

Text Mining – Coop Data Analysis

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Group Number:15

Group Members :

Islamova Vusala,
Mambilavil Swati,

Rege Yamini,
Wang Ruifeng



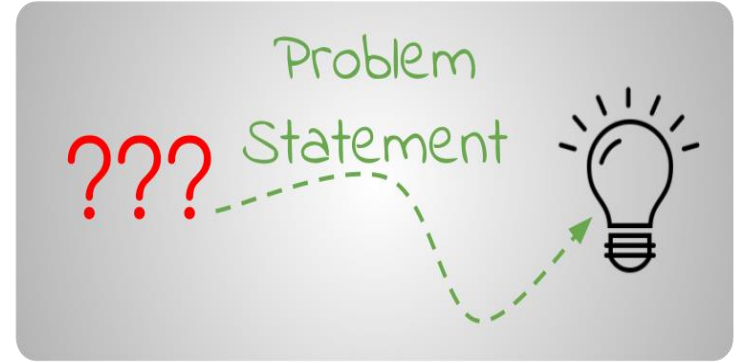
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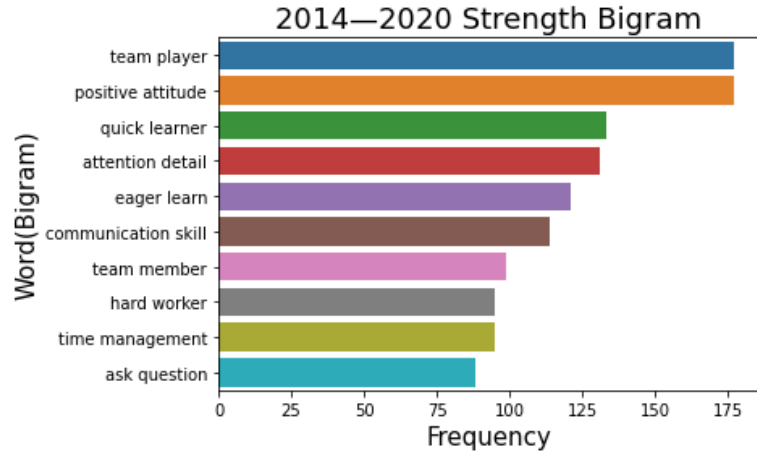
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Problem Statement :

- What are the strengths mentioned: personality characteristics, skills, or academic knowledge ?
- What are the Skills gaps for students?
- Does co-op lead to a change in goals?
- How did Employers expectations change over the years?

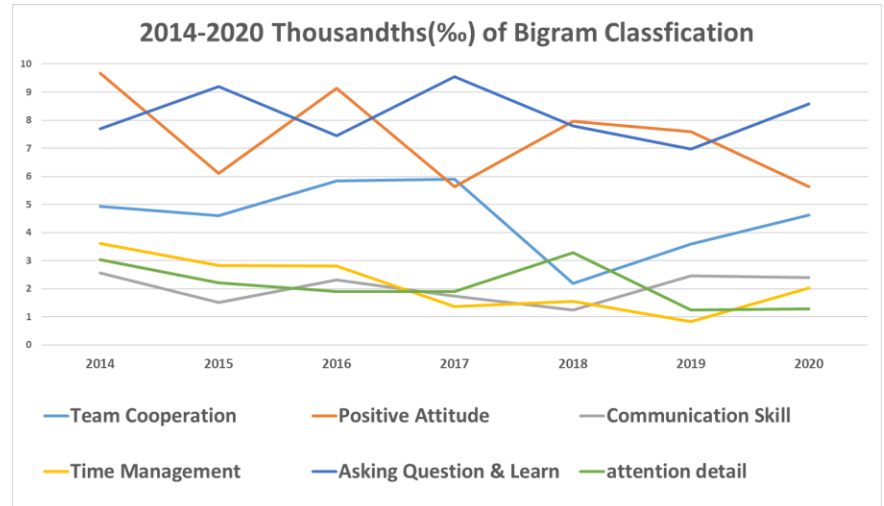


Problem 1: Strength mentioned: personality characteristics, skills, or academic knowledge ?

