

CPS Projects-Group 12

Project Introduction

Description

The CPS Project Deliverables

Group Numbers _12

Group Numbers

Themes of entire dataset of course descriptions

The most Frequent Words Pattern for each Course

Characterize and elaborate upon each 15 Topics

Wordscloud

Topics Explanation

Identify groups or clusters of courses(Classification System)

Unsupervised Machine Learning Model for Clustering

Topic in each Clusters

Clusters explanation

The Project Summary

Summary

Project Description

The College of Professional Studies needs to analyze our curriculum to support the efforts of the college and better understand the nuances of our courses and programs. There is a need to identify key words and phrases within course descriptions, course outcomes, course skills, and create links between them based on similar language. Specifically, examining themes related to learning domains at the college, professional outcomes, hard and soft (e.g. power) skills, technology, innovation, and social justice and equity work. The project will deliver analysis of professional skills (e.g., competencies) identified as essential for graduates of our programs and non-credit offerings in order to identify areas of overlap, as well as potential gaps. This will help the college prioritize crucial skills that learners need to obtain and will help us seek out where we should adjust the curriculum and future academic program offerings.

Phase 1 Tasks for Spring 2022 Semester (This will be completed by our Group 12)

1. Create a dashboard that can display different aspects of the language that is used in the course descriptions.
2. Find themes/clusters/topics by domain using the resulting dashboard

Select theme:

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Natural language processing will be used along with and data visualization techniques to explore and understand the current curriculum. The significant visualization will include the Bar chart of the words with top frequency to each course, word cloud for each Topics, the bar chart for showing the topics included in each cluster which are clustered by K-Mean method, and the relevant graphs such as box plot to reflect sentiment of each cluster.

In addition, the following questions will be addressed by the dashboard to support the college:

- 1.What are some themes or clusters within the course description, course outcomes, and skills?
- 2.What programs and courses address:
 - a. Professional skills (potentially listed in professional jobsites);
 - b. Hard and soft (e.g. power) skills;
 - c. Technology and innovation;
 - d. Social justice?
 - e. Diversity, equity, and inclusion?

Select theme:

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Select theme:

default

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Select theme:

Course Code: ACC

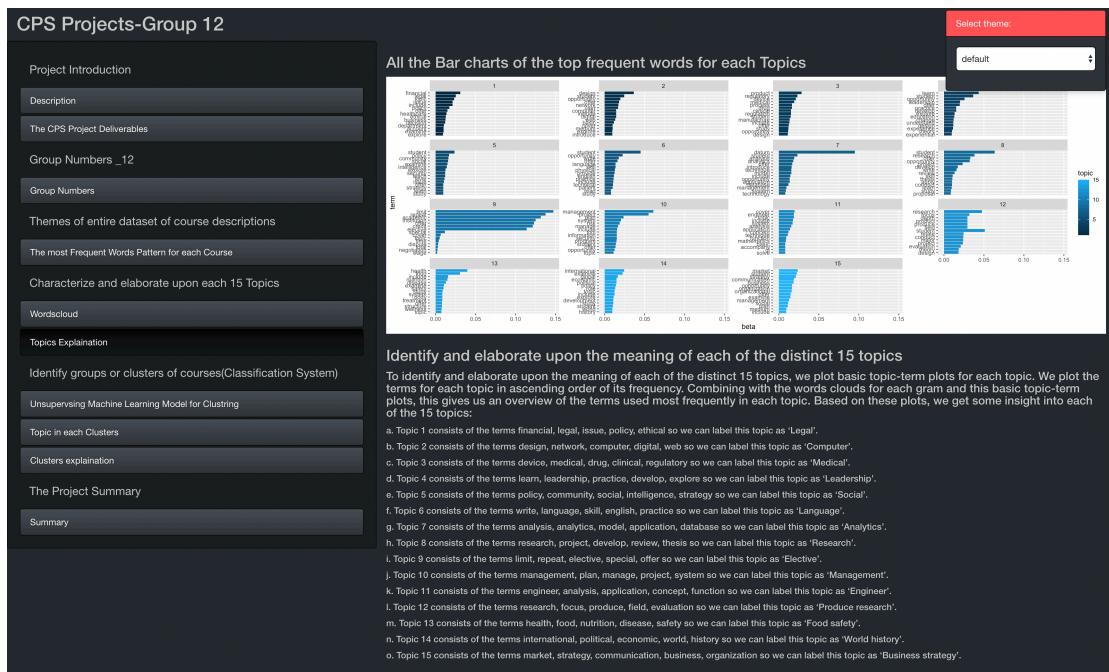
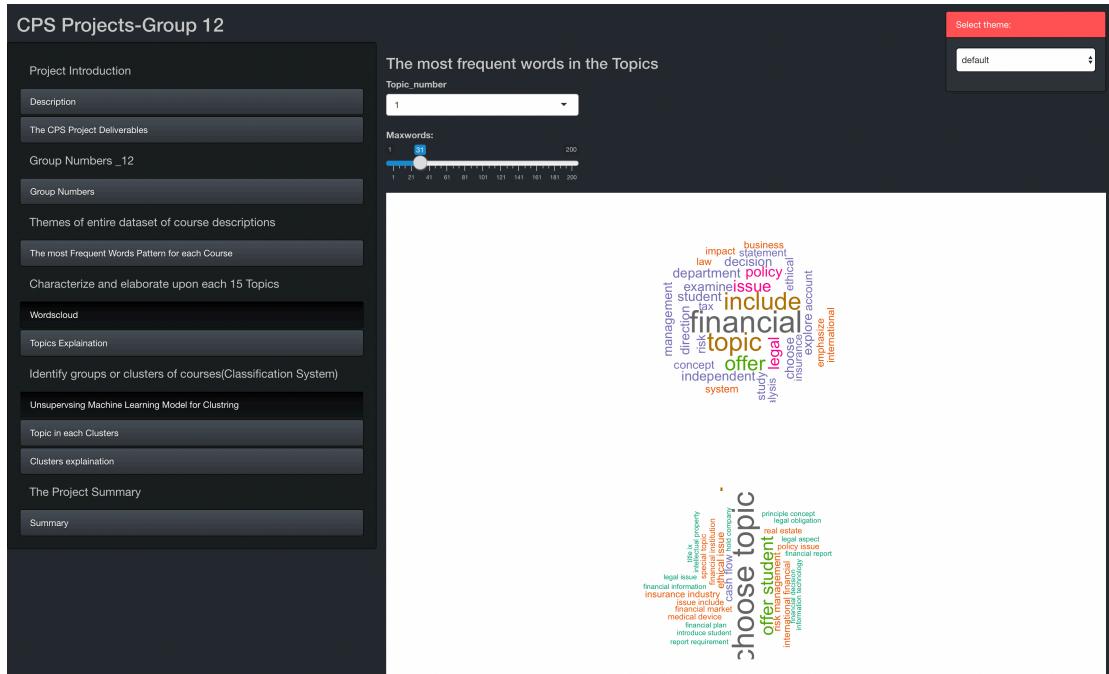
Top Number of Words: 5

