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TURKIYE STUDENT EVALUATION

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Team

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Introduction

Student evaluations of teaching (SET) play a crucial role in higher education institutions worldwide, serving as a means to assess the performance of academic staff and the quality of courses. Each institution often tailors its SETs to measure variables that are most relevant to their specific context. With the rise of online teaching evaluations, educational administrators now have the opportunity to extend the time period during which students can participate in these surveys.

By understanding the major drivers behind student success, we can make evidence-based recommendations to optimize teaching strategies, curricula, and student support mechanisms. This project aligns with our commitment to fostering an enriching learning environment that empowers students to thrive academically and reach their full potential.

Data

This data set contains a total 5820 evaluation scores provided by students from Gazi University in Ankara (Turkey). There is a total of 28 course specific questions and additional 5 attributes.

Features

instr: Instructor's identifier; values taken from {1,2,3}

class: Course code (descriptor); values taken from {1-13}

repeat: Number of times the student is taking this course; values taken from {0,1,2,3,...}

attendance: Code of the level of attendance; values from {0, 1, 2, 3, 4}

difficulty: Level of difficulty of the course as perceived by the student; values taken from {1,2,3,4,5}

Q1: The semester course content, teaching method and evaluation system were provided at the start.

Q2: The course aims and objectives were clearly stated at the beginning of the period.

Q3: The course was worth the amount of credit assigned to it.

Q4: The course was taught according to the syllabus announced on the first day of class.

Q5: The class discussions, homework assignments, applications and studies were satisfactory.

Q6: The textbook and other courses resources were sufficient and up to date.

Q7: The course allowed field work, applications, laboratory, discussion and other studies.

Q8: The quizzes, assignments, projects and exams contributed to helping the learning.

Q9: I greatly enjoyed the class and was eager to actively participate during the lectures.

Q10: My initial expectations about the course were met at the end of the period or year.

Q11: The course was relevant and beneficial to my professional development.

Q12: The course helped me look at life and the world with a new perspective.

Q13: The Instructor's knowledge was relevant and up to date.

Q14: The Instructor came prepared for classes.

Q15: The Instructor taught in accordance with the announced lesson plan.

Q16: The Instructor was committed to the course and was understandable.

Q17: The Instructor arrived on time for classes.

Q18: The Instructor has a smooth and easy to follow delivery/speech.

Q19: The Instructor made effective use of class hours.

Q20: The Instructor explained the course and was eager to be helpful to students.

Q21: The Instructor demonstrated a positive approach to students.

Q22: The Instructor was open and respectful of the views of students about the course.

Q23: The Instructor encouraged participation in the course.

Q24: The Instructor gave relevant homework assignments/projects, and helped/guided students.

Q25: The Instructor responded to questions about the course inside and outside of the course.

Q26: The Instructor's evaluation system (midterm and final questions, projects, assignments, etc.) effectively measured the course objectives.

Q27: The Instructor provided solutions to exams and discussed them with students.

Q28: The Instructor treated all students in a right and objective manner.

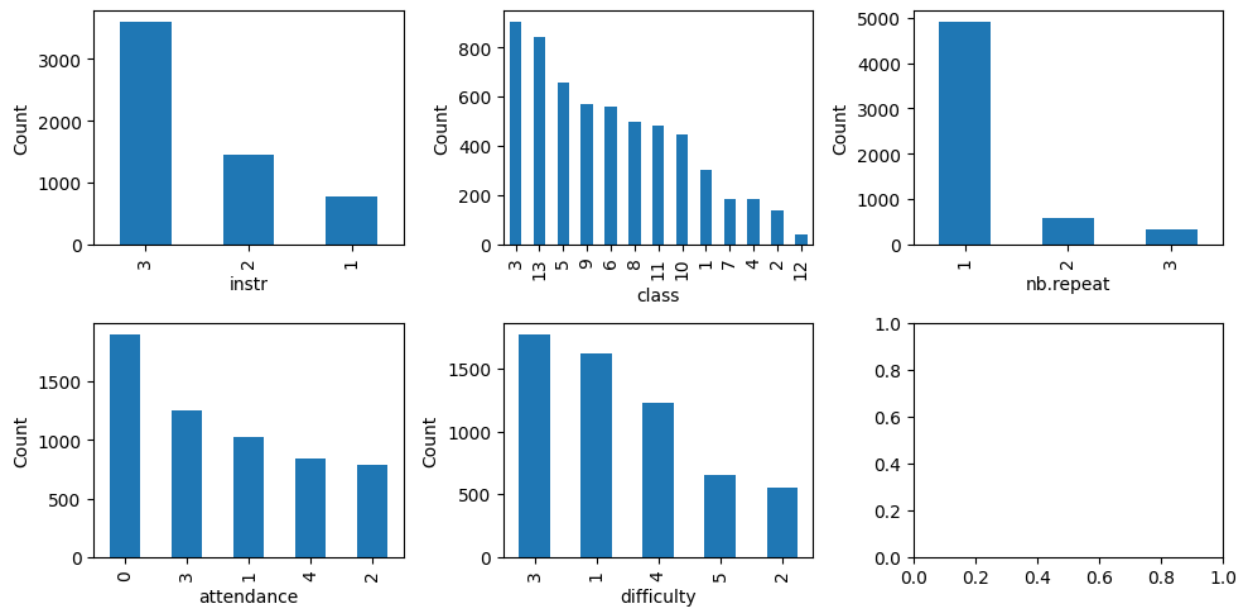
Q1-Q28 are all Likert-type, meaning that the values are taken from {1,2,3,4,5}

The course related features were grouped into three categories as follows:

Feature	Category
Q1, Q5-Q10	Personal Commitment
Q2-Q4, Q11, Q12	Course questions
Q13-Q28	Instructor questions

Exploratory Data Analysis

Analysis of the Non-Course Related Features



The distribution of count values for most features is uneven, indicating disparities among them.

