

DATA PROCESSING AND ANALYSIS

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1- Data Processing Steps

- The processing steps were done using Excel and Power Bi.
- The missing values and invalid values for both datasets were replaced by “Not Specified” or “Other” to avoid deleting the entire rows as doing so will change the final analysis and processing results.
- The Zip Code and State columns were excluded as it was decided to only use the City and Country columns for the geographical identifiers during the analysis
- The Date columns were transformed from ‘Date and Time’ data type to ‘Date’ as only the date will be valuable during the analysis
- Further normalization and breakdown were done for the datasets individually include:

USER DATA

- Adding primary key (USER ID) to the user data table to make it easier to navigate to certain rows and will be later used in normalization of Preferred Sponsor Column.

USER ID									
USER ID	PreferredSponsors	Gender	Country	Degree	Sign Up	city	zip	IsFromSocialMedia	
1	["GlobalShala","Grant Thornton China","Saint Louis University","Illinois Institute of Technology","Excelebrate"]	Male	Nigeria	Undergrad	2023-07-2	Owerri	460103	FALSE	
2	["GlobalShala","Grant Thornton China","Saint Louis University","Illinois Institute of Technology","Excelebrate"]	Male	India	Undergrad	2023-04-2	kottayam	686501	FALSE	
3	["GlobalShala","Illinois Institute of Technology","Saint Louis University","Grant Thornton China","Excelebrate"]	null	India	null	2022-10-14T17:13:36	3032		FALSE	
4	["GlobalShala","Grant Thornton China","Saint Louis University","Illinois Institute of Technology","Excelebrate"]		Albania		2023-06-06T12:29:01	7722		TRUE	
5	["GlobalShala","Grant Thornton China","Saint Louis University","Illinois Institute of Technology","Excelebrate"]	Female	Ghana	Not in Edu	2023-06-1	Kumasi	AT-1214-9	FALSE	
6	["GlobalShala","Grant Thornton China","Saint Louis University","Illinois Institute of Technology","Excelebrate"]	Female	India		2023-07-0	Chennai	600033	FALSE	
7	["GlobalShala","Grant Thornton China","Saint Louis University","Illinois Institute of Technology","Excelebrate"]		Nigeria		2023-05-15T21:30:04	3702		TRUE	
8	["GlobalShala","Grant Thornton China","Saint Louis University","Illinois Institute of Technology","Excelebrate"]		United States		2023-07-26T17:01:59	3612		TRUE	
9	["GlobalShala","Grant Thornton China","Saint Louis University","Illinois Institute of Technology","Excelebrate"]	Male	Nigeria	Undergrad	2023-07-2	Lagos	100278	TRUE	
10	["GlobalShala","Grant Thornton China","Saint Louis University","Illinois Institute of Technology","Excelebrate"]	Male	India	High Scho	2023-05-0	RAS	388570	TRUE	
11	["GlobalShala","Grant Thornton China","Saint Louis University","Illinois Institute of Technology","Excelebrate"]		India		2023-05-26T17:05:18	7422		TRUE	
12	["GlobalShala","Grant Thornton China","Saint Louis University","Illinois Institute of Technology","Excelebrate"]		India		2023-05-07T07:06:50	5002		TRUE	
13	["GlobalShala","Grant Thornton China","Saint Louis University","Illinois Institute of Technology","Excelebrate"]	Female	India	Undergrad	2023-06-1	Patiala	147001	TRUE	
14	["GlobalShala","Grant Thornton China","Saint Louis University","Illinois Institute of Technology","Excelebrate"]	Female	United Stat	Graduate f	2023-05-0	SPARROW	21219	TRUE	
15	["GlobalShala","Grant Thornton China","Saint Louis University","Illinois Institute of Technology","Excelebrate"]	Female	United Stat	Graduate f	2023-10-1	Saint louis	63043	TRUE	
16	["Saint Louis University"]	Male	Ghana	Graduate f	2023-06-1	Accra	233	FALSE	
17	["GlobalShala","Grant Thornton China","Saint Louis University","Illinois Institute of Technology","Excelebrate"]		India		2023-04-05T12:37:13	6522		TRUE	
18	["GlobalShala","Grant Thornton China","Saint Louis University","Illinois Institute of Technology","Excelebrate"]		Pakistan		2023-06-15T18:53:01	5682		TRUE	
19	["GlobalShala","Grant Thornton China","Saint Louis University","Illinois Institute of Technology","Excelebrate"]	Female	Nigeria	Not in Edu	2023-03-0	Abuja	234	FALSE	
20	["GlobalShala","Grant Thornton China","Saint Louis University","Illinois Institute of Technology","Excelebrate"]		India		2023-07-19T18:44:25	5512		TRUE	
21	["Saint Louis University"]	Male	India	Graduate f	2023-08-2	Saint Louis	63108	FALSE	
22	["GlobalShala","Grant Thornton China","Saint Louis University","Illinois Institute of Technology","Excelebrate"]	Female	Pakistan	Undergrad	2023-06-1	Peshawar	923	TRUE	
23	["GlobalShala","Grant Thornton China","Saint Louis University","Illinois Institute of Technology","Excelebrate"]		India		2023-06-19T10:33:19	7512		FALSE	
24	["Saint Louis University"]	Female	India	Graduate f	2023-05-0	vikarabad	501106	FALSE	
25	["GlobalShala","Grant Thornton China","Saint Louis University","Illinois Institute of Technology","Excelebrate"]		India		2023-03-13T02:03:26	6492		TRUE	
26	["GlobalShala","Grant Thornton China","Saint Louis University","Illinois Institute of Technology","Excelebrate"]	Female	Kenya	Undergrad	2023-03-2	Busia	50400	TRUE	
27	["GlobalShala","Grant Thornton China","Saint Louis University","Illinois Institute of Technology","Excelebrate"]								

