the most common purpose of visit is "TO CELEBRATE SON BIRTHDAY" with 13.64% followed "SPOUSE OPEN WORK PERMIT" and "TO CELEBERTAE DAUGHTER BRITHDAY" with 11.36% and 10.23% respectively.

Purpose of Visit	Percentage of People
TO CELEBRATE SON BIRTHDAY	13.64%
SPOUSE OPEN WORK PERMIT	11.36%
TO CELEBRATE DAUGHTER BIRTHDAY	10.23%
TO ATTEND DAUGHTER CONVOCATION	9.09%
TO MEET SON & DAUGHTER IN LAW	6.82%
TO MEET BROTHER	4.55%
TO MEET SISTER	4.55%
VISITOR	4.55%

Table – 3.9. Significant Purpose of Visit Table (Tourist VISA Data)

File Status:

After the analysis with PivotTable, it was seen that about 41% of the applicants who applied for the first time were rejected. This percentage is more as compared to the rejection percentage of Student VISA applications.

Attempt	FIRST
File Status	Number of People
APPROVED	52
REFUSED	36

Table – 3.10. PivotTable of File Status (Tourist VISA Data)

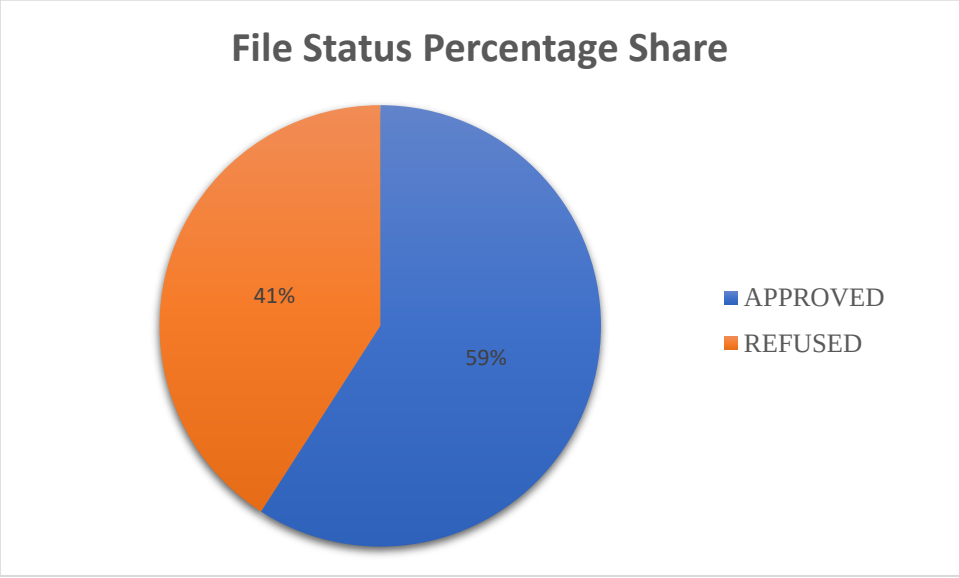

Figure – 3.10. File Status Distribution (Tourist VISA Data)

Web Application:

The application, named **"StudifyALLin1"**, was successfully developed with the following tech stack: **Flask** for the backend, **PostgreSQL** for the database, and **Bootstrap, JavaScript, and HTML, Jinja2 Templates** for the frontend. **SQLAlchemy** was utilized as the Object Relational Mapper (ORM). The application's form strictly adheres to the assessment form provided by the company. It will be hosted locally on the company WIFI using single computer (mostly Director's Or another administrator's) as server.

Core Functionalities:

- **Roles:** Three distinct roles—Admin, Employee, and Applicant.
- **Admin Capabilities:** Admins can create employee accounts, update employee details except "Password" and view all applicant data associated with their employees. Admin can also change his/her password. Create and update applicant data.
- **Employee Capabilities:** Employee can change his/her password. Create and update applicant data.
- **Data Management:** Both Admin and Employee can create and update applicant data.
- **File Export:** A feature to download filled forms in Word or PDF format.

