KPU Assignment

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Problem Statement:

To create an interactive dashboard from a given data source with various graphs to represent the following:

- Number of credits
- Unique count of students
- Count of CRNs

Additionally, I have included two more graphs to highlight the more detailed aspect of the data as follow:

- Number of courses by gender
- Number of courses by student time status

These graphs should respond to the following slicers:

- International or Domestic
- Student Level
- Credential Types
- Age group
- Course Faculty
- Program Faculty

Considered approach for this problem:

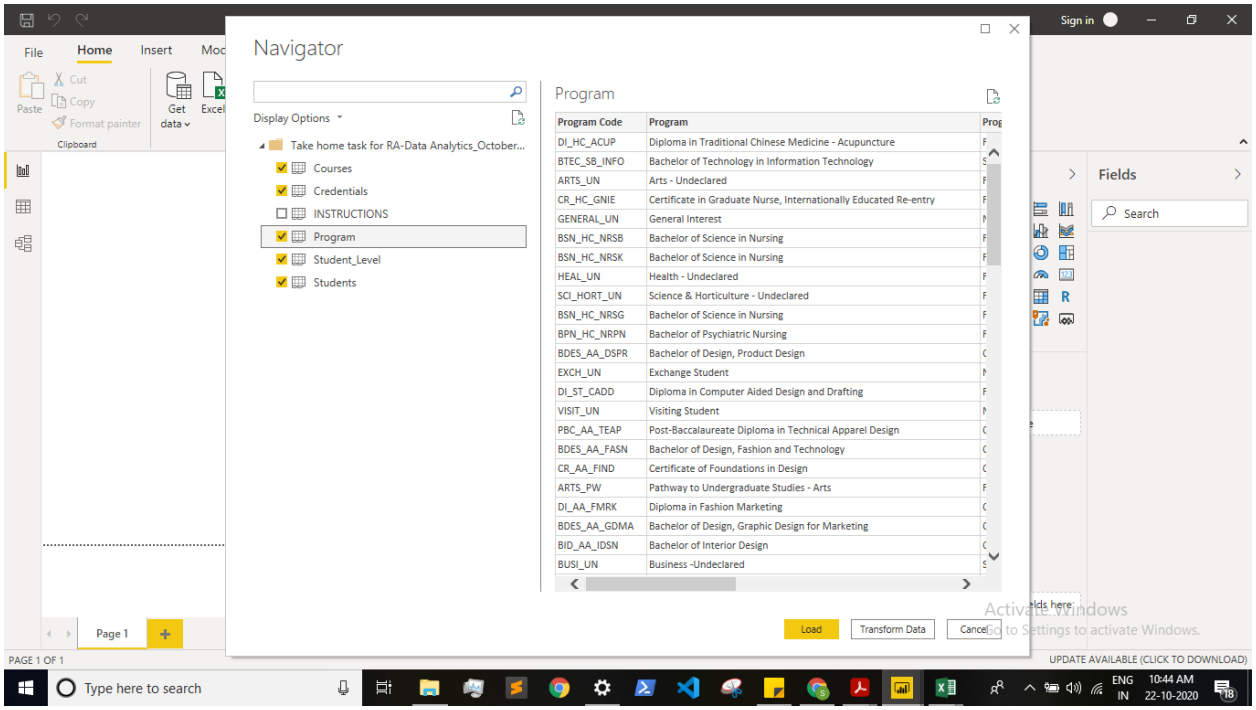
We can use various visualization tools like Excel, Power BI, Tableau for preparing this report.

For this workbook, I have used Power BI. I prefer Power BI because we can pre-process and manipulate data more conveniently.

Following are the steps followed while preparing this report:

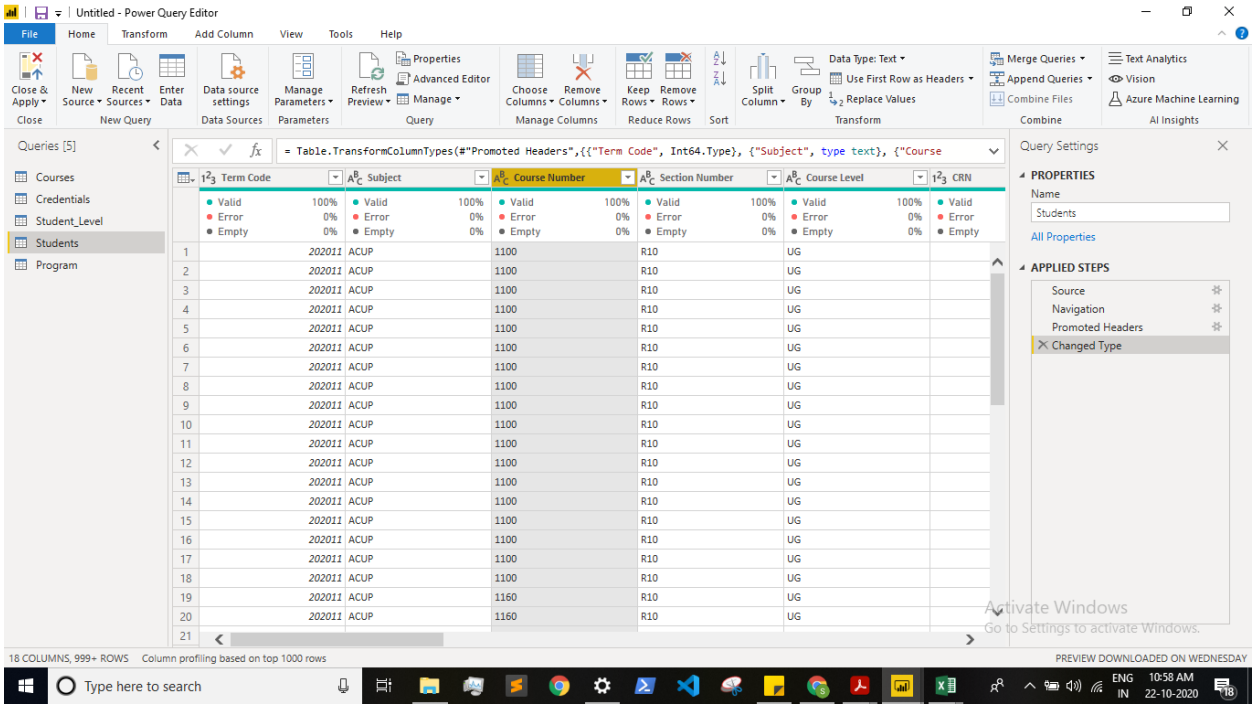
Step 1: Get Data

Select the appropriate data sources. Here, it was excel so I selected an Excel file from the local PC and select the required sheets.



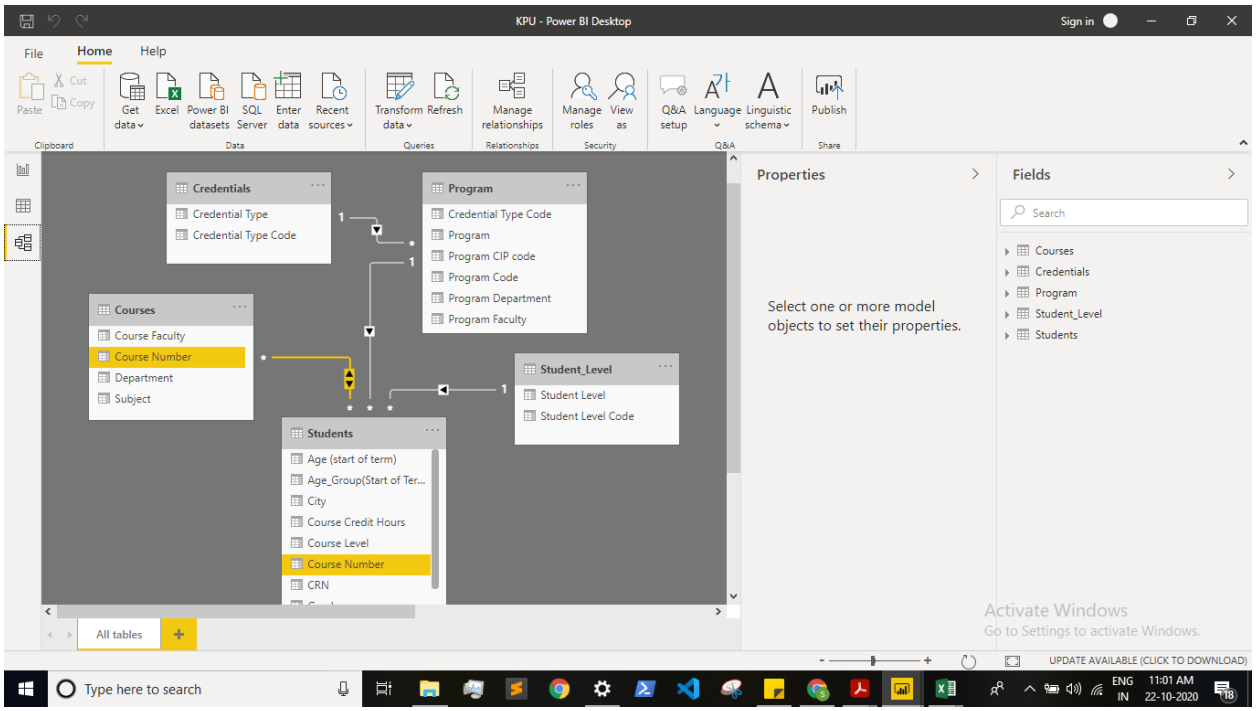
Step 2: Transform Data

Make the required changes in the datatypes and remove null values. If we want to create any additional data model, then we can do it here.
Check the validity of the data.
In this case, I have changed the data type of field Course Number from Decimal number to Text (as it was contained few non-numeric values as well).
Then click ‘Close & Apply’



Step 3: Data Modelling

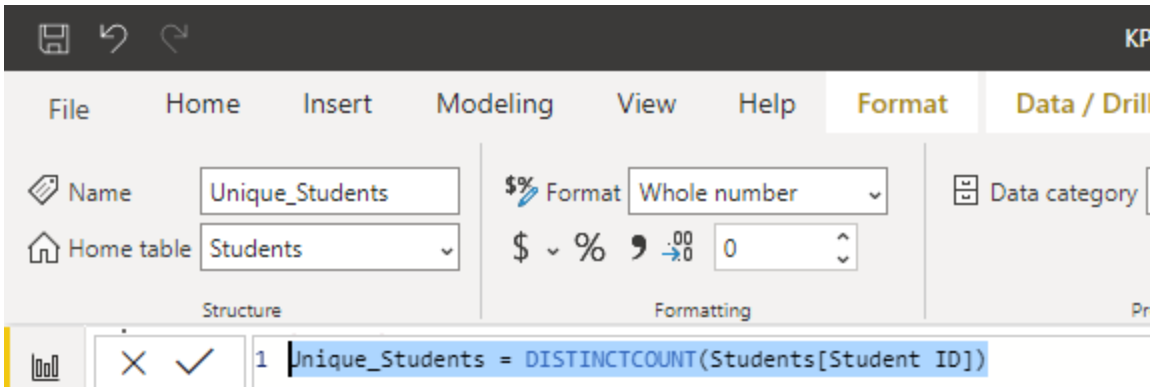
Establish relationships between various data models.