- Normalization of Preferred Sponsor Column into a new table for easier analysis and visualization. (This step was done using unpivot columns by power query and re-uploaded into excel)

USER ID	Preferred Sponsors
1	Excelerate
2	Excelerate
3	Excelerate
4	Excelerate
5	Excelerate
6	Excelerate
7	Excelerate
8	Excelerate
9	Excelerate
10	Excelerate
11	Excelerate
12	Excelerate
13	Excelerate
14	Excelerate
15	Excelerate
16	Excelerate
17	Excelerate
18	Excelerate
19	Excelerate
20	Excelerate
21	Excelerate
22	Excelerate
23	Excelerate
24	Excelerate
25	Excelerate
26	Excelerate
27	Excelerate
28	Excelerate
29	Excelerate

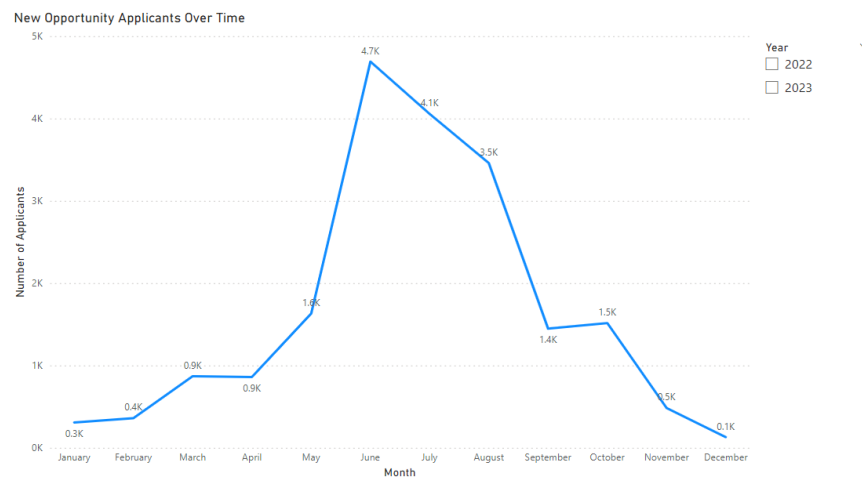
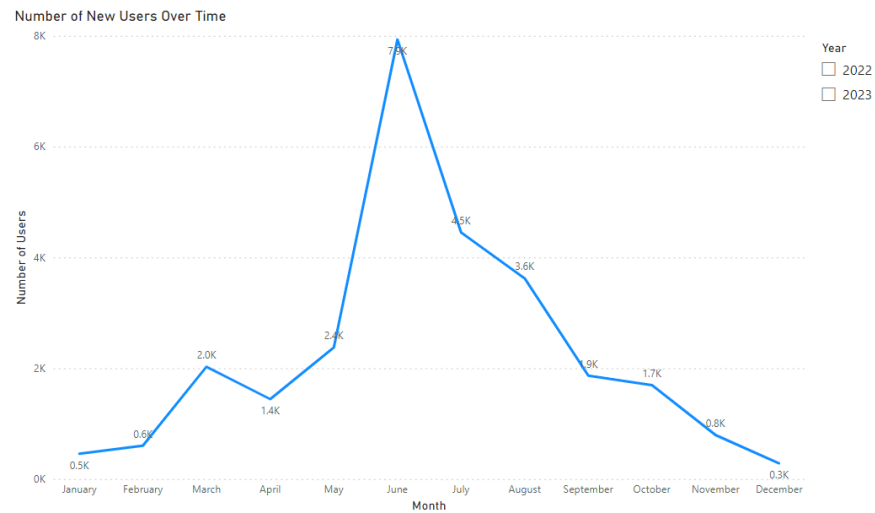
Opportunity Sign Up and Completion Data

- Normalization of Preferred Skills Earned into a new table using both Profile ID and Opportunity ID as a composite foreign key for easier analysis and visualization. (This step was done using unpivot columns by power query and re-uploaded into excel)