A demo video showcasing the application, the database schema, the application zip file, the complete application report and the company assessment form are included in the Google Drive link below.
Google Drive Link: StudifyAllin1

Retention and Productivity Improvements:

After analysing the report on retention by the U.S. Equal Employment Opportunity Commission (EEOC), it was found that emphasizing leadership commitment to EEO (Equal Employment Opportunity) and diversity significantly improves employee satisfaction and retention. Organizations where senior leaders actively communicated the importance of inclusivity and fairness saw reduced turnover rates and higher employee loyalty.
Another finding was that offering robust career development opportunities, such as Individual Development Plans (IDPs) and succession planning, enhanced both retention and productivity. Employees who perceived clear paths for growth and equal chances for advancement were more motivated to perform, leading to overall organizational efficiency. Agencies with structured development programs also reported more engagement and fewer cases of dissatisfaction.
Another important insight is the value of data-driven decision-making. By analysing hiring and separation data, agencies could identify patterns affecting specific demographic groups and address those issues effectively. Tools like employee climate surveys and 360-degree evaluations allowed organizations to gauge workforce sentiment and implement changes before dissatisfaction led to turnover, strengthening both retention and productivity.
Source: https://www.eeoc.gov/federal-sector/tips-employee-retention

4. Interpretation of Results and Recommendation:

After analysing both datasets, key findings were identified. Based on these insights, interpretations were made, followed by recommendations to help the company address the challenges. This section outlines the interpretations and provides actionable recommendations for resolving the issues effectively.

Interpretations:
The interpretations are divided into 3 subparts **Student VISA Data**, **Tourist VISA Data** and **Retention and Productivity Improvements.**

Student VISA:

- Gender: Female applicants constitute 39% of the total student applications for Canadian Student VISAs, indicating a notable gender distribution.
- University/College Preferences: Two universities, the University of Lethbridge (30%) and Algoma University (19%), account for nearly half (49%) of the total applications, showcasing their popularity among students.
- Canadian Province Choices: Ontario (50%) and Alberta (30%) dominate as the top provinces for education, collectively capturing 80% of the student preferences.
- Course Popularity: Bachelor of Arts (13.89%) is the most sought-after course, followed by Bachelor of Science (9.26%), reflecting students' academic interests.
- Age Distribution: The average age of applicants is 21.8 years, with the most common age group falling between 19.3 and 21.6 years.
- Intake Trends: The September Intake leads with 78% of the applications, followed by May Intake at 16%, indicating a strong preference for specific academic sessions.
- File Status: A significant 38% of first-attempt applications were rejected, highlighting potential gaps in application accuracy or eligibility criteria.

Tourist VISA:

- Gender: Similar to Student VISA data, 39% of Tourist VISA applicants are female, reflecting a consistent gender distribution across both datasets.
- Country Preferences: Canada emerges as the top choice for Tourist VISAs, accounting for 55% of applications, followed by Australia (29%) and the United Kingdom (16%).
- Age Distribution: The average age of Tourist VISA applicants is 42.3 years, with the most common age group ranging from 40.82 to 53.82 years, indicating a preference among middle-aged individuals.
- Purpose of Visit: The most frequent purpose for visiting is "To Celebrate Son's Birthday" (13.64%), followed by "Spouse Open Work Permit" (11.36%) and "To Celebrate Daughter's Birthday" (10.23%).
- File Status: Rejections for first-time Tourist VISA applications stand at 41%, a higher rate compared to Student VISA rejections, indicating more stringent requirements or discrepancies in Tourist VISA applications.

Retention and Productivity Improvements:

- Leadership commitment to EEO (Equal Employment Opportunity) and diversity improves employee satisfaction and reduces turnover.
- Clear communication of inclusivity by senior leaders strengthens employee loyalty.
- Career development programs like IDPs and succession planning enhance retention and boost motivation.
- A transparent growth path increases employee engagement and overall organizational efficiency.
- Data-driven decision-making helps identify retention challenges and address them proactively.
- Regular employee climate surveys and 360-degree evaluations provide actionable insights to improve retention.
- Agencies with structured development programs experience higher productivity and lower dissatisfaction.

Recommendations:

Recommendations will be presented based on the results, findings, and interpretations, organized into three subparts corresponding to the three identified problem statements.

Problem Statement – 1: Generation of more leads and consumers

- Targeting Female Applicants:
    - Given that 39% of both Student and Tourist VISA applicants are female, special discounts and promotional packages tailored for female applicants can be introduced. For instance, "Women's Week" offers or group discounts for female students or travellers can attract more leads.