Step 4: Create Measure

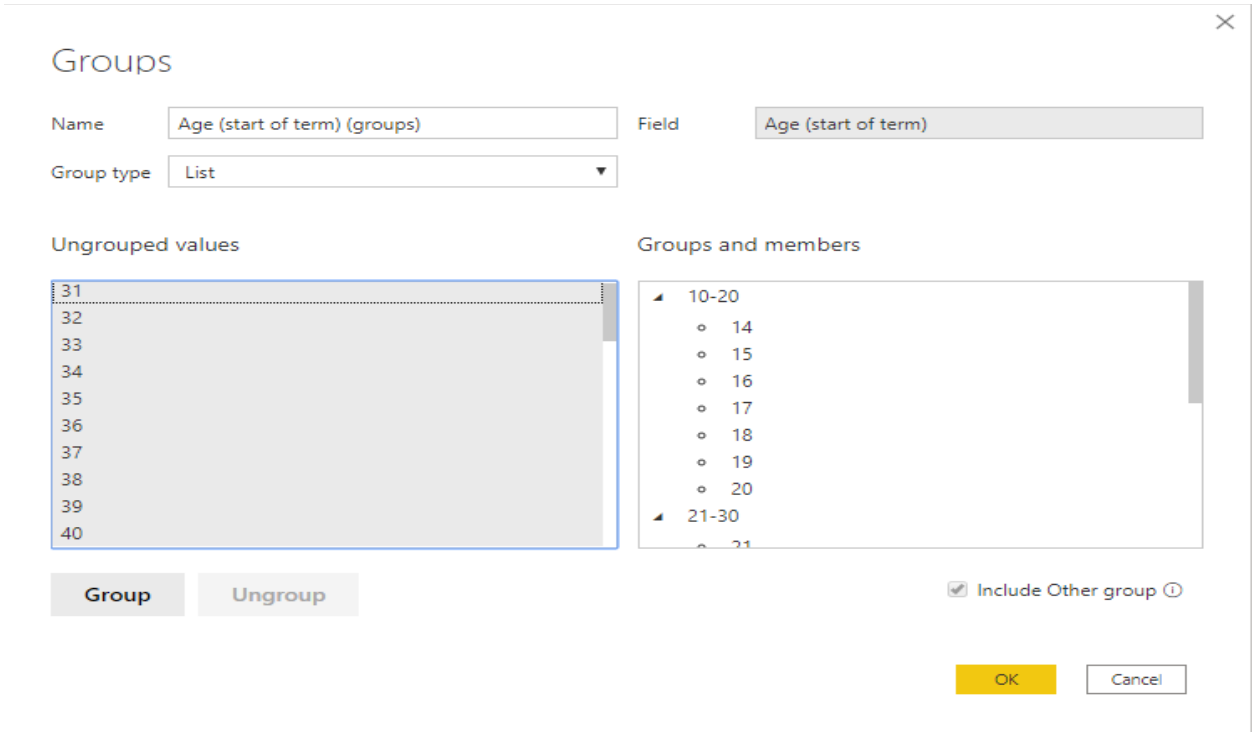
As mentioned in the problem statement, we need to design a graph for a unique number of students.
Hence, I introduced a new measure here as follow:

```
Unique_Students = DISTINCTCOUNT(Students[Student ID])
```



Step 5: Create Group

We need to use slicer for the age group.
Therefore, create new groups on the age column.
Range would be 10-20, 21-30, 31-40, 41-50, 51-60, 61-70 and Above 70.

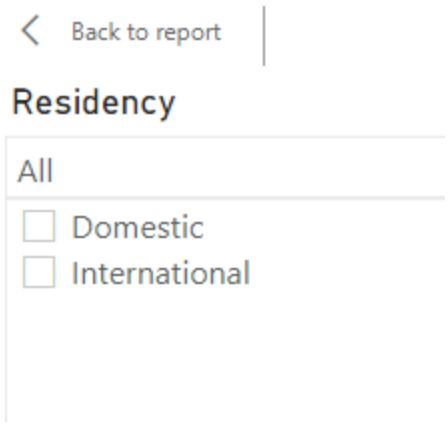


Step 6: Add Slicers

Use Slicers so that our graphs would respond according to slicers.