Profile Id	Opportunity Id	Skills Earned
00d39ce2-00da-4d74-8b1f-69b565335350	00000000-0GW	
01593fbd-baa7-4dee-8fd2-92c2c8268d67	00000000-0GW	
01724978-3678-4ac7-8e9e-b2171cfda107	00000000-0GW	
01bbefee-380c-4f6b-95f3-bfc22ecfad0a	00000000-0GW	
01d62b29-a150-485b-8c1e-d6778a1de716	00000000-0GW	
028de2bb-4e01-48c6-81c6-95a3c835cb94	00000000-0GW	
03e81a4a-afdd-4eb0-a0f3-ebb758204cb5	00000000-0GW	
040bf44c-3936-4f00-8fcf-d57a63470042	00000000-0GW	
04346ea5-1e5c-4285-8fcf-86e49074ea04	00000000-0GW	
043d5fcb-5f75-42b8-936e-3b48a3456855	00000000-0GW	
04e16152-1c92-46e8-93f7-d1481d42d653	00000000-0GW	
05260d76-1fe1-434f-ba51-21551aef206f	00000000-0GW	
05663552-ca02-4482-a1d9-685921646b21	00000000-0GW	
05ae029a-1b21-49b8-863b-a2f498ba8d7d	00000000-0GW	
05c8992c-9ff0-478b-b36e-b2a8630734f9	00000000-0GW	
05e834c7-9791-48c2-b0ec-ba13e5a9cc61	00000000-0GW	
061e2800-1755-44d6-9db8-014b03dc8f02	00000000-0GW	
06636484-bf2b-4b29-a619-49875726b89b	00000000-0GW	
06f099fb-d607-4724-b0e7-e448a4970749	00000000-0GW	
071a771f-06c6-46e2-a8d3-f02862f59b71	00000000-0GW	
07b572de-56a1-4218-88aa-0f3e3bb211b3	00000000-0GW	
084813a1-b6a3-456a-9df8-1ec1d836fa72	00000000-0GW	
085f50a4-0386-4fac-86af-d7e76502d009	00000000-0GW	
086048f1-59ae-44a7-96e5-c36042994b7d	00000000-0GW	
0877e99a-5231-4c9a-80dc-6a6037de7179	00000000-0GWQ-AXC5-X45C-2MHJ28	Creative Thinking
08821e8f-4778-4863-ac47-d263e9e49b42	00000000-0GWQ-AXC5-X45C-2MHJ28	Creative Thinking

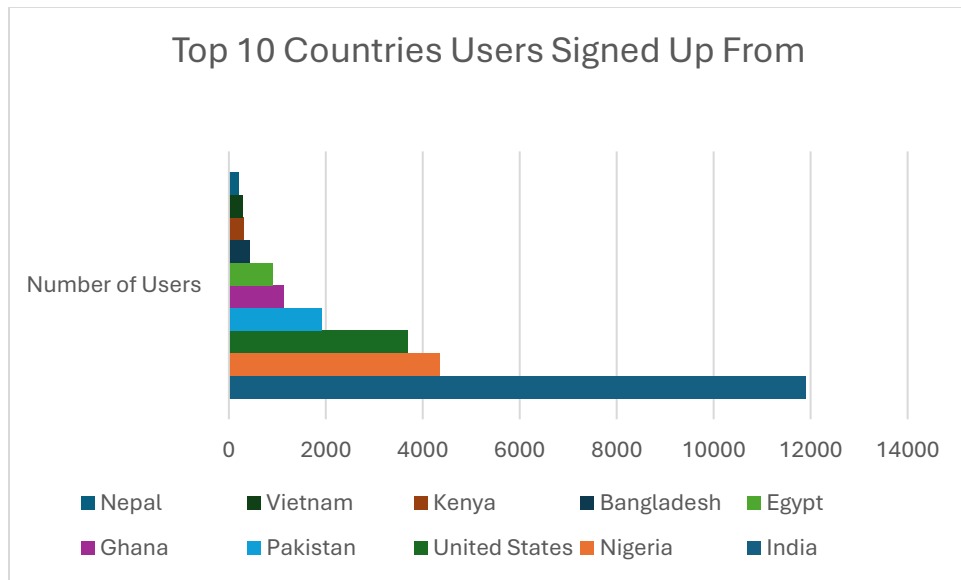
2- Trend Analysis

New Sign Ups and Opportunity Applications Over Time



Both line graphs show sign up activity and new opportunity applications over time broken down by month and year.

Global Reach



This visualization shows the top 10 countries users have signed up from.