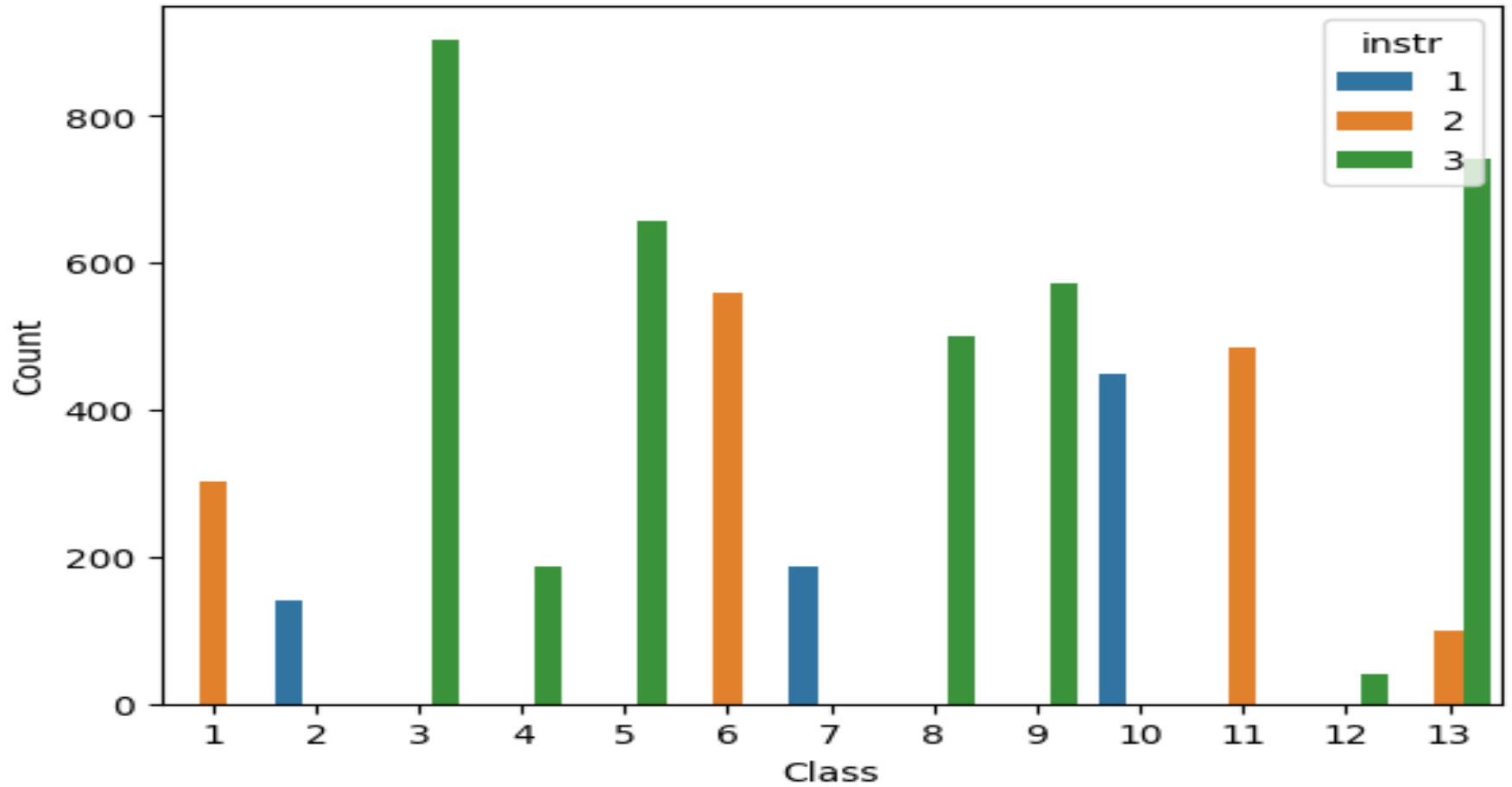
Are there only three instructors, or do they form a cluster with similar teaching styles or habits? Notably, Instructor 3 appears to have the majority. What factors contribute to this pattern, and how many classes does each instructor teach?

The class feature's count values are imbalanced, with 3, 13, and 5 having the majority, while 4, 2, and 12 represent the minority. Why is there less data for those classes? Is it due to lower attendance compared to the first three?

Class repetitions are infrequent, with most classes being retaken only once. However, some classes are repeated multiple times. What factors influence this variation?

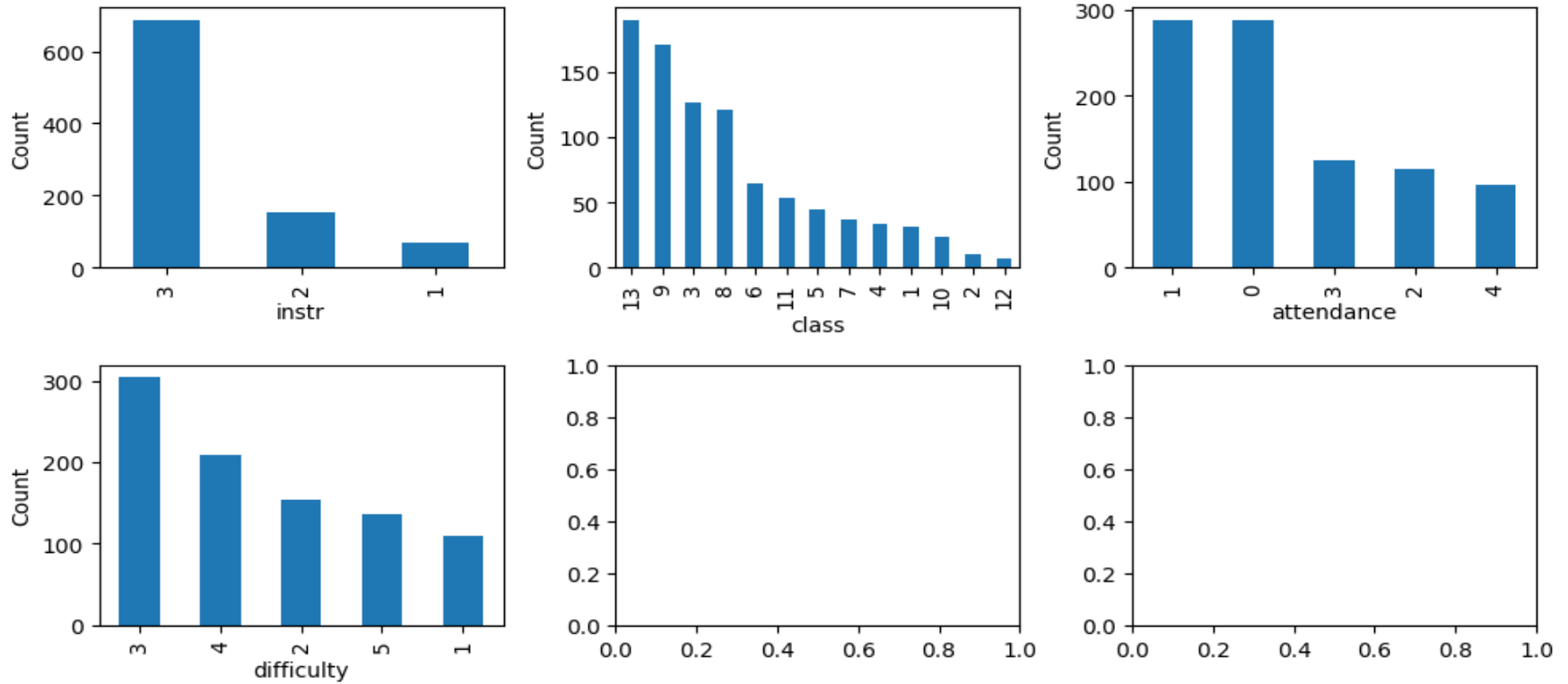
The peculiar attendance pattern, such as a significant jump from 0 to 3 and from 1 to 4, raises questions. What might be influencing this attendance pattern? Is it related to the specific course or the instructor teaching it?