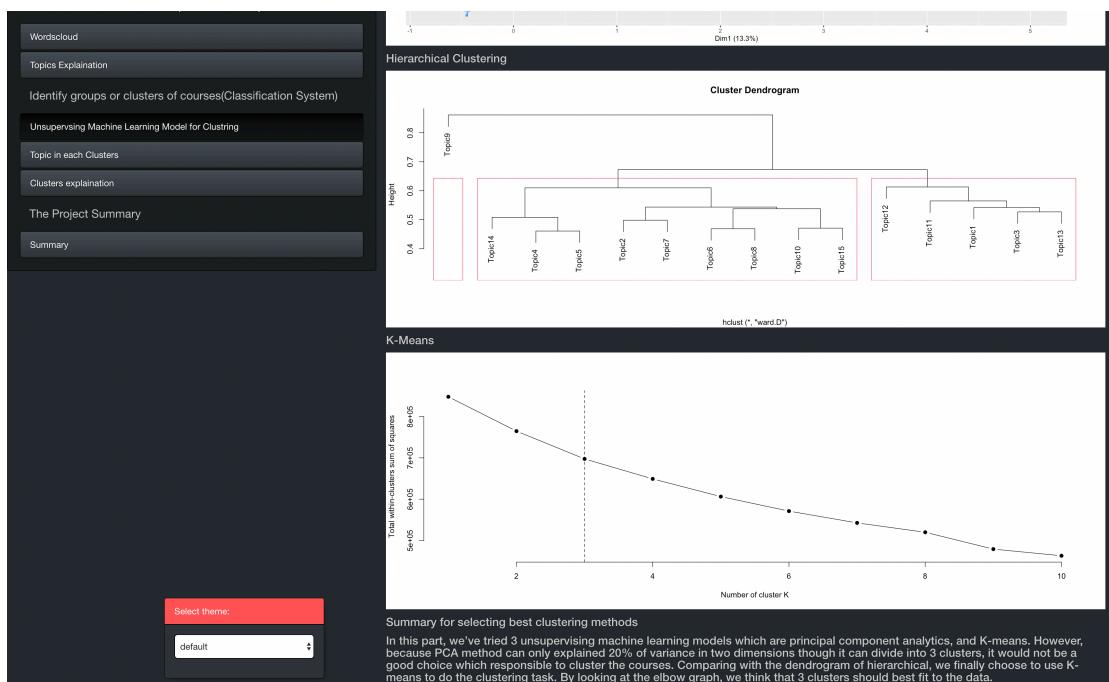
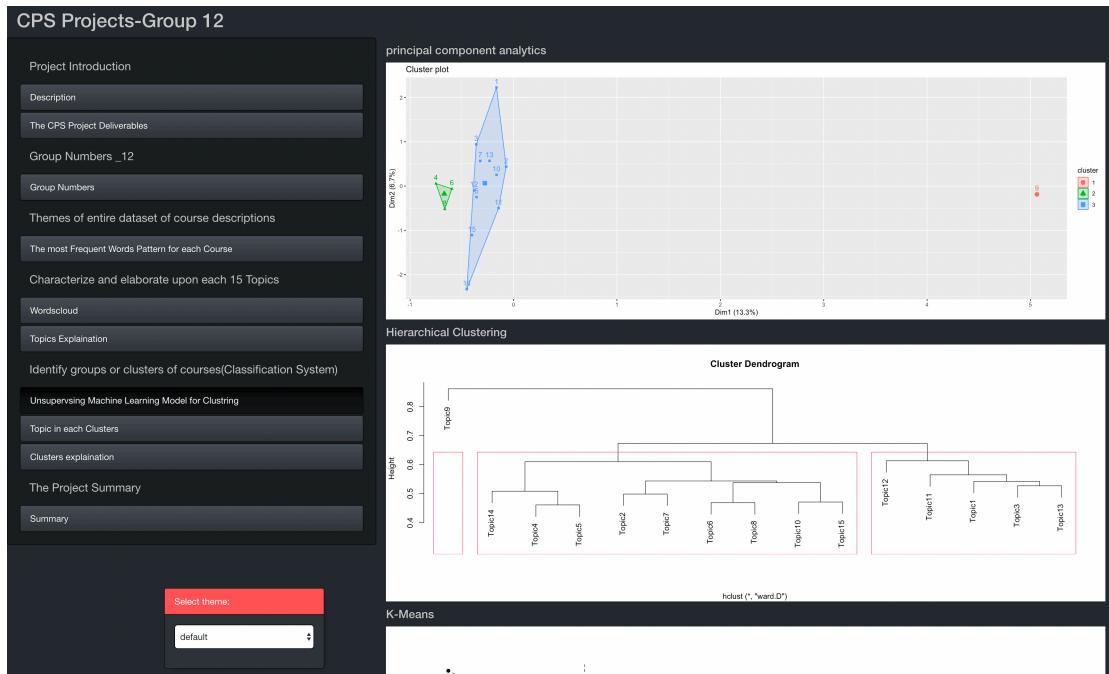
Frequency(5):