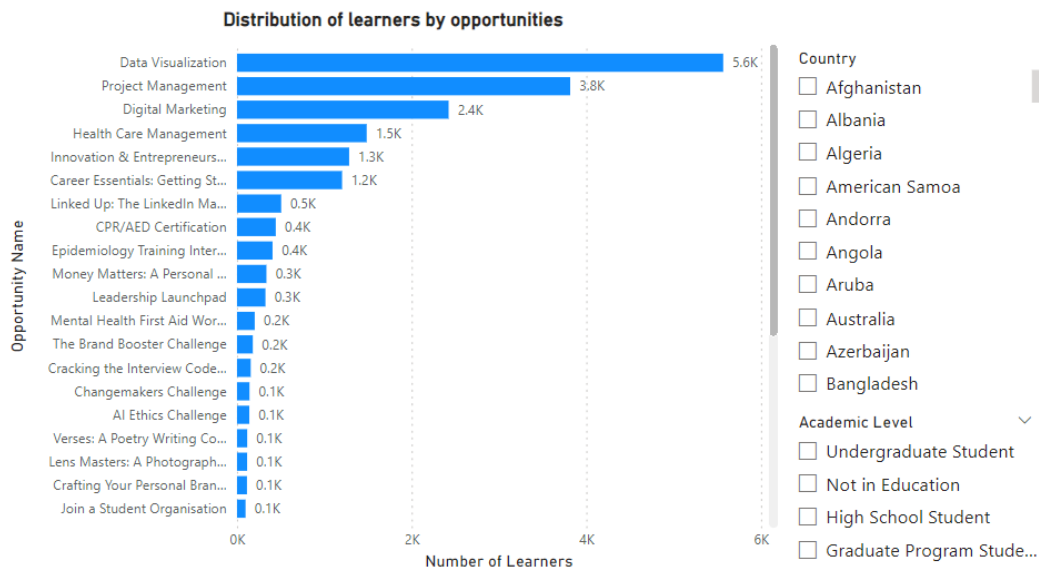
US Cities Insights

Sign-Up for Cities in the US.

Country	City	Number of Users
United States	Saint Louis	2066
United States	St louis	422
United States	Chicago	186
United States	SaintLouis	68
United States	StLouis	41
United States	Maryland Heights	35
United States	Saint Louis city	34
United States	Naperville	28
United States	Chesterfield	26
United States	Saint Charles	24
United States	Schaumburg	19
United States	Ballwin	17
United States	Florissant	17
United States	Brooklyn	15
United States	San Jose	14
United States	springfield	14
United States	Aurora	13
United States	Skokie	13
United States	Valley Park	12
United States	Kansas City	11
United States	New Lenox	11
United States	STL	11
United States	Edwardsville	10
United States	Overland Park	10
United States	Scottsdale	10
United States	Frisco	9

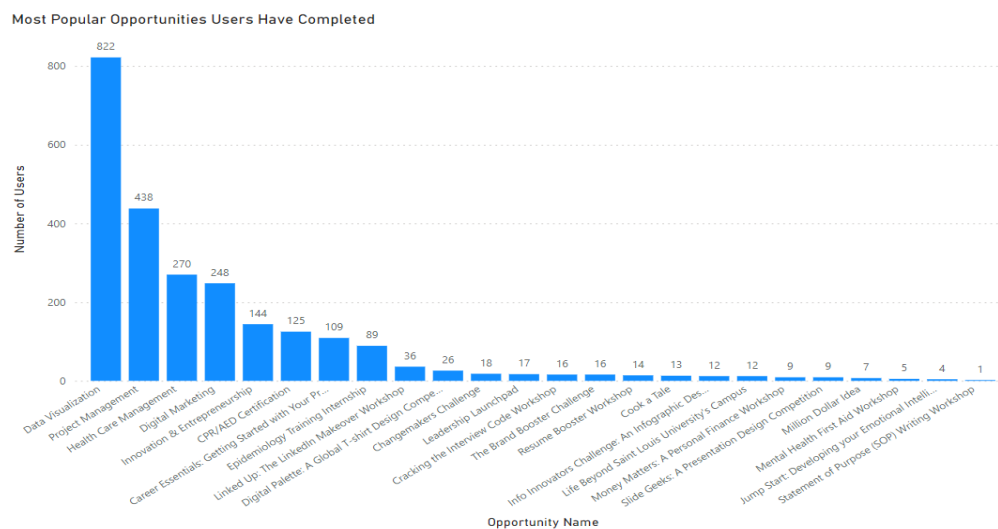
This table visualization shows the US cities users have signed up for opportunities form and the total number of applicants for each city.

Opportunity Popularity



This visualization shows the most popular opportunities the users have signed up for. The slicers on the right can be used to filter out the most popular opportunities in each country or by the learners' academic levels.