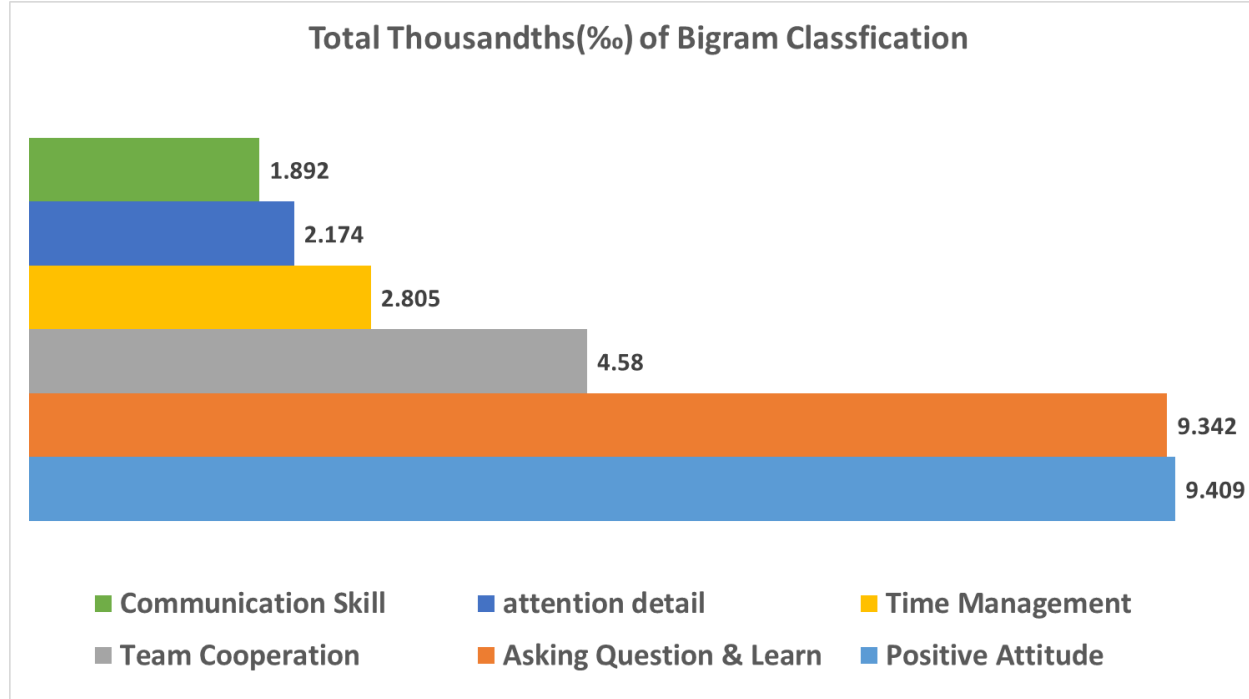


- Divide all frequent bigrams into six categories
- Count the proportion of each category by different year
- Compare the proportion, analyze the trend of each category

- Text analytics on strength column by each year
- Merge dataset from each year and count bigram
- Team player and Positive attitude are mentioned most



Problem 1: Strength mentioned: personality characteristics, skills, or academic knowledge?



- Compare the proportion of each category in total
- Positive attitude and Asking question & learn had the highest thousandths

Strength mentioned: **Personal characteristics > Skills > Academic knowledge**

Problem 2: What is the main Skill Gap of Students?

	<u>2014-2015</u>	<u>2016-2017</u>	<u>2018-2019</u>	<u>2020</u>
Result	<div><div>36%</div></div>	<div><div>48%</div></div>	<div><div>50%</div></div>	<div><div>65%</div></div>
Bigram	Attention to details	Asking questions	Attention to details	Communication
Trigram	Consistent Contribution	Open to Challenge	Verbal/Written Communication	Cross-checking Mistakes
Specific	Task Completion	Time Management	Leadership/Public Speaking	Outside Box Thinking

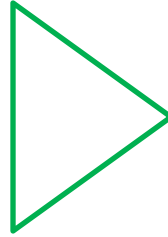
Problem 2: What is the main Skill Gap of Students?