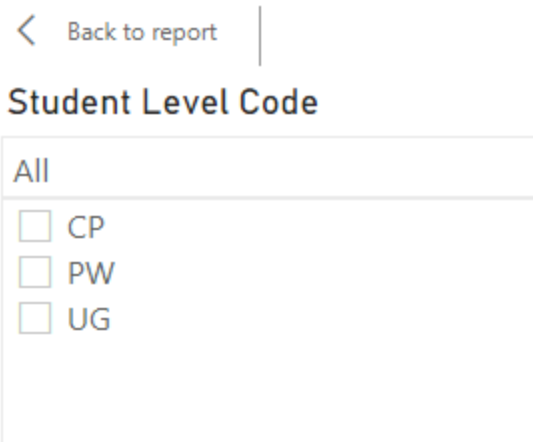
Slicer 1: International or Domestic (Residency)

This slicer will slice the entire report on the basis of the student's residential status i.e.Domestic or International.



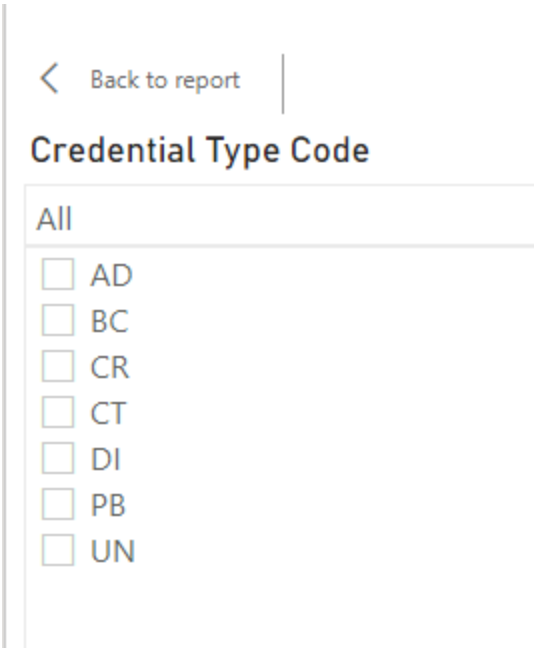
Slicer 2: Student Level

This slicer will slice the report on the basis of student-level code i.e. PW-Pathway, CP-College Prep, UG-Undergraduate



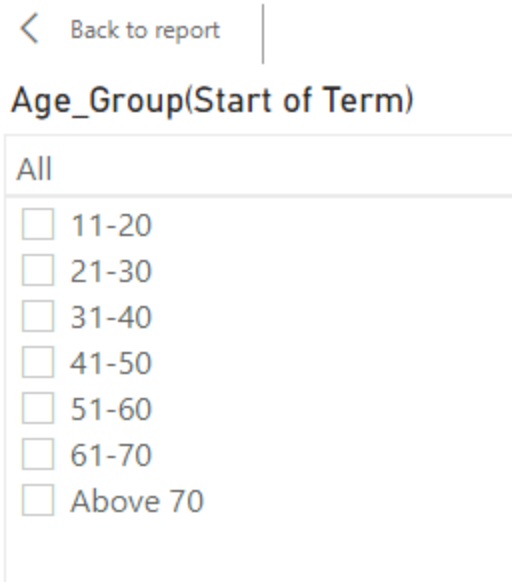
Slicer 3: Credential types

This slicer will slice the report on the basis of credential type code i.e. DI-Diploma, BC-Baccalaureate, UN-Undeclared, CR-Certificate, etc.



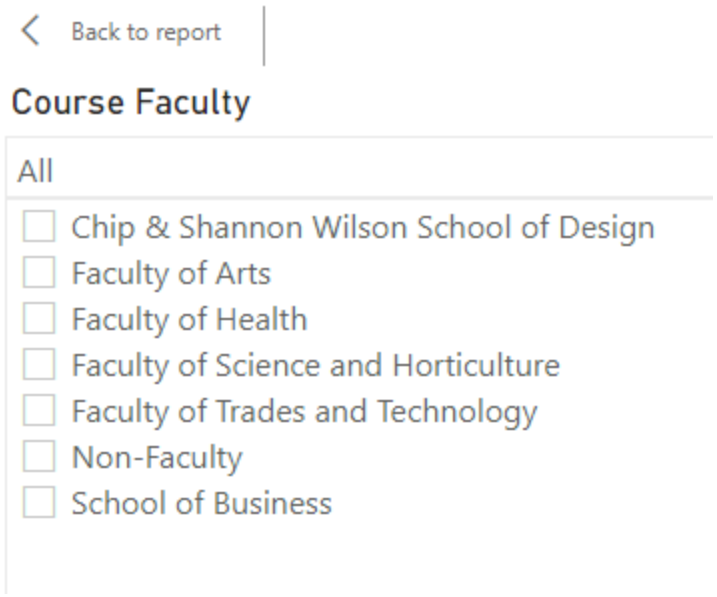
Slicer 4: Age Group

This slicer will slice the report on the basis of the student's age group as per the start of term i.e. 11-20, 21-30, 31-40, 41-50, 51-60, 61-70, and Above 70.