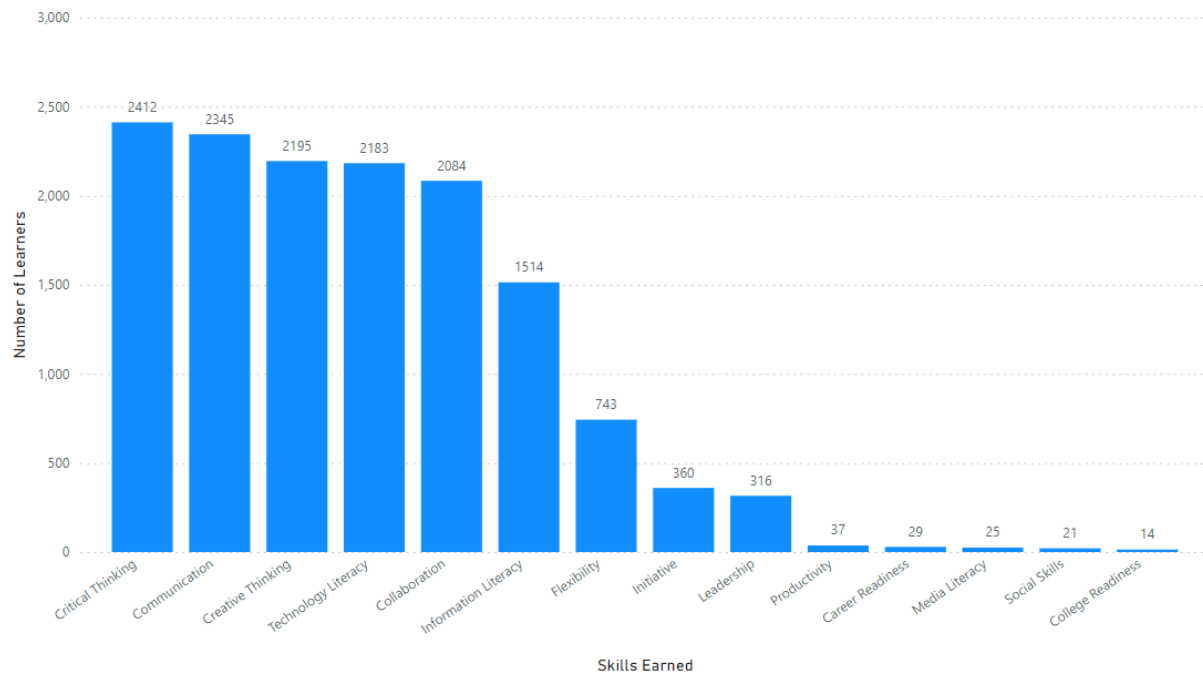
Completion Trends



This graph shows the from the most to the least popular opportunities users have completed.

Skill Development Trends:

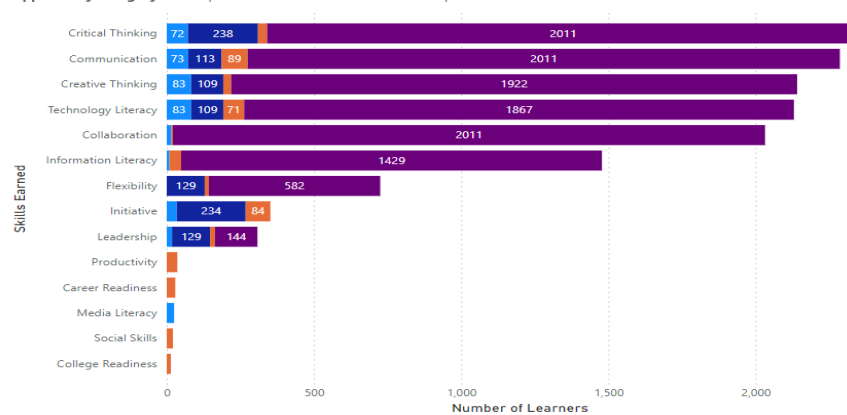
Most Gained Skills



This graph shows the most gained skills on Excelerate which are “Critical Thinking” followed by “Communication”.

Distribution of Skills Gained by Opportunity Category

Opportunity Category: Competition (Blue), Course (Dark Blue), Event (Orange), Internship (Purple)



This graph shows the distribution of skills gained on Excelerate by opportunity category. It shows that most skills are gained through Internship opportunities and the least through Event opportunities.

Breakdown of Skills Earned by Opportunity Name

Opportunity Name	Skills Earned	Number of Learners
Data Visualization	Collaboration	822
Data Visualization	Communication	822
Data Visualization	Creative Thinking	822
Data Visualization	Critical Thinking	822
Data Visualization	Information Literacy	822
Data Visualization	Technology Literacy	822
Project Management	Collaboration	438
Project Management	Communication	438
Project Management	Creative Thinking	438
Project Management	Critical Thinking	438
Project Management	Flexibility	438
Project Management	Technology Literacy	438
Health Care Management	Collaboration	270
Health Care Management	Communication	270
Health Care Management	Creative Thinking	270
Health Care Management	Critical Thinking	270
Health Care Management	Information Literacy	270
Health Care Management	Technology Literacy	270
Digital Marketing	Collaboration	248
Digital Marketing	Communication	248
Digital Marketing	Creative Thinking	248
Digital Marketing	Critical Thinking	248
Digital Marketing	Information Literacy	248
Digital Marketing	Technology Literacy	248
Innovation & Entrepreneurship	Collaboration	144
Innovation & Entrepreneurship	Communication	144
Innovation & Entrepreneurship	Creative Thinking	144
Innovation & Entrepreneurship	Critical Thinking	144
Innovation & Entrepreneurship	Flexibility	144
Innovation & Entrepreneurship	Leadership	144