Despite the instructors and classes not being overly challenging, the attendance level remains low, especially for the top values of 3 and 1. What factors contribute to this trend?



1Distribution of Classes by Handled per Instructor

As shown above, instructor 3 take the majority of the classes followed by instructor 2.



2 Distribution of the Major Features for Students who are Repeating the Class

The data highlights that class 13, 9, and 3 have the highest number of repeat attendees. Interestingly, individuals retaking the course more than once tend to report 1 or 0 attendance, and these repeats often involve courses with a difficulty level of 3-4.

Student Personal Commitment (Q1, Q5-Q10)

Q1: The semester course content, teaching method and evaluation system were provided at the start.

Q5: The class discussions, homework assignments, applications and studies were satisfactory.

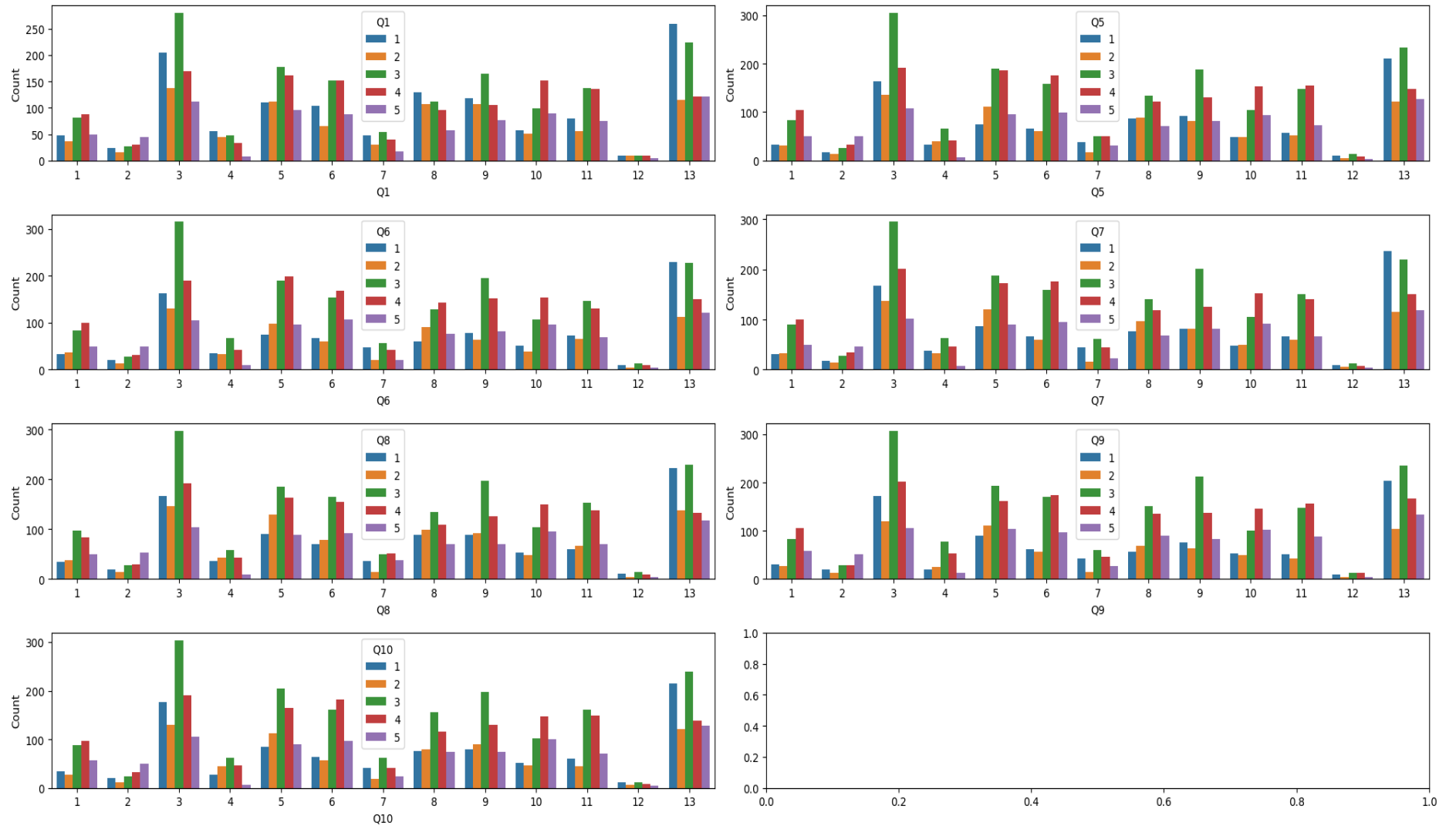
Q6: The textbook and other courses resources were sufficient and up to date.

Q7: The course allowed field work, applications, laboratory, discussion and other studies.

Q8: The quizzes, assignments, projects and exams contributed to helping the learning.

