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Heuristic Evaluation of the Task

Q1.

1.1

Q1. Calculus

Q1.1 [3pt] What is the integral of x ?

$\frac{1}{2}x^2 + C$

Feedback icons: checkmark, circle, checkmark, circle, minus, question mark, refresh, close.

1.1: Integral

0 OF 10 GRADED

TOTAL POINTS
3.0 / 3.0 pts

Rubric Settings
Collapse View ▾

1 -1.5
Correct

Add Rubric Item Import...

SUBMISSION SPECIFIC ADJUSTMENTS
Point Adjustment: 0

idk idk

A. This is the interface where the user grades a particular question. The block below the 'Total points' is defined rubric items. A user can add or delete multiple rubric items that define how the grades are added.

B. The Heuristics violated is
a) Help and Documentation

C. The Heuristic is being violated because at first glance if a user wants to give a grade they would click on the grade below 'Total Points'. When Grading the grades are not updated when I edit the points. They are only updated when I press the numbered rubric button. This is unintuitive since even the color of the grade is light grey which suggests it must be edited. It is assumed that a rubric is required for grading and will be static. For

D. I would rate the severity as **4** since it's more instinctive to click on the light grey grade than to understand that clicking on the numbered rubric will update the grade.

1.2

The screenshot shows the Gradescope Grading Dashboard for a 'Demo Midterm' assignment. On the left, there's a sidebar with navigation links: 'Back to Gradescope 101', 'Demo Midterm' (selected), 'Edit Outline', 'Manage Scans', 'Manage Submissions' (selected), 'Grade Submissions' (selected), 'Review Grades', 'Regrade Requests', 'Statistics', and 'Settings'. The main area is titled 'Grading Dashboard' and contains a table with the following data:

QUESTION	POINTS	PROGRESS	GRADED BY
1: Calculus	6.0		
..... 1.1: Integral	3.0	<div style="width: 10%;">10%</div>	VD
..... 1.2: Derivative	3.0	<div style="width: 0%;">0%</div>	
2: United States Geography	2.0	<div style="width: 30%;">30%</div>	VD
3: Chemistry	4.0		
..... 3.1: Lewis Structure	3.0	<div style="width: 0%;">0%</div>	
..... 3.2: Multiple Choice	1.0	<div style="width: 0%;">0%</div>	

At the bottom of the dashboard, there's a red-bordered bar with three items: 'Account' (with a user icon), 'Assignment grading progress: 7%' (with a downward arrow icon), and 'Next Question >' (a dark blue button).

- A. This interface uses a bottom bar that allows access to Account information, CTA buttons to move forward, and some progress content as well.
- B. The Heuristics violated is Consistency and Standards.
- C. The Heuristic is being violated because the common convention is to have a top bar instead of a bottom bar. The interface should ideally have account information and progress content in the top bar. The CTA to move forward ('Next Question' button in this case) should remain in the bottom right corner without the bar.
- D. I would rate the severity as 3 since a user would have to adapt to the bottom bar which is not commonly used across apps. Also, the account info at the bottom left corner does not grab attention and is lost.

1.3

The screenshot shows a digital assignment interface. On the left, there is a sidebar with various icons. In the center, a PDF document is displayed. The PDF contains a math problem: "Q1. Calculus Q1.1 [3pt] What is the integral of x? $x^2 + C$ " and "Q1.2 [3pt] What is the derivative of $\cos x$? $\cos x$ ". Below this is another question: "Q2. [2pt] United States Geography". It asks to mark North Dakota and South Dakota on a map of the United States. At the bottom of the PDF, there are three buttons: a blue one labeled "C", a green one with a magnifying glass, and a red one with a magnifying glass. A red box highlights a row of five action buttons at the top right of the PDF area, which include a pointer, text, free annotation, box (highlighted with a green circle), and eraser. To the right of the PDF, there is a grade summary for "1: Integral": "1 OF 10 GRADED", "TOTAL POINTS 3.0 / 3.0 pts", and a note "1 -1.5 Correct". There are buttons for "Add Rubric Item" and "Import...". Below this is a section for "SUBMISSION SPECIFIC ADJUSTMENTS" with a "Point Adjustment" field set to 0. At the bottom, there are navigation buttons: "Submission: 2 of 10", "Previous Ungraded", "Previous", "Next", and "Next Ungraded".