Breakdown of Skills Earned by Opportunity Name

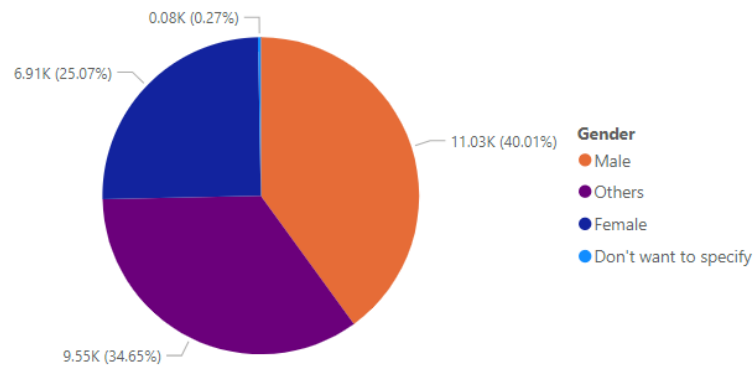
Opportunity Name	Opportunity Category	Skills Earned	Number of Learners
Data Visualization	Internship	Collaboration	822
Data Visualization	Internship	Communication	822
Data Visualization	Internship	Creative Thinking	822
Data Visualization	Internship	Critical Thinking	822
Data Visualization	Internship	Information Literacy	822
Data Visualization	Internship	Technology Literacy	822
Project Management	Internship	Collaboration	438
Project Management	Internship	Communication	438
Project Management	Internship	Creative Thinking	438
Project Management	Internship	Critical Thinking	438
Project Management	Internship	Flexibility	438
Project Management	Internship	Technology Literacy	438
Health Care Management	Internship	Collaboration	270
Health Care Management	Internship	Communication	270
Health Care Management	Internship	Creative Thinking	270
Health Care Management	Internship	Critical Thinking	270
Health Care Management	Internship	Information Literacy	270
Health Care Management	Internship	Technology Literacy	270
Digital Marketing	Internship	Collaboration	248
Digital Marketing	Internship	Communication	248
Digital Marketing	Internship	Creative Thinking	248
Digital Marketing	Internship	Critical Thinking	248
Digital Marketing	Internship	Information Literacy	248
Digital Marketing	Internship	Technology Literacy	248
Innovation & Entrepreneurship	Internship	Collaboration	144
Innovation & Entrepreneurship	Internship	Communication	144
Innovation & Entrepreneurship	Internship	Creative Thinking	144
Innovation & Entrepreneurship	Internship	Critical Thinking	144
Innovation & Entrepreneurship	Internship	Flexibility	144
Innovation & Entrepreneurship	Internship	Leadership	144

This table visualizations shows the breakdown of skills earned by both opportunity name and opportunity category. It shows that the most popular skills: “Critical Thinking”, “Communication” and “Creative thinking” are mostly gained through Data Visualization followed by Project Management. Both opportunities are of the Internship category.

3- Comparative Analysis

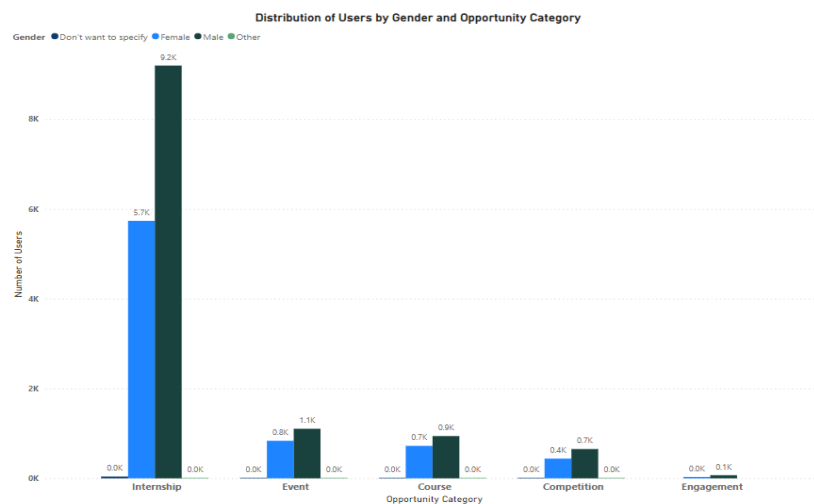
Comparing Gender Groups

Breakdown of Total Users By Gender



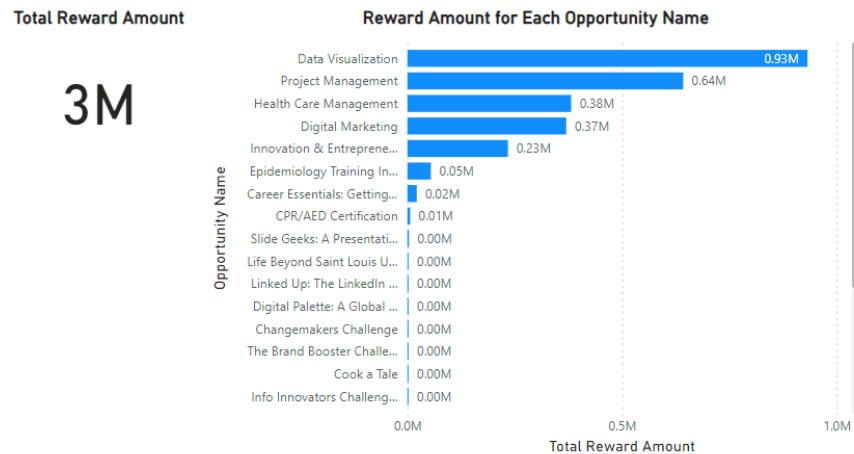
This graph compares the new user distribution across different gender groups.