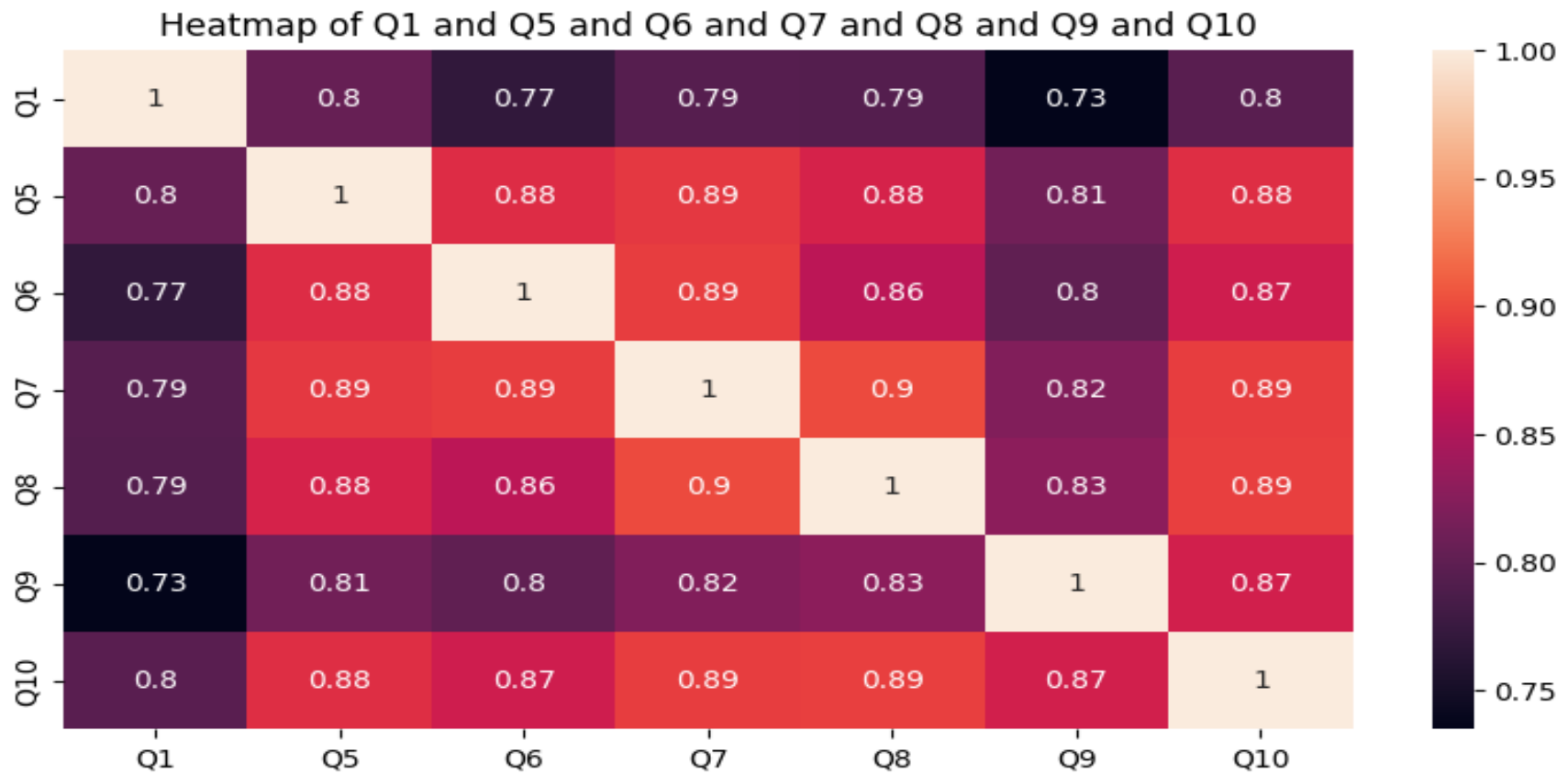
Q9: I greatly enjoyed the class and was eager to actively participate during the lectures.

Q10: My initial expectations about the course were met at the end of the period or year.



3Distribution of the Student Responses by each Class

As evident from the plot above, the majority of recorded scores lie between 3 and 4. However, there are a few exceptions observed in class 13, 12, 3, and 4, where the predominant scores are between 1, 3, and 4.



Personal Commitment Summary

Insights from the EDA show that higher levels of attendance correlate with higher recorded scores for semester course content, class discussions, course resources, allowed field work, quizzes, and eagerness to actively participate during lectures.

Courses with a mid-level difficulty (between 3 and 4) tend to have higher recorded scores for the mentioned factors, as do classes 1, 2, 10, and 11, which also have a majority difficulty level of 3 and high attendance levels.

Instructors 1 and 2, who handle classes with mid-level difficulty and higher attendance, also receive higher recorded scores for the mentioned factors.

Furthermore, features Q5, Q6, Q7, Q8, and Q10 exhibit strong correlations, indicating that student satisfaction with a course is influenced by positive learning experiences, meeting initial expectations, access to resources, opportunities to apply the material, and fair assessments. While these correlations suggest a link to student satisfaction, causality or direct relationships are not implied.

Course questions (Q2-Q4, Q11, Q12)