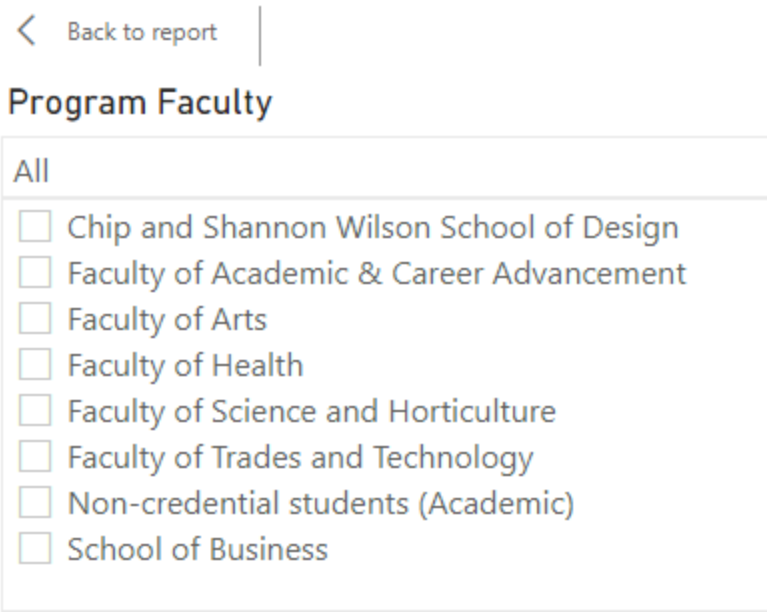
Slicer 5: Course Faculty

This slicer will slice the report on the basis of Course Faculty i.e. Faculty of Arts, Faculty of Health, School of Business, etc.



Slicer 6: Program Faculty

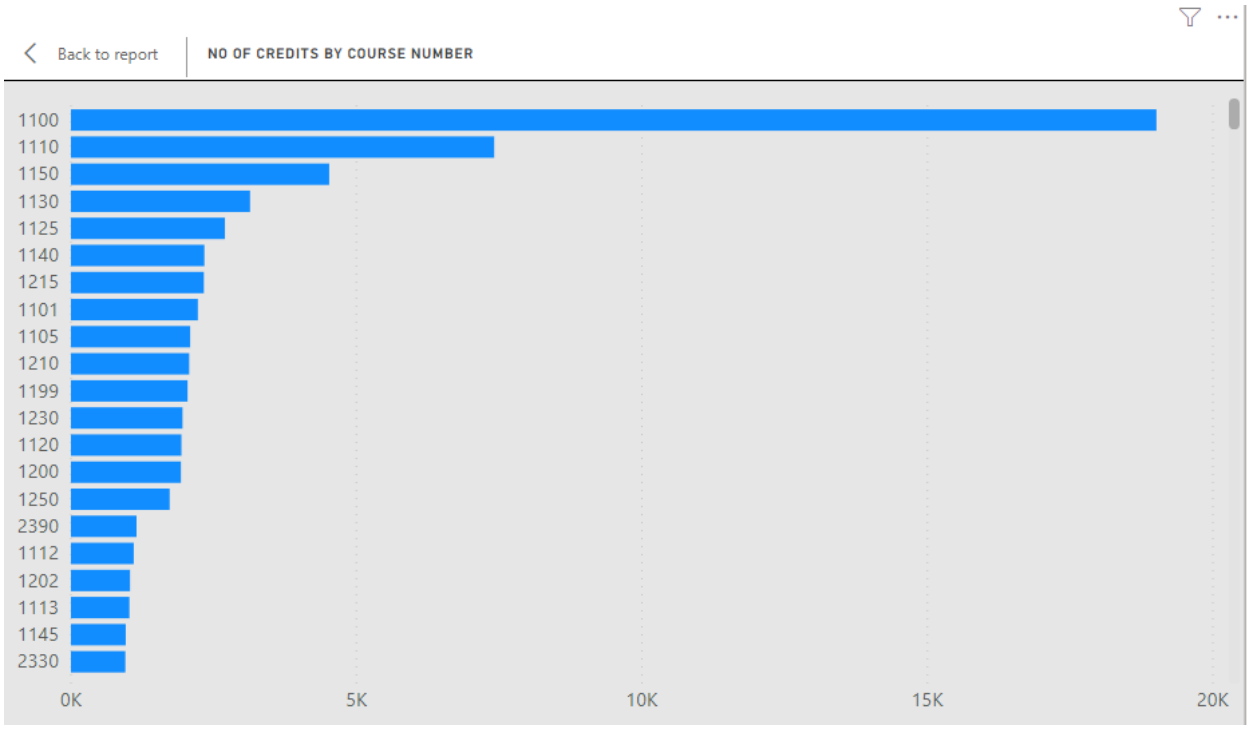
This slicer will slice the report on the basis of ProgramFaculty i.e. Faculty of Academic & Career Advancement, Faculty of Science & Horticulture, School of Business, etc.



Step 7: Add Graphs

Graph 1: No. of Credentials by Course Number

For this graph, I have used a visual ‘Clustered Bar Chart’ so that we can represent the total number of course credit hours students will get per course number.



Graph 2: Count of CRNs

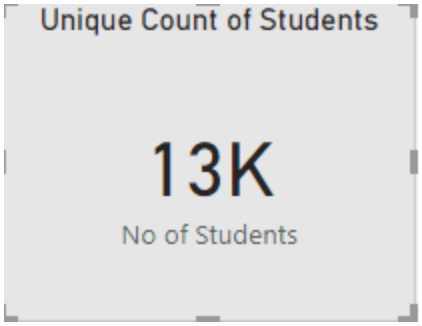
For this graph, I have used a visual ‘Matrix’ so that we can represent the count of CRNs against each course number.