1

Students think the need to improve communication and management skills

2

Employers think students need to be more attentive and Outside box thinker



1

Time Management

2

Communication

3

Team Management

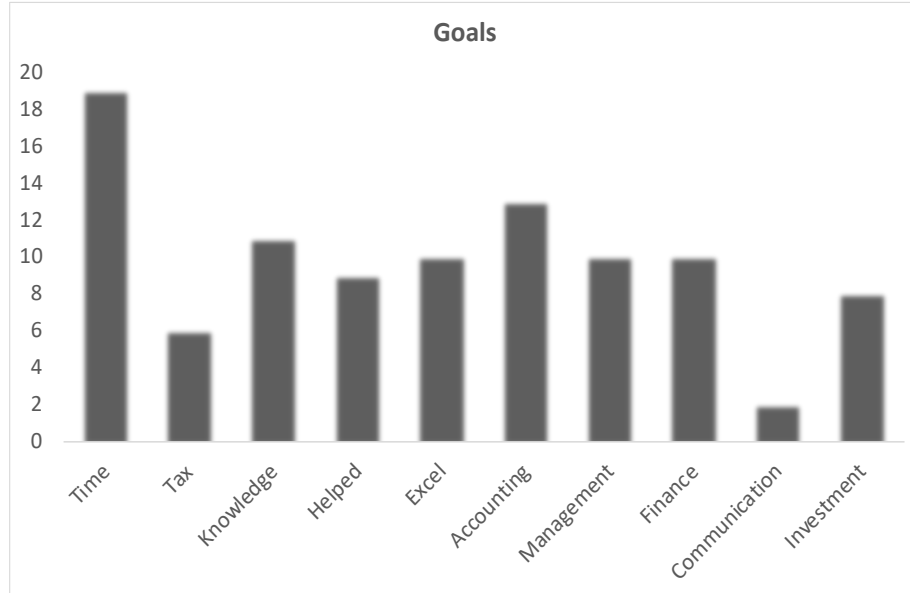
Problem 3: Does co-op lead to change in goals?

- Worked on the “goals” sheet in Students data
- For all the years in which goals data was collected
- Understand if student goals are aligned to major which they have taken or not
- Parameters for analysis: Major vs student comments
- Tools used : Python / MS- Excel



Problem 3: Does co-op lead to change in goals?

- ❖ Common points between students of ACCT, FIN and ECON majors



- ❖ Some interests which students identified which were in line with their majors.

ACCT – CPA exam

FIN – Tax accounting jobs

ECON- Business Analytics

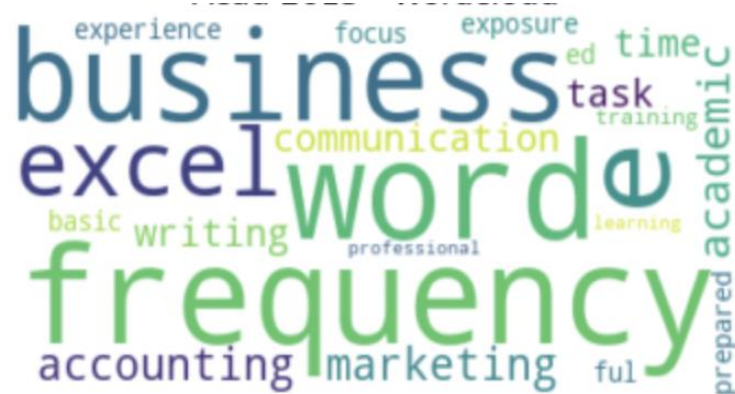
Problem 3: Does co-op lead to change in goals?

- Student goals aligned to their co-ops
- Is this the right path for me?
- Co-ops is one of the reasons for choosing Drexel.
- Some areas students require training for:
 - ☐ Communication skills
 - ☐ Excel skills
 - ☐ Computer skills
- Some points that students are thankful for:
 - ☐ Getting networking opportunities with clients
 - ☐ Co-op helping them get into their dream jobs



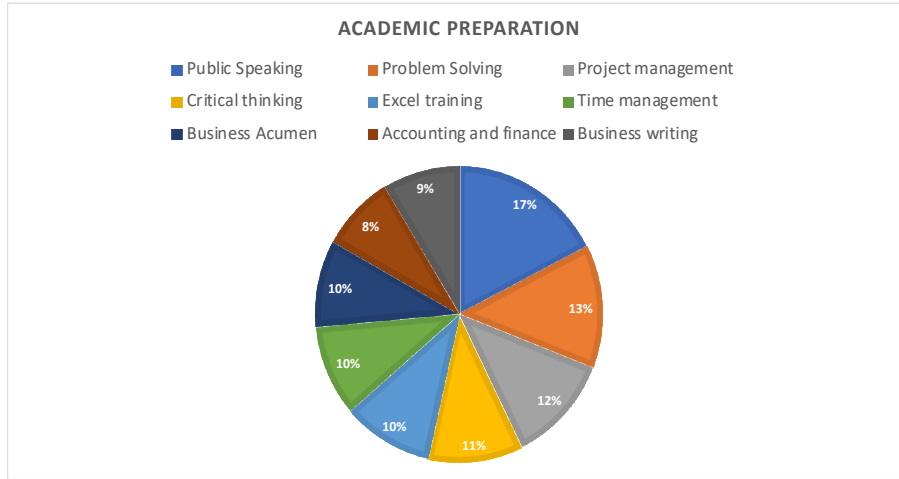
Problem 4: How did Employers expectations change over the years?