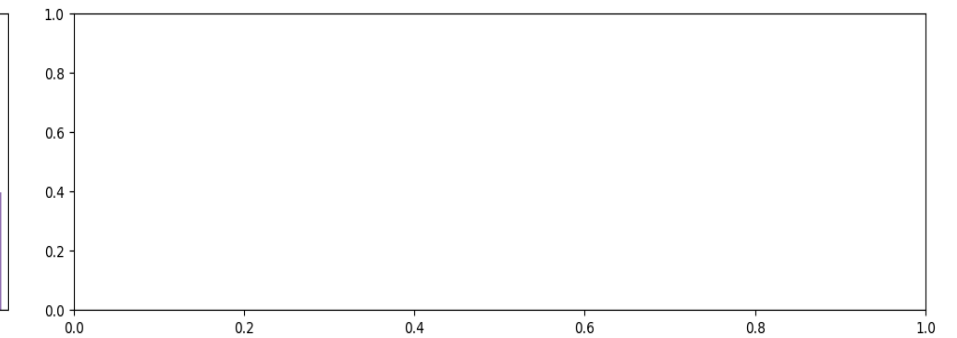
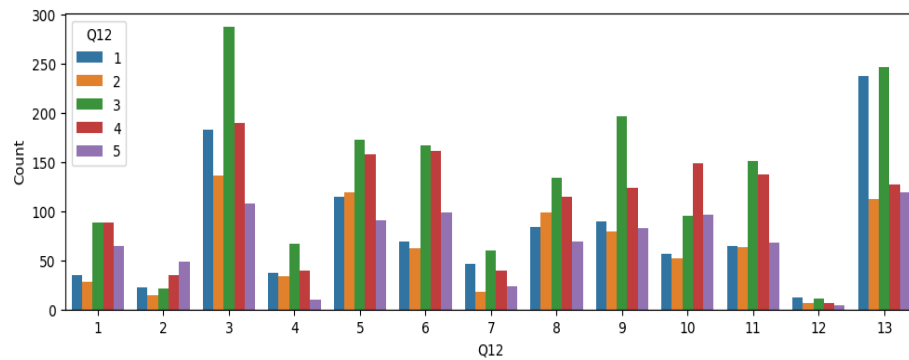
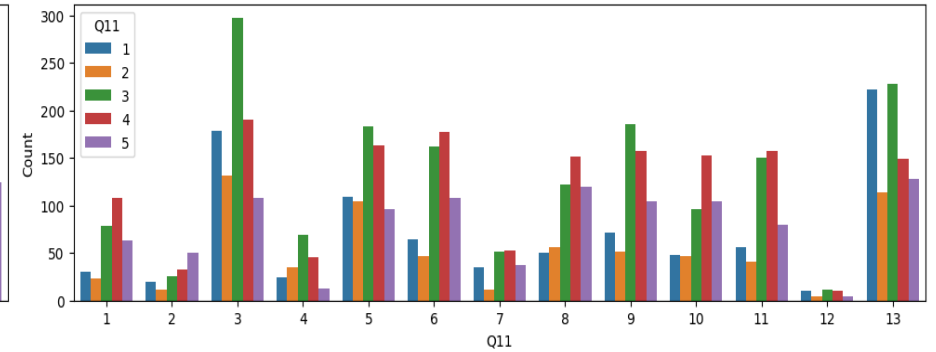
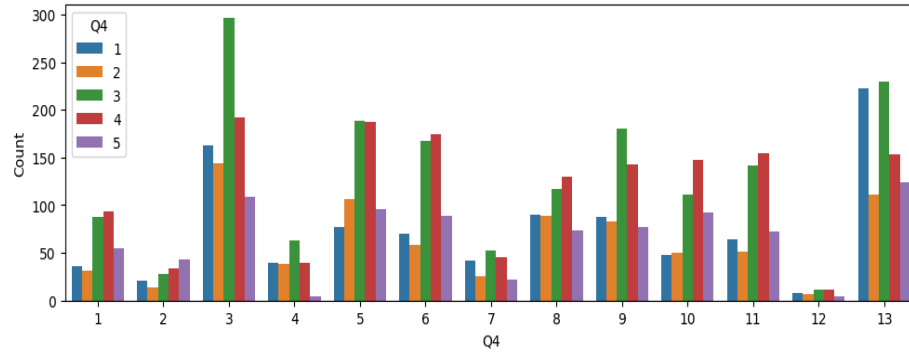
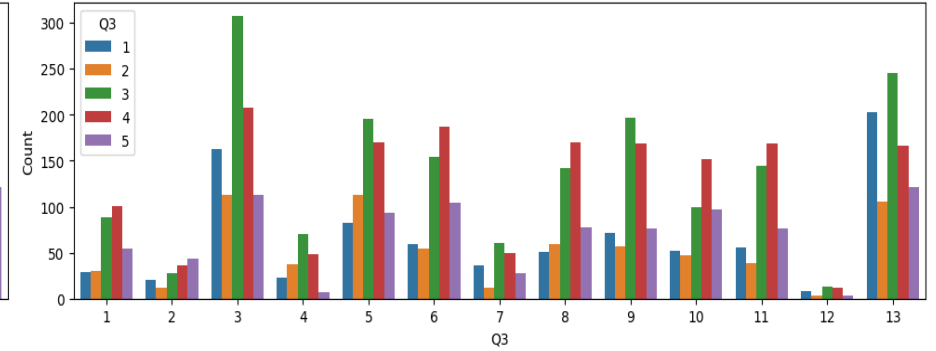
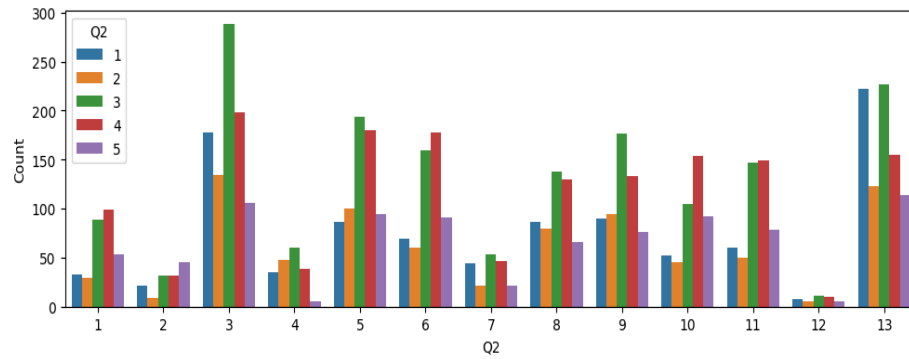
Q2: The course aims and objectives were clearly stated at the beginning of the period.

Q3: The course was worth the amount of credit assigned to it.