- A. This interface highlighted in red is the action box to annotate on the pdf slides. It consists of the pointer, text, free annotation, box, and eraser.
- B. The Heuristic violated is Help and Documentation.
- C. There is no information given as to what these actions do on the slides and are assumed to be known by the user. Some of these symbols are commonly known but some symbols like the box (highlighted in green) are not used by several apps. It takes a while for the user to understand what the box action does. Unless the user drags the mouse across the slide they would not know what the box button does.
- D. I would rate the severity as **2** since once the user finds out what each button does it would be easy to use the next time around.

1.4

gradescope

Back to Gradescope 101

Demo Midterm

- Edit Outline
- Manage Scans
- Manage Submissions
- Grade Submissions
- Review Grades

- Regrade Requests
- Statistics
- Settings

Manage Scans

Upload scans in PDF format. A single file can contain multiple student submissions (it is more efficient to scan in batches). Multiple files can be uploaded at once.

Gradescope attempts to split each uploaded scan into submissions. The proposed split depends on the length of the **question outline**. For scans that are not automatically split, click **Show** to review the proposed submissions (you can change split points and re-order pages), then click **Create Submissions**.

Drop files anywhere on the page, or select files using the button below.

Select PDF Files

2.pdf · 2022 Sep 28 at 1:55:23 am ⓘ Ready to create submissions (Unable to confidently auto-split)

Show

1.pdf · 2022 Sep 28 at 1:55:23 am ⓘ 10 Active submissions created automatically

Show

Account Submissions created for 1 out of 2 scans. Manage Submissions

Adobe Acrobat 1

T Open in desktop app Tools

Name: Hilda Nguyen Student ID: 204129743

Introduction to Gradescope Fall 2014 Midterm

Q1. Calculus

Q1.1 [3pt] What is the integral of x ? Q1.2 [3pt] What is the derivative of $\cos x$?

$$\frac{1}{2}x^2 + C$$

$$-\sin x$$

Q2. [2pt] United States Geography

Mark North Dakota and South Dakota on the map below.

Tools

ⓘ Sign in to access all tools with your Acrobat Pro DC subscription

Using these tools uploads your file to Adobe cloud storage.

Convert

- PDF to Word
- PDF to JPG
- PDF to Excel
- PDF to PPT
- Compress PDF
- Convert to PDF

Edit

- Merge PDFs
- Reorder pages

- This interface is used to manage the scans uploaded. It shows the pdf that is uploaded to be graded by the user.
- The Heuristic violated is User Control and Freedom.
- The Heuristic is violated because the interface gives no option for the user to go back. It gives an option to go forward in the first image but no option to undo the action. It becomes confusing for the user to navigate the interface.
- I would rate the severity as 3 since once the user should have the option to undo their action and navigate both ways. I

1.5

The screenshot shows a list of student grades for a "Demo Midterm". The columns are: Name, Email, Grade, and three status icons. A red box highlights the last five rows (Paul Gregory, Rose Perez, Sherri Johnson, Bob Neal, Caleb Martinez), and a green box highlights the first two rows (Dale Long, Hilda Nguyen). The status icons are very light and appear disabled.

Name	Email	Grade	Icon 1	Icon 2	Icon 3	Date
Dale Long	dale.long68@example.com	0.0	✓	🕒	🕒	Sep 28 at 1:55AM
Hilda Nguyen	hilda.nguyen83@example.com	1.5	✓	🕒	🕒	Sep 28 at 1:55AM
Kent Hansen	kent.hansen98@example.com	0.0	✓	🕒	🕒	Sep 28 at 1:55AM
Melanie Robinson	melanie.robinson86@example.com	0.0	✓	🕒	🕒	Sep 28 at 1:55AM
Paul Gregory	paul.gregory86@example.com	0.5	✓	🕒	🕒	Sep 28 at 1:55AM
Rose Perez	rose.perez66@example.com	0.0	✓	🕒	🕒	Sep 28 at 1:55AM
Sherri Johnson	sherri.johnson53@example.com	0.0	✓	🕒	🕒	Sep 28 at 1:55AM
Bob Neal	bob.neal61@example.com		This student doesn't have a submission.			
Caleb Martinez	caleb.martinez87@example.com		This student doesn't have a submission.			
Charles Mendoza	charles.mendoza97@example.com		This student doesn't have a submission.			
Darlene Pearson	darlene.pearson61@example.com		This student doesn't have a submission.			
Gabriella Kuhn	gabriella.kuhn84@example.com		This student doesn't have a submission.			