word	n
include	27
financial	23
account	22
statement	17
tax	17

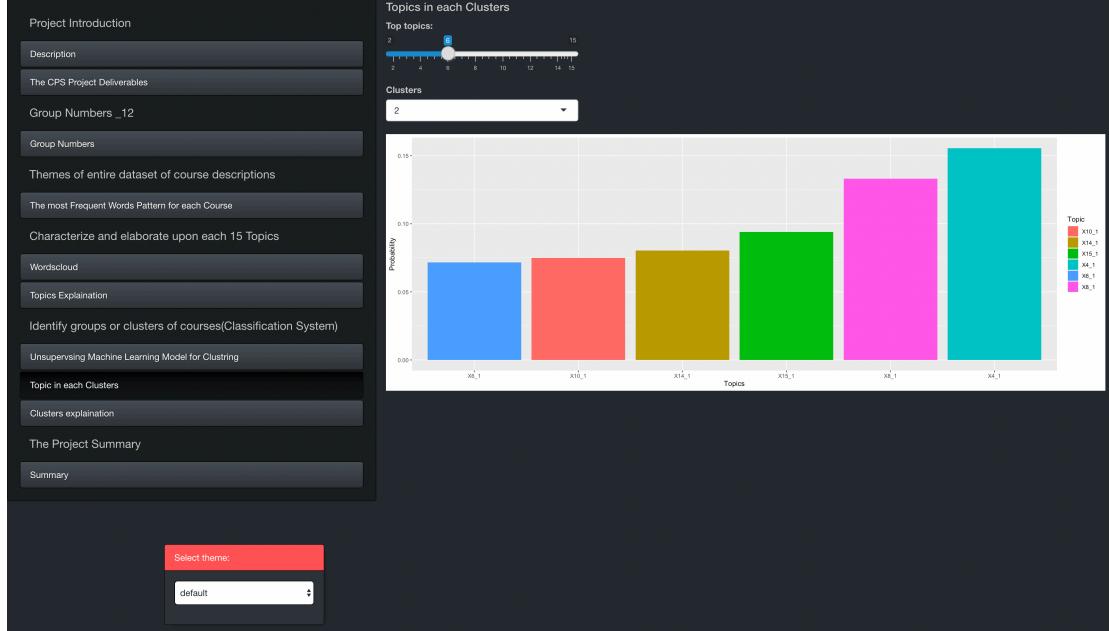
Summary

We try to identify themes that are common across the entire data set of course descriptions by the frequency of words which in the gram1, gram2 and gram3. In this dashboard you can select one course code or check all courses and change the number of the top to check the frequency of words. In perspective of all course in this data set, the top 10 word here are datum, student, offer, analytics, introduce, opportunity, analysis, technique, management, decision. So, we can summarize the themes of the data which like some courses about helping students to analyze data through some technical analysis means in order to help students better grasp the employment opportunities, and teach students how to get offer and how to introduce themselves. The final goal is to enable students to better grasp opportunities and learn scientific management and analysis.





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