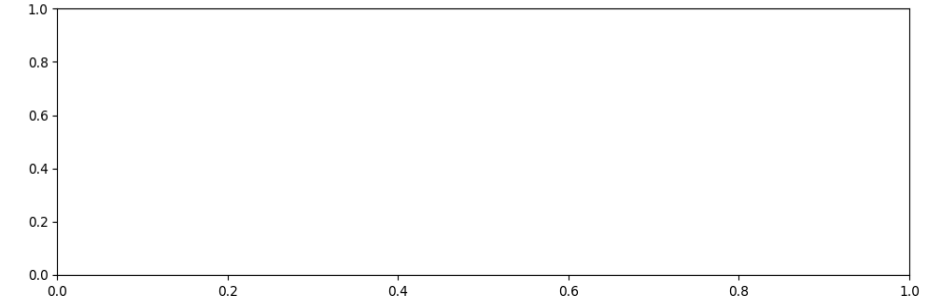
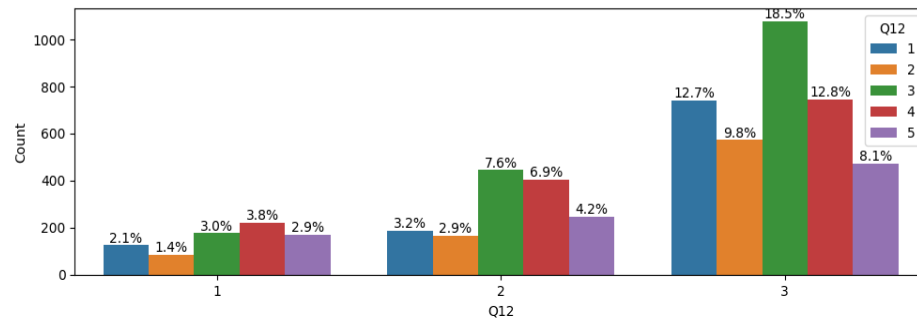
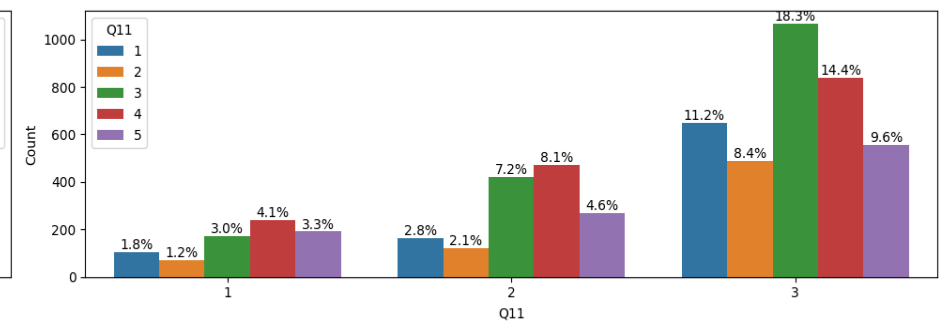
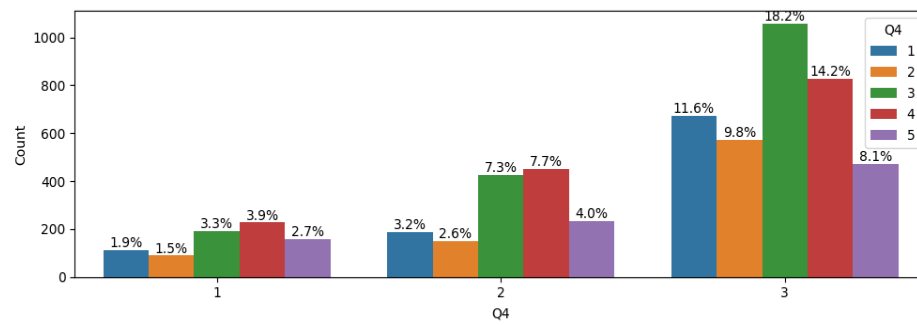
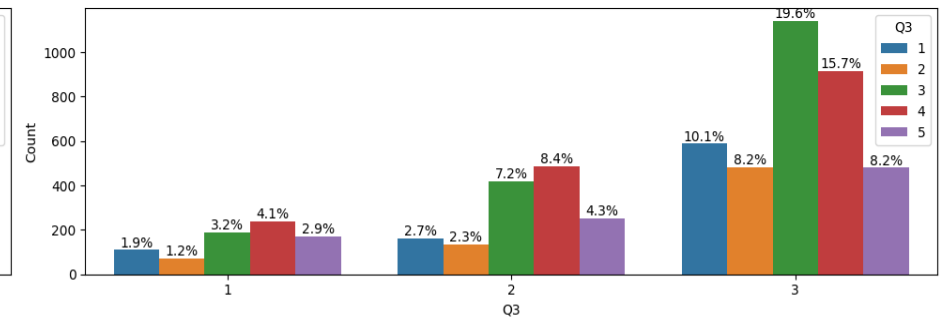
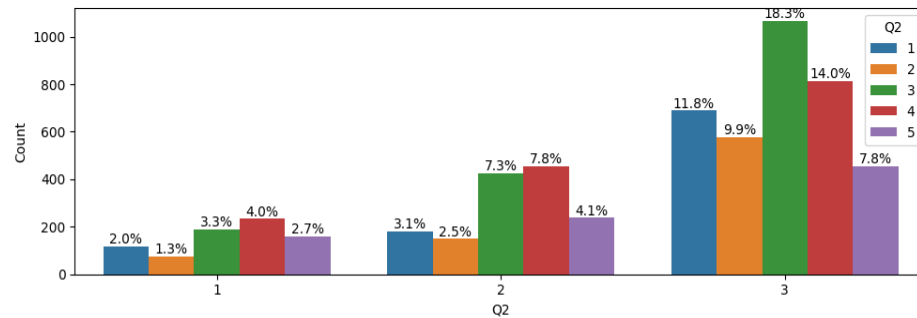
Q4: The course was taught according to the syllabus announced on the first day of class.

Q11: The course was relevant and beneficial to my professional development.

Q12: The course helped me look at life and the world with a new perspective.