Account

Download Grades

Export Evaluations

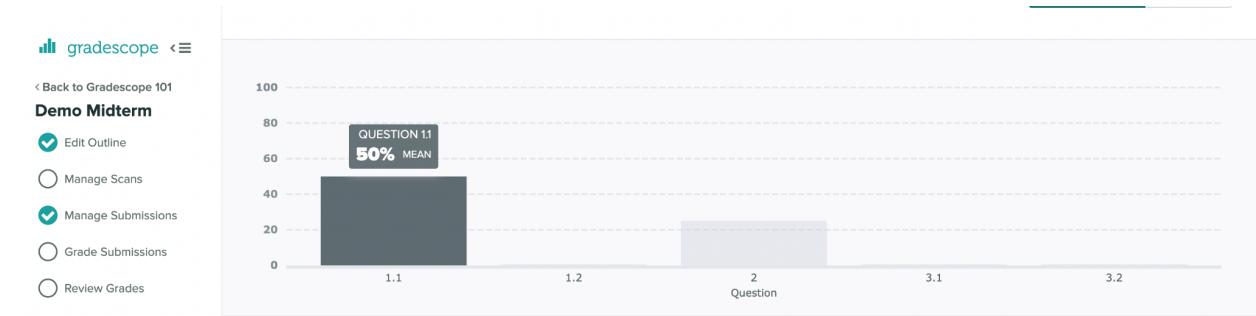
Export Submissions

Post Grades to Canvas

Publish Grades

- This interface reviews the grades of the students. It shows the status of the grading that has been done for each of them.
- The Heuristic violated is Consistency and Standards.
- The symbols indicating graded and viewed columns are very light and seem like they are disabled. Further, all the students that don't have a submission should not be included in the same table as they disrupt the consistency of the table.
- I would rate the severity as **2** since even though UI here is inconsistent it can be the progress of the grading done can be identified.

1.6



Demo Midterm 12.0 points

MINIMUM	MEDIAN	MAXIMUM	MEAN	STD DEV
0.0%	0.0%	12.5%	2.5%	4.48%

QUESTION

POINTS

MEAN

1: Calculus

6.0 points

..... 1.1: Integral (only 10% graded)
Click to Add Tags

3.0 points

50%

Account

gradesope

Back to Gradescope 101

Demo Midterm

- Edit Outline
- Manage Scans
- Manage Submissions
- Grade Submissions
- Review Grades