- Worked on “Academic preparation” and “Weakness” sheets of the Employer data set.
- Analyzed the data y-o-y separately.
- Performed bi-grams/tri-grams and word cloud to understand the y-o-y changes in expectations from the employers.
- Used "Vader" for sentiment analysis to the Employer data and correlated the same with No of Co-op, Citizenship and Class.
- Tools used : Python / MS- Excel



Problem 4: How did Employers expectations change over the years?

- ❖ Common skills which are expected from students y-o-y which also correlated with "Weakness"

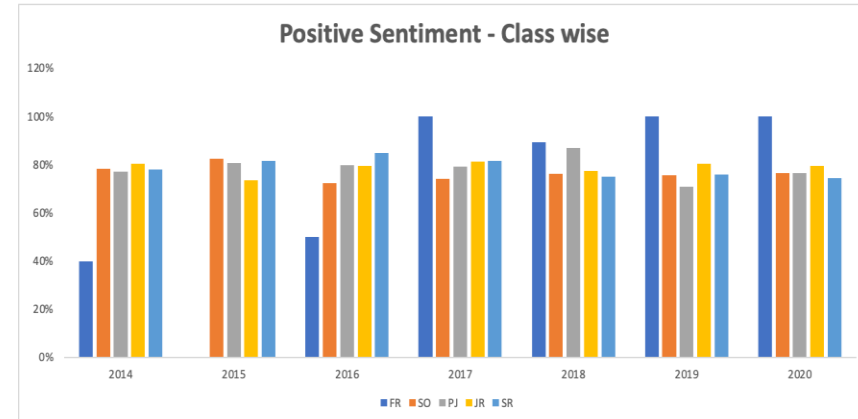
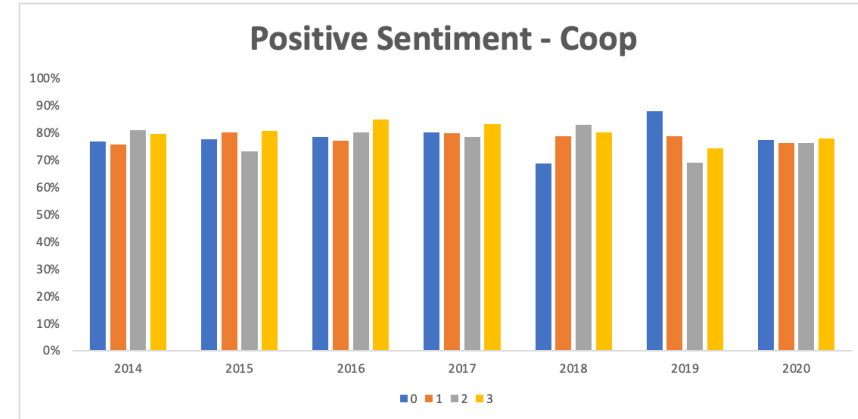


- ❖ New skills which are expected and should be incorporated as part of Academics



Problem 4: Sentiment Analysis on Employer Data set

- Students in **third** co-op have most **positive sentiments** followed by **second** co-op (4 out of 7 times)
- Students in **first** co-op have maximum **negative sentiments** from the employers.
- % of **Positive sentiment** showed **declining trend** in recent years. I.e dipped from average of 80% from 2014-18 to 76% in 2019-20
- Positive sentiments are higher for students who are **US-Citizens** as compared to International students.
- Freshman student's **positive sentiments** increased substantially from 2017 to 2020



Conclusion:



- Personality Characteristics > Academic knowledge.
- The main strength: Positive attitude
- Important skills: Public speaking, communication skills and Time management
- Goals are aligned with the major they have undertaken.
- Business Analytics, Data Management, Acumen for solving real world problems are new skills sets which are expected to be part of curriculum.



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Thank You