Back to report | COUNT OF CRNS

Course Number	CRN
1100	6637
1101	909
1102	193
1103	98
1104	157
1105	774
1106	68
1107	245
1110	2743
1111	232
1112	380
1113	354
1114	64
1115	272
1116	22
1117	85
1118	63
1120	685
Total	**42737**

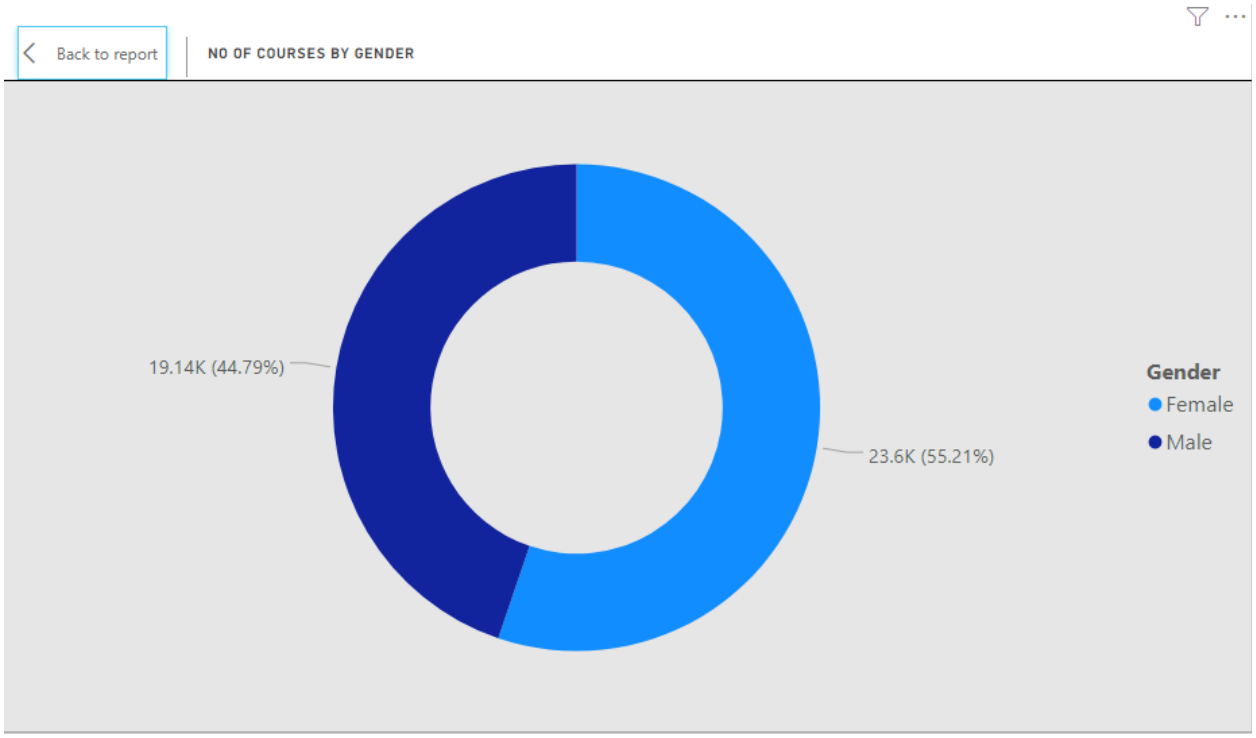
Graph 3: Unique count of students

For this graph, I have used a simple visual called ‘Card’ so that for every slicer/filter we can appropriately show the unique no of students who falls under that condition.