Opportunity Category



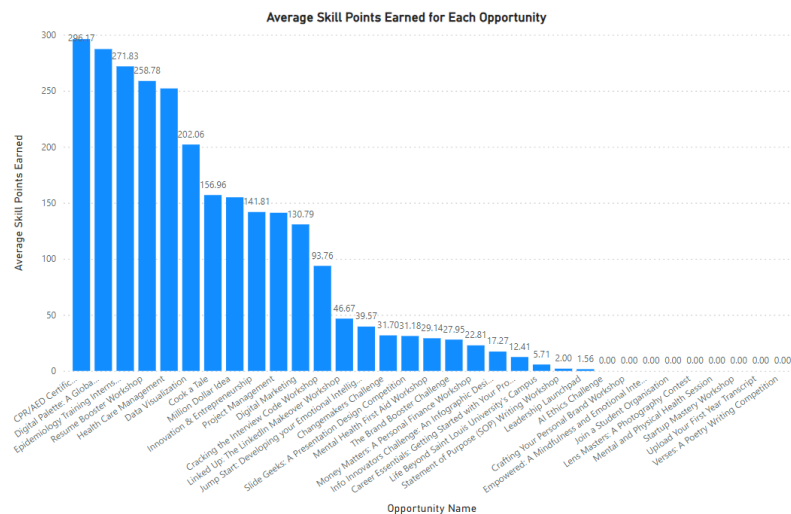
This chart compares the number of opportunity applicants for each gender group and opportunity category.

Reward Amount



This shows the total reward amount and compares its distribution throughout the available opportunities it shows that the most amount was awarded through Data Visualization and Project Management while the least through Statement of Purpose (SOP) Writing Workshop with the amount of only 200.

Skill Points



This graph compares the average skill points earned through the opportunities the learners have signed up for on Excelerate.

4- Cross-Dataset Analysis

Platform Activity

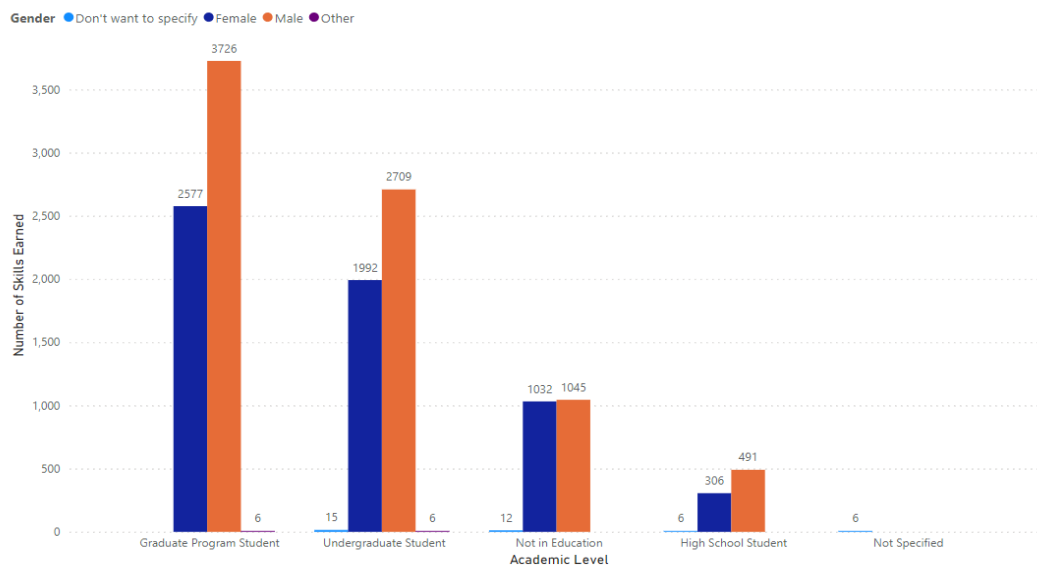
Number of people that signed up on the platform