- Regrade Requests
- Statistics
- Settings

Demo Midterm 12.0 points

MINIMUM	MEDIAN	MAXIMUM	MEAN	STD DEV
0.0%	0.0%	12.5%	2.5%	4.48%

QUESTION

POINTS

MEAN

1: Calculus

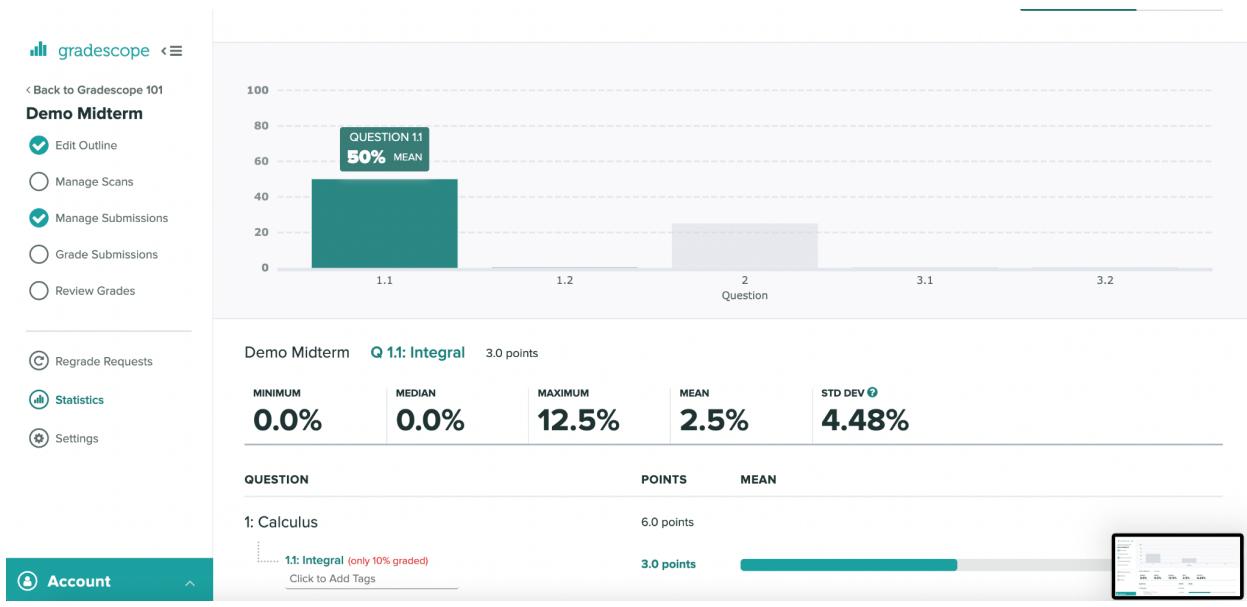
6.0 points

..... 1.1: Integral (only 10% graded)
Click to Add Tags

3.0 points

50%

Account



- A. This interface shows the Statistics of all the questions. It displays the overall grades received for each question and plots them into a interactive bar graph.
- B. The Heuristic violated is 'Consistency and Standards' and 'Help and Documentation'.
- C. These heuristics are violated because the graph also displays data when you hover or click on it and updates the stats information below accordingly. It is not intuitive enough for the user to have to explore the bar every time they want to view the statistics for a question. Listing out the questions in a tabular form and then a graph form makes no sense since both these visuals show the same data.
- D. I would rate the severity to be 3 since for an instructor it is important to view the statistics and gain insights about the class. The navigation for the same should be seamless.

Q2.
2.1

The screenshot shows the Gradescope interface. On the left, there's a sidebar with various options: 'Back to Gradescope 202', 'Demo Programming...', 'Edit Outline' (checked), 'Configure Autograder' (checked), 'Create Rubric' (checked), 'Manage Submissions' (checked), 'Grade Submissions' (unchecked), 'Review Grades' (unchecked), 'Regrade Requests' (unchecked), 'Extensions' (unchecked), 'Statistics' (unchecked), 'Review Similarity' (unchecked), and 'Settings' (unchecked). Below this is an 'Account' section. The main area is titled 'Autograder Results' and shows a code editor for 'calculator.py'. The code defines a class 'CalculatorException' and a class 'Calculator' that parses infix arithmetic. The right side shows a rubric for 'Style' with two items: 'Correct' (0 points) and 'incorrect' (-5.0 points). At the bottom, it says 'Submission: 2 of 6' and has buttons for 'Previous Ungraded', 'Previous', 'Next', and 'Next Ungraded'.

- A. This interface shows the progress of the user while grading assignments. It has a list of steps that a user has to follow Create Outline, Configure Autograder, Create Rubric, Verify Submission, Grade Submissions, and Review Grades. At every step the interface lets the user know the status of their tasks. Especially when grading, if any submission is ungraded the Grade Submission is unchecked indicating the user has missed out on a submission. Further, The navigation at the bottom provides 'Previous Ungraded' and 'Next Ungraded' Along with the 'Previous' and 'Next' buttons which allows the user to stay on task on go to only the ungraded submissions and not move around the navigation looking for them
- B. Nielsen's heuristics being followed is
- Visibility of System Status
- C. I like the way this interface gives a good sense of direction and progress. The left menu bar gives a clear indication of all the steps completed from creating the outline to the Final grade review. It gives the user a tracker for its tasks. Also until all submissions are not graded the Grade submissions tracker is unchecked. This allows the user to understand that grading is incomplete. Secondly, the availability of the 'Previous Ungraded' and 'Next Ungraded' Along with the 'Previous' and 'Next' buttons is a great navigation feature made available. This allows the user to stay on task on go to only the ungraded submissions and not move around the navigation looking for them.