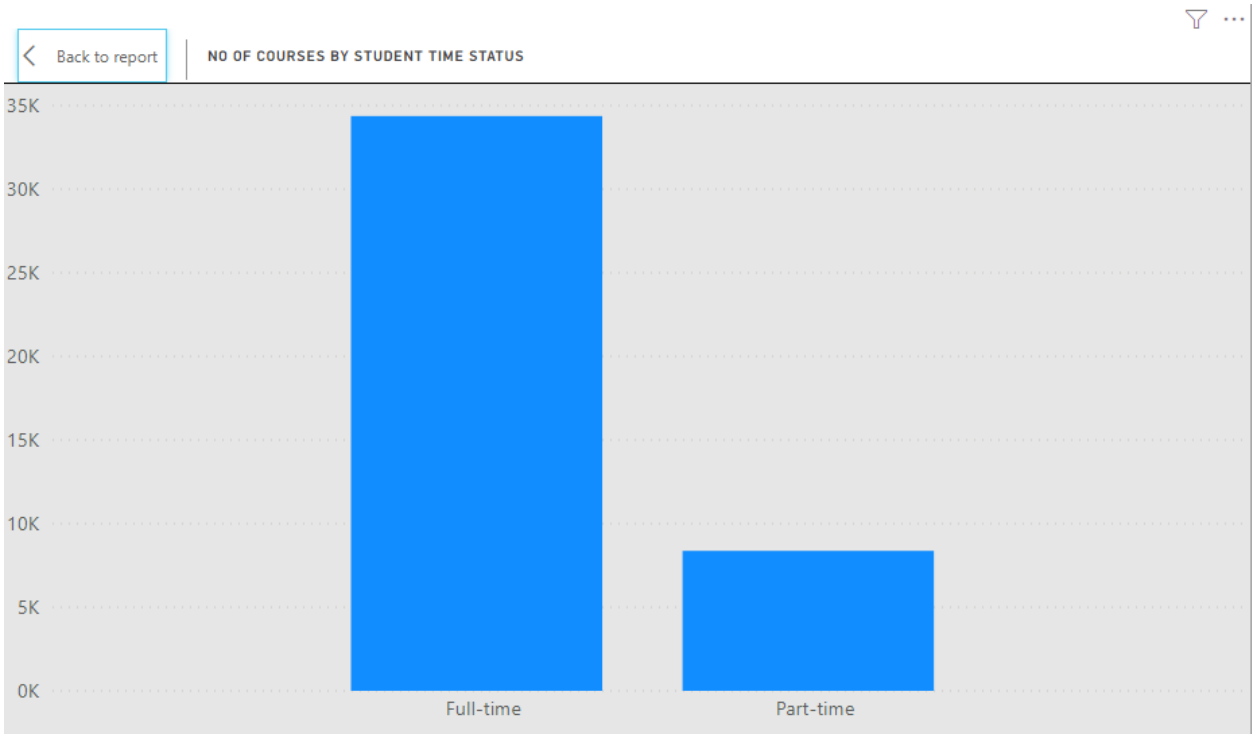
Graph 4: No. of courses by gender

For this graph, I have used a visual ‘Donut chart’ to represent gender diversity for each course of the university.



Graph 6: No of Courses by student time status

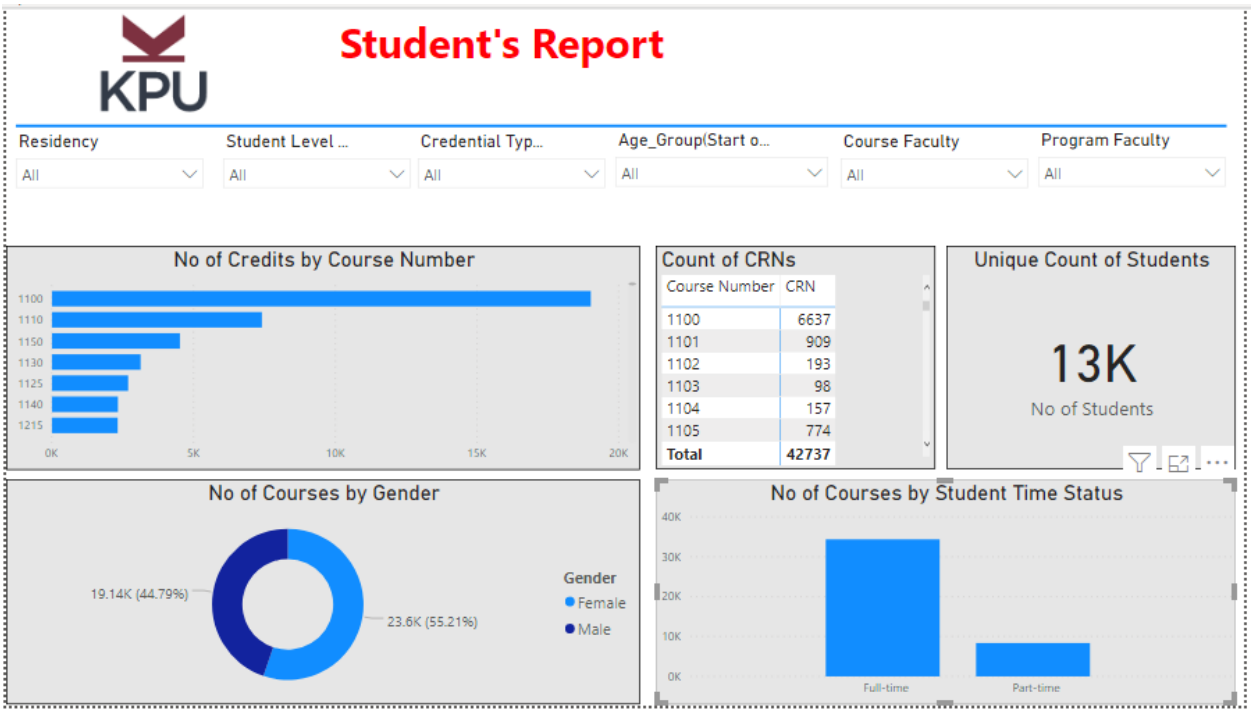
For this graph, I have used a visual called ‘Stacked column chart’ to represent the student time status ratio for the number of courses. i.e. Full-time or Part-time



Step 8: Dashboard Preparation

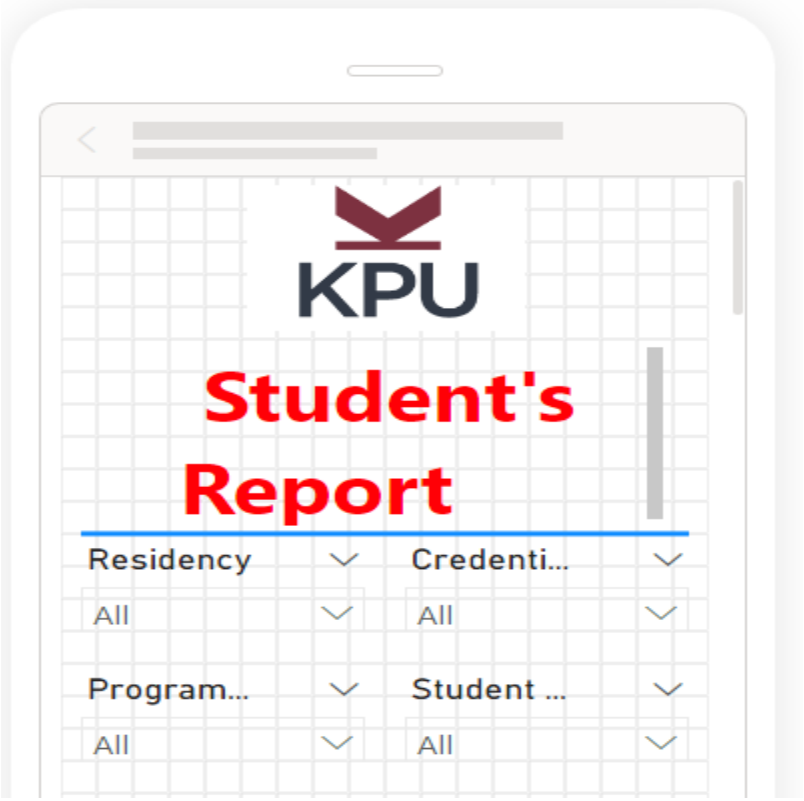
Once all the graphs are ready, we can arrange these visuals on the final dashboard.
So the final dashboard will consist of the Report Name, University logo, all slicers, and graphs.