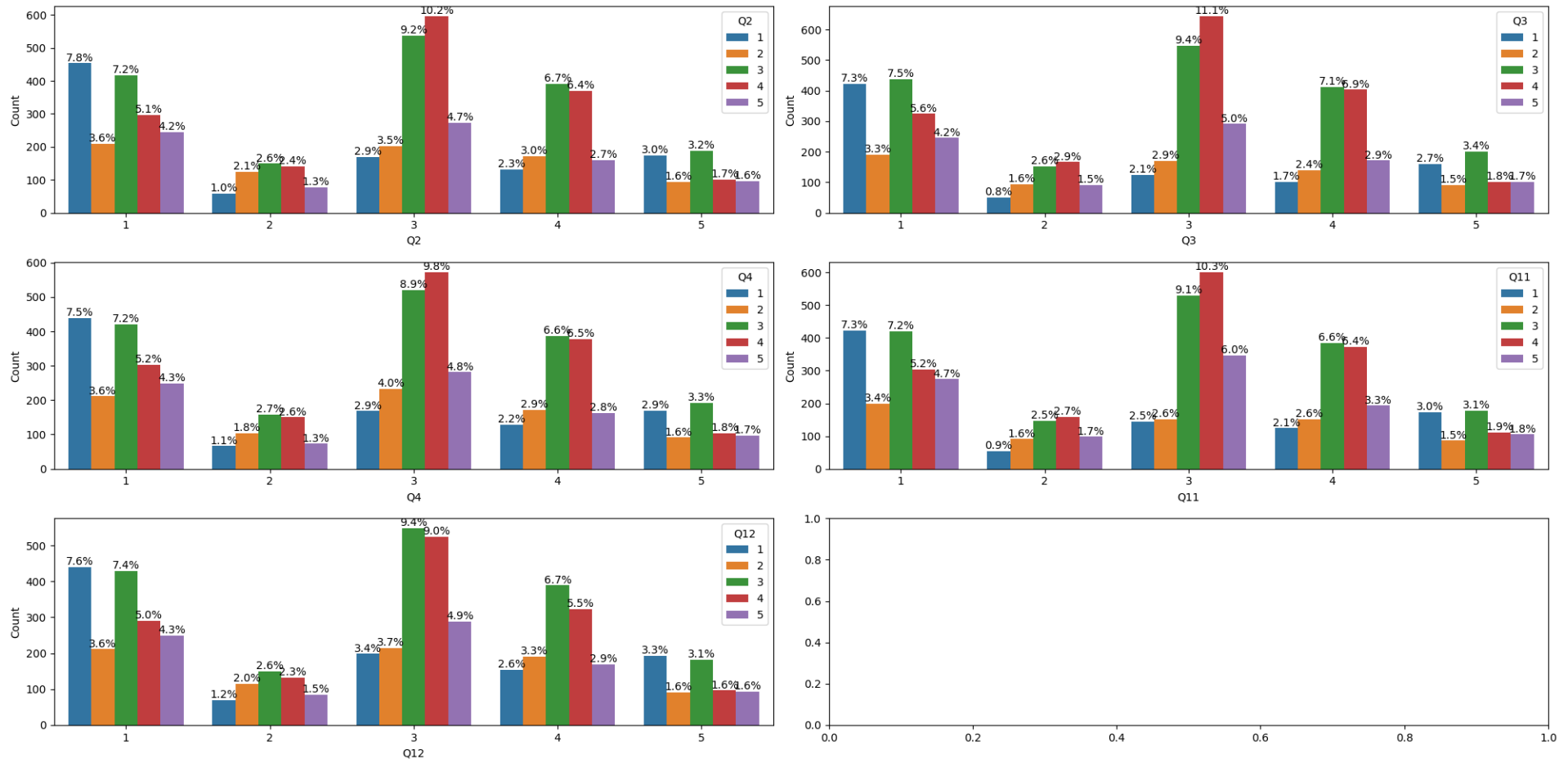


4Distribution of the Student Responses by each Class



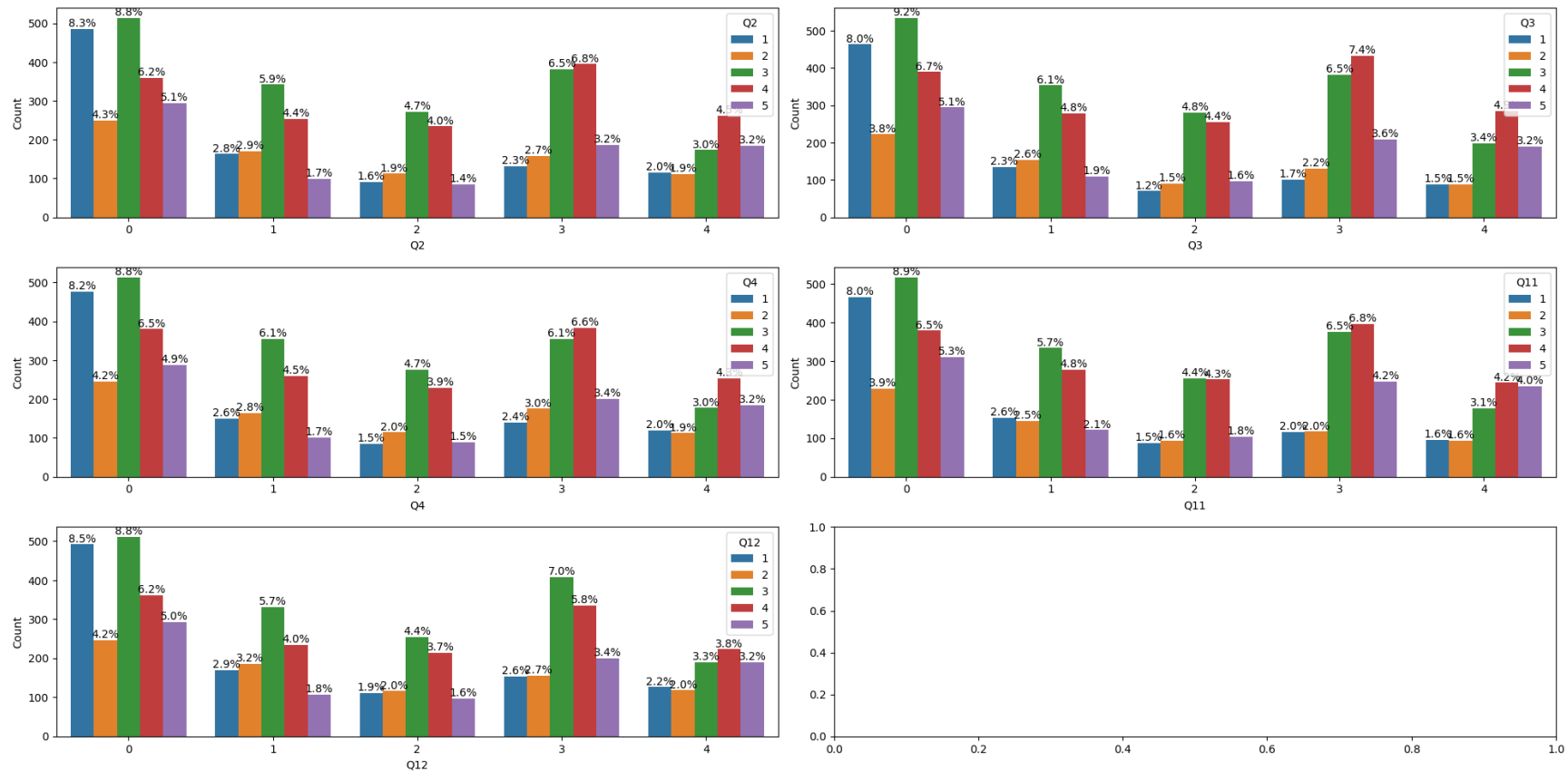
5Distribution of the Student Responses per each Instructor

The plot reveals distinct patterns among instructors. Instructors 1 and 2 predominantly receive higher recorded scores (3, 4, and 5), while Instructor 3 receives more scores between 1, 3, and 4. It is essential to investigate the reasons behind this discrepancy. Instructor 3, who teaches easier courses with lower attendance, particularly receives lower scores for course aims and objectives. Further examination is necessary to understand the factors influencing these variations and their impact on course outcomes.