27561

Number of people that signed up for opportunities

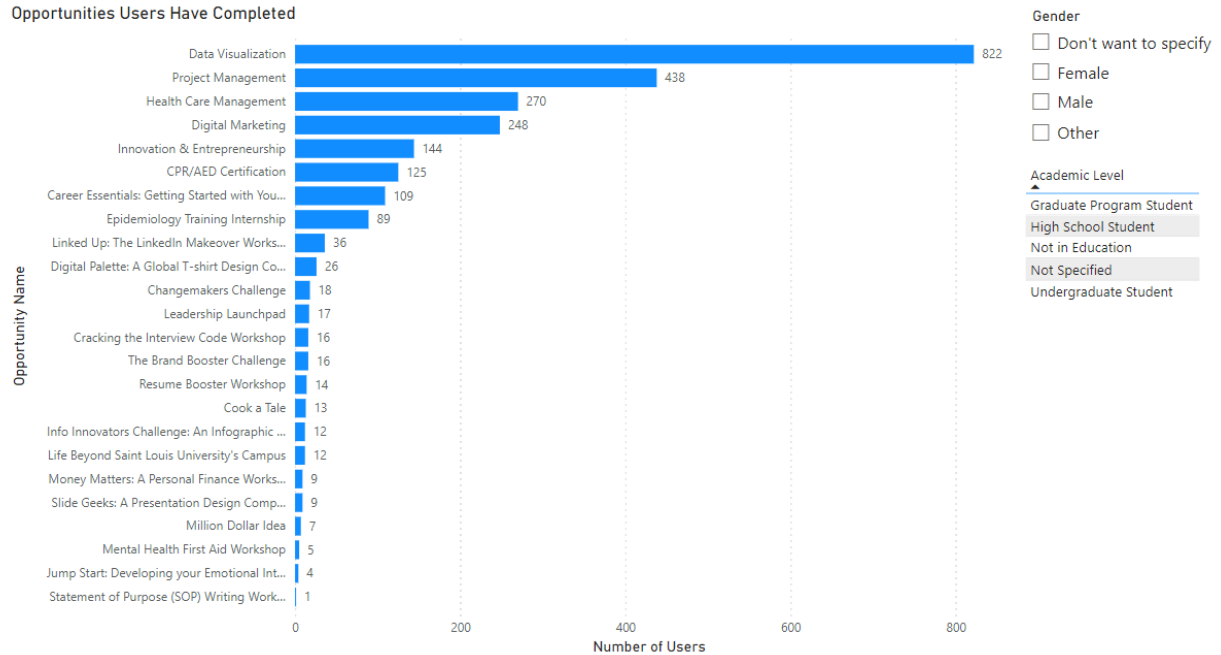
11481

Those card visualizations show the total number of Excelerate users and the total number of which who have applied for opportunities. 11,481 users signed up for 20,322 opportunities as one user can sign up for more than one opportunity.



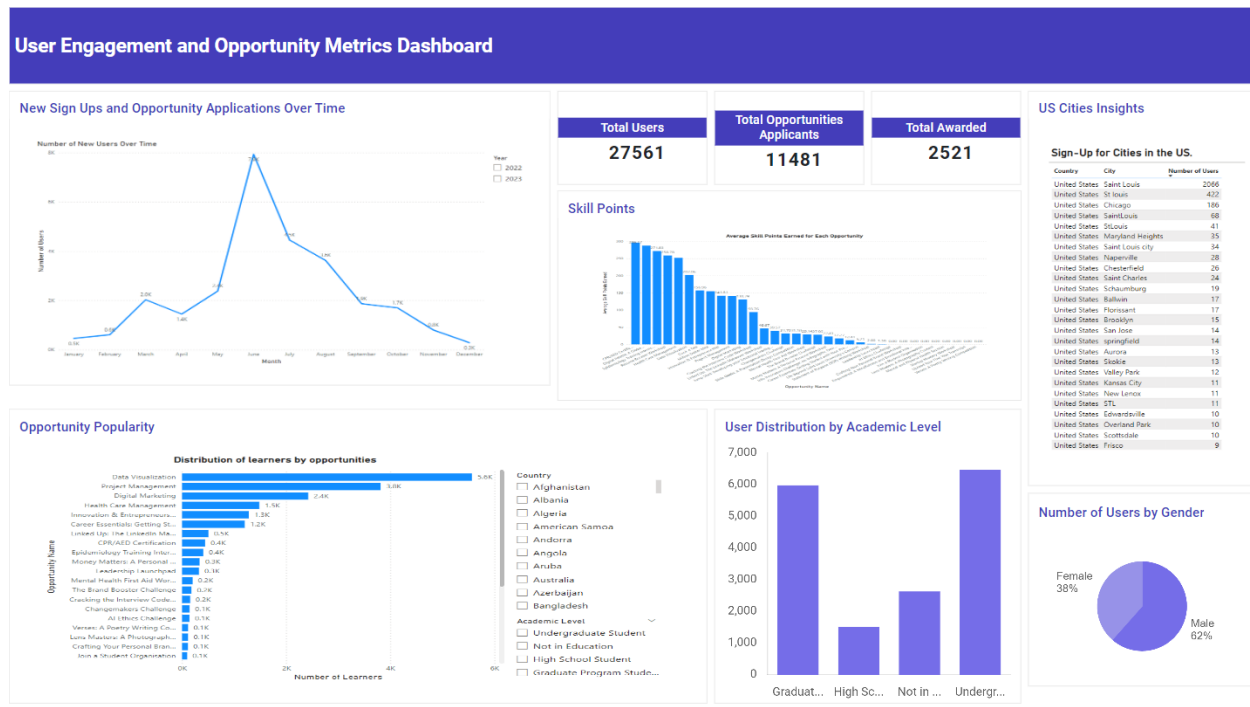
This graph shows the correlation between user demographics (Gender and Academic Level) and the skills learners earned during their participation in Excelerate opportunities. It shows that graduates have gained the most skill. As for the gender disruption, it remains inconclusive as previous graphs showed that there were about twice more male users than females on the platform.

Opportunities Users Have Completed



This visualization shows the demographic breakdown of users who signed up and completed their opportunities using gender and academic level filters to show the number of users for each.

5- Dashboard Wireframe



The **User Engagement and Opportunity Metrics Dashboard** features several key sections: a line chart showing new sign-ups and opportunity applications over time with year filter options; total counts for users, opportunity applicants, and awards; a bar chart of average skill points earned per opportunity; a table listing US cities with user sign-ups; a bar chart of opportunity popularity with filters for country and academic level; a bar chart of user distribution by academic level; and a pie chart displaying gender distribution of users.