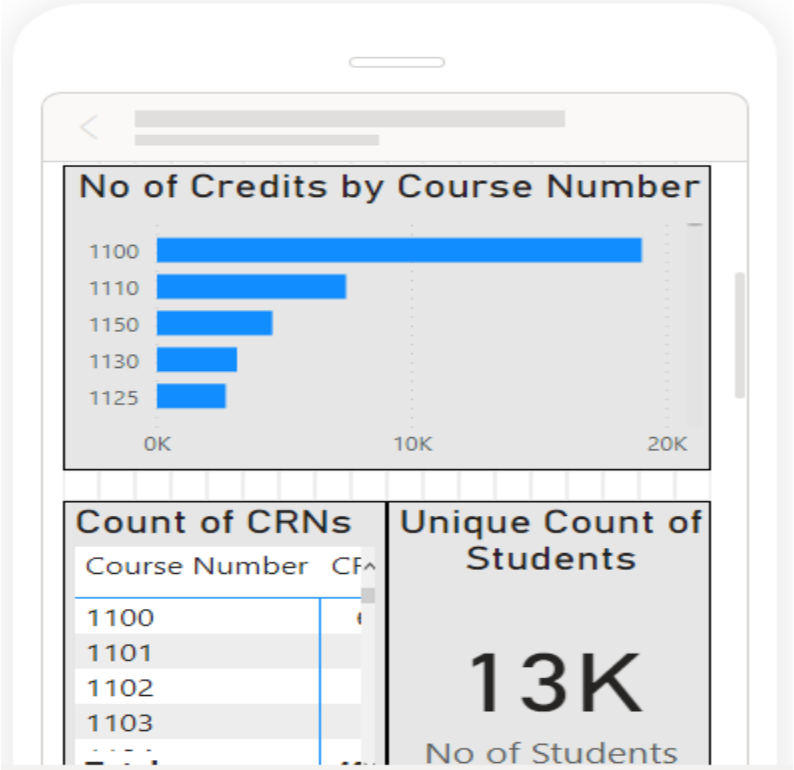
It will be an **interactive dashboard**. A separate report has been attached.

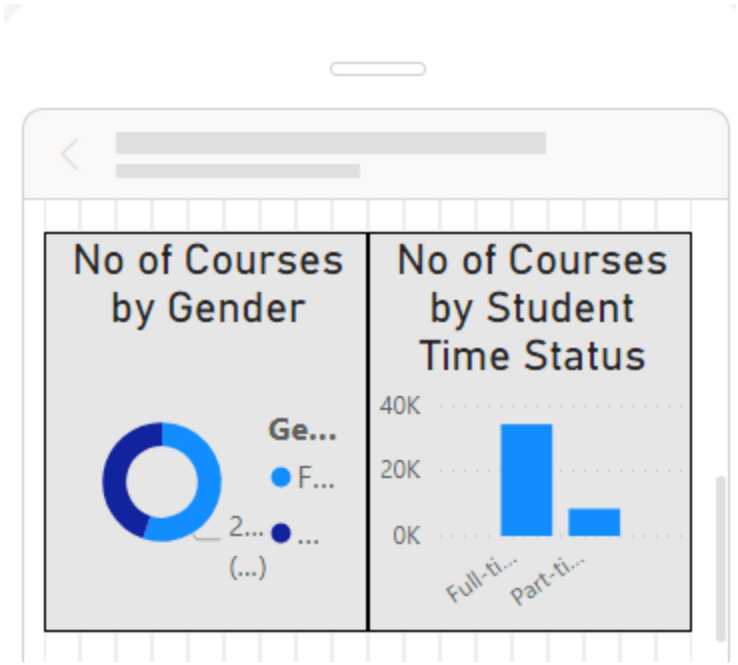


Step 9: Mobile View

We can represent this same report on the mobile view as well.


KPU
Student's Report
Residency
All
Credenti...
All
Program...
All
Student ...
All


No of Credits by Course Number
1100
1110
1150
1130
1125
0K
10K
20K
Count of CRNs
Course Number
1100
1101
1102
1103
Unique Count of Students
13K
No of Students



Conclusion:

In this case study, we have used various visualization effects supported by Power BI. We can publish this report on both desktops as well as mobile layout using the Power BI account.

Thank you!!!