6Distribution of the Student Responses per each Instructor

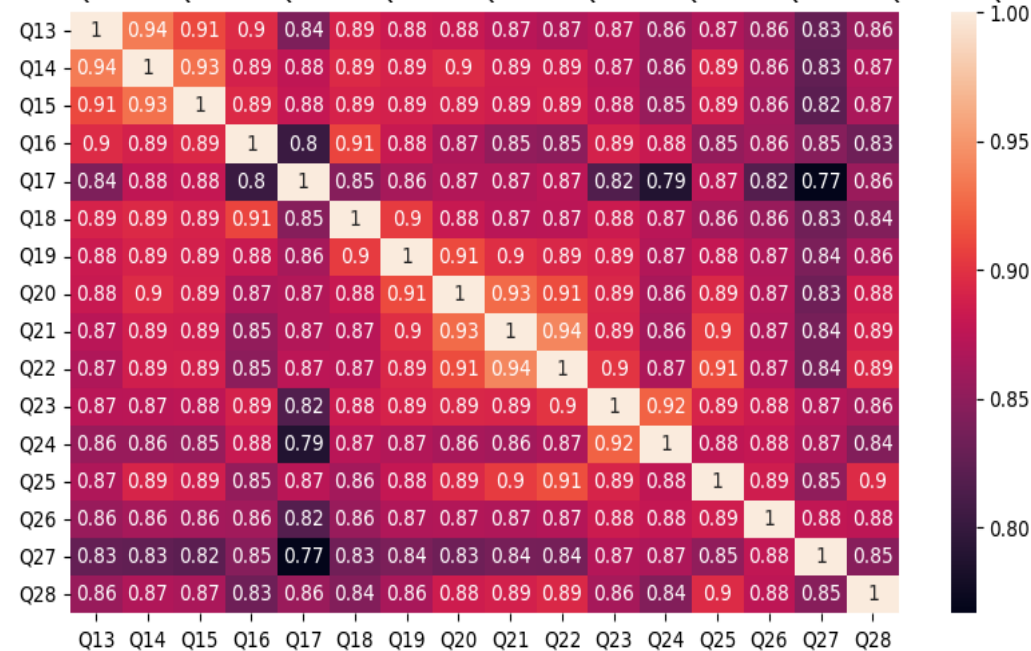
The plot indicates that courses with difficulty levels 0 and 5 have lower recorded scores. This suggests that extreme difficulty levels, both too easy (0) and too hard (5), may lead to reduced student engagement and learning outcomes. In the case of extremely easy courses, students may not find them challenging enough to benefit fully. Conversely, highly difficult courses might pose challenges that hinder students from fully engaging and benefiting from the course content.



7Distribution of the Student Responses by Attendance

The plot reveals a clear positive correlation between recorded scores and the level of attendance. As the level of attendance increases, so do the recorded scores. This suggests that higher attendance is associated with better academic performance or overall satisfaction with the course.

Heatmap of Q13 and Q14 and Q15 and Q16 and Q17 and Q18 and Q19 and Q20 and Q21 and Q22 and Q23 and Q24 and Q25 and Q26 and Q27 and Q28



Course Questions Summary

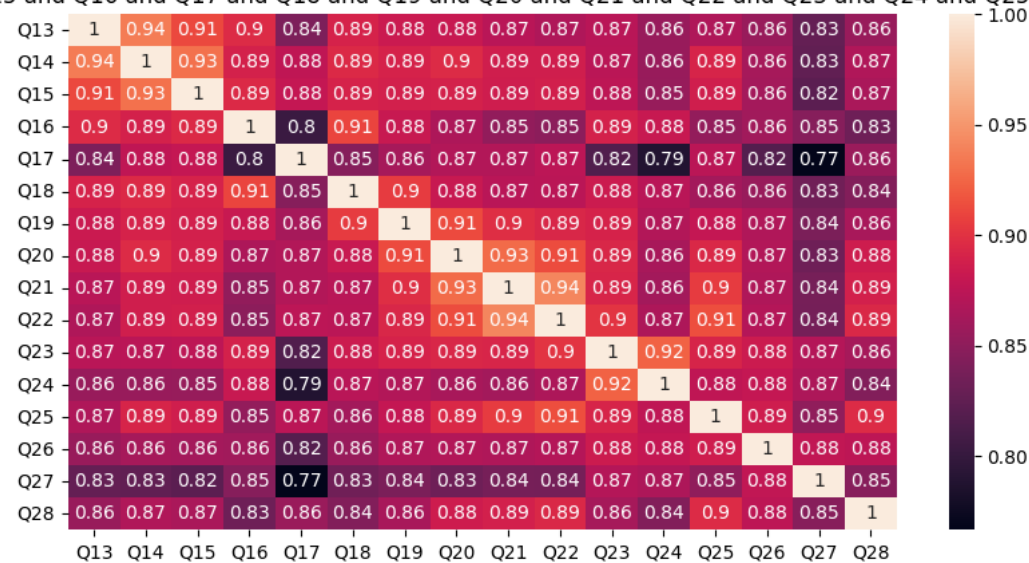
The analysis reveals that higher attendance levels correspond to higher recorded scores for course aims and objectives, credit worthiness, course syllabus, relevance and benefits to professional development, and developing a new perspective. Courses with moderate difficulty (between 3 and 4) also exhibit higher recorded scores for these features, particularly for classes 1, 2, 10, and 11.

Instructors 1 and 2, who handle classes with moderate difficulty and higher attendance, similarly receive higher recorded scores for the mentioned features. However, some features do not align with this pattern and tend to have lower recorded scores.

Additionally, features Q2 and Q4 are closely related, indicating that student satisfaction is influenced by instructors' clarity and organization in teaching, as well as adherence to the syllabus. When instructors effectively communicate expectations and follow the syllabus, students are more likely to be satisfied with the course overall.

Instructor Questions (Q13-Q28)

Heatmap of Q13 and Q14 and Q15 and Q16 and Q17 and Q18 and Q19 and Q20 and Q21 and Q22 and Q23 and Q24 and Q25 and Q26 and Q27 and Q28



Summary

Questions Q13, Q14, Q15, Q16, Q18, Q19, and Q20 are related to the instructor's knowledge, preparation, delivery, and use of class hours. Positive scores in these areas indicate that students value instructors who are knowledgeable, prepared, and effectively utilize class time.

Questions Q14, Q15, Q19, Q20, Q21, Q22, Q23, and Q25 pertain to the instructor's positive approach, respectfulness, encouragement, and responsiveness to students. Scores in these areas reflect students' satisfaction with instructors who exhibit clear and effective communication skills.

Questions Q16, Q23, Q24, and Q25 center on the instructor's commitment, participation, homework assignments, and guidance. Positive scores suggest that students appreciate instructors who are dedicated to the course and create a positive learning environment.

Questions Q25, Q26, and Q28 concern the instructor's evaluation system, solutions, and fairness. High scores in these areas indicate that students prefer instructors who utilize fair and objective evaluation methods.

Lastly, questions Q21, Q22, and Q28 relate to the instructor's openness, respectfulness, and fairness. Students' positive responses to these aspects indicate that trust and confidence in the instructor are crucial factors in their overall satisfaction with the course.