- Promoting Canadian Tourist VISAs:
    - Since 55% of Tourist VISA applicants prefer Canada, advertisements emphasizing the benefits of traveling to Canada, such as its scenic beauty and ease of application, should be prioritized. These ads can be strategically placed on social media and travel platforms.

- Strategic Partnerships with Key Universities:
    - Partner with leading institutions like the University of Lethbridge and Algoma University to offer exclusive admission deals, scholarships, or fee waivers for referred students, boosting the company's reputation and lead generation

- Expanding University Options in Popular Provinces:
    - With Ontario and Alberta making up 80% of the student preferences, adding more university options in these provinces can capture a broader student demographic. Highlighting these expanded choices in marketing campaigns will also enhance interest.

- School Seminars and Awareness Campaigns:
    - Conduct targeted seminars in schools, focusing on students from arts and non-medical streams, as these students predominantly opt for Bachelor of Arts and Science. Personalized counselling sessions can also boost credibility and conversions.

- AI-Driven Ad Campaigns:
  Use artificial intelligence to create tailored advertisements for different demographics. For example:

    - Ads focusing on Bachelor of Arts and Science for younger audiences of age group of 19.30 to 21.60 years.
    - Family-centric ads for the age group of 40.82 to 53.82 years, emphasizing Tourist VISA packages.

- Special Discounts and packages for Rejected Applicants:
  As there is a high Given the high percentage of visa rejections, the following strategies can be implemented to assist and retain these applicants effectively:

    - Offer incentives like zero-cost processing for obtaining a new offer letter for applicants reapplying after a rejection. This could encourage loyalty and repeat applications.
    - Offer reduced-cost packages or exclusive deals to applicants with rejected VISAs, including discounted reapplication fees or tailored offers, encouraging them to reapply through your services and enhancing customer retention.

- Family Function Tourist Packages:
    - Provide special discounts for applicants traveling for family functions like birthdays or anniversaries. Customized “Family Celebration” packages can attract this specific audience segment effectively.

- Leverage September Intake Popularity:
    - Design targeted campaigns promoting the September intake as the most sought-after academic session. Offer early bird discounts, streamlined application processes, or bundled services for students aiming to apply during this period to maximize leads and conversions.

Problem Statement – 2: Increasing Resource Credibility, Retention and Productivity

- Mandatory Application Use:
  Mandating the use of the new application by all employees will ensure consistent, accurate data entry, enhance accountability, and streamline data management, improving overall system efficiency.

- Adopt an Integrated Application System:
  Implement a centralized application system across all departments to ensure data accuracy, streamline workflows, and improve resource credibility.

- Focus on Leadership Development:
  Encourage senior leaders to promote inclusivity and diversity, actively supporting EEO (Equal Employment Opportunity) initiatives to foster a culture of loyalty, trust, and employee retention.

- Career Growth Opportunities:
  Provide clear career progression paths through regular performance reviews, development plans, and opportunities for skill enhancement to motivate and retain employees.

- Implement Employee Engagement Programs:
  Introduce mentorship programs, training workshops, and team-building activities to engage employees and create a culture of growth and satisfaction.

- Leverage Data for Employee Retention:
  Use employee data insights to understand retention trends and challenges, implementing targeted strategies such as retention bonuses or flexible work arrangements.

- Frequent Feedback and Surveys:
  Regularly gather employee feedback through surveys or informal check-ins to identify areas of dissatisfaction early, allowing for timely interventions.

- Offer Work-Life Balance Benefits:
  Promote work-life balance initiatives, such as flexible working hours, wellness programs, and remote working options, to enhance employee well-being and productivity.

Problem Statement – 3: Developing a way to access person's data easily and in a time efficient way

The newly developed application provides a streamlined, efficient way to access and manage personal data, offering significant benefits in time-saving and organization. By mandating regular use, all data will be entered and updated consistently, ensuring accuracy and reducing errors. The application's centralization of data makes it easier to track and retrieve information, improving accessibility for authorized users. Its use will enhance efficiency, leading to more informed decision-making and smoother operations.

By implementing the recommendations effectively, all the challenges outlined in the problem statements will be addressed, leading to significant improvements and measurable results.