2.2

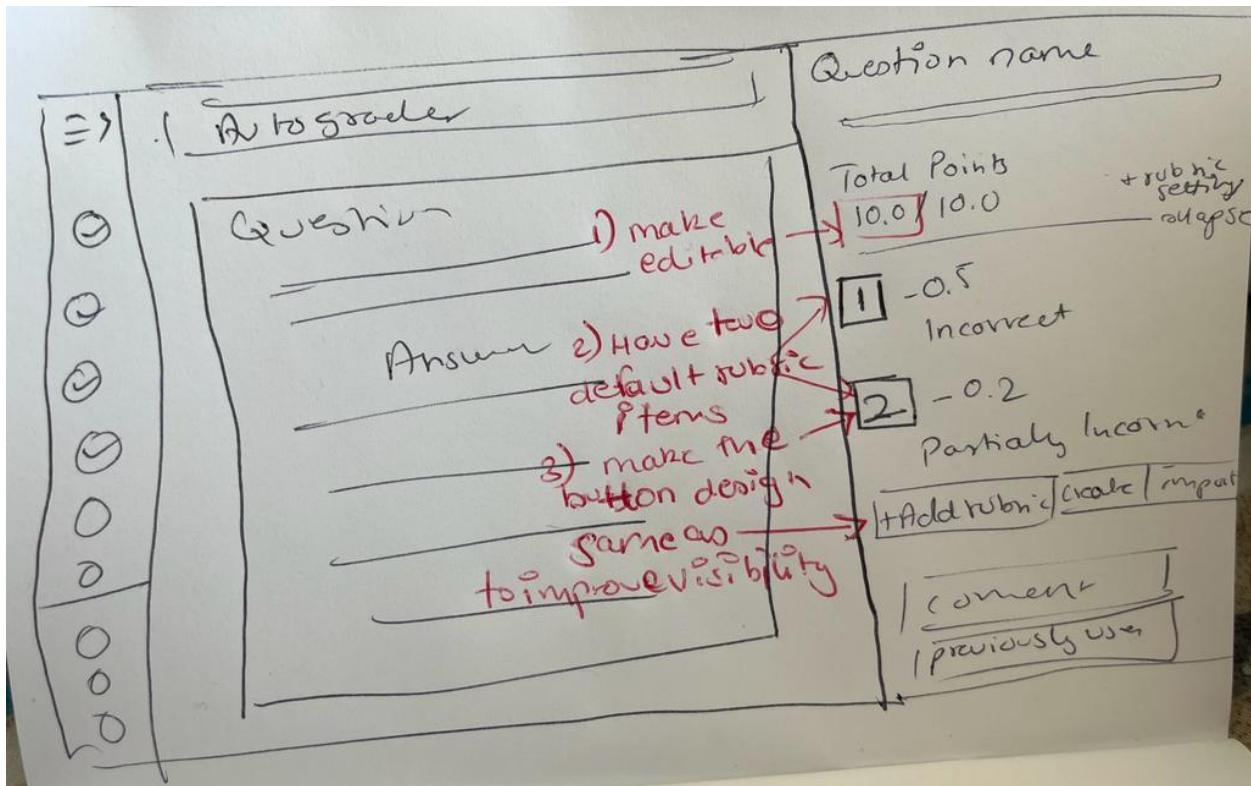
The screenshot shows the Gradescope interface for managing submissions. On the left, there's a sidebar with options like 'Edit Outline', 'Manage Scans', 'Manage Submissions' (which is selected), 'Grade Submissions', 'Review Grades', 'Regrade Requests', 'Statistics', and 'Settings'. The main area is titled 'Manage Submissions' and shows a list of students with their submission status and grades. A modal window titled 'Upload Submission' is open, prompting the user to 'Upload a submission for a student.' It has a dropdown menu set to 'Hilda Nguyen'. Below it, there's a warning message: '⚠ This student already has a submission. Uploading a new submission will supersede their old submission.' Underneath, there's a 'SUBMISSION PDF' section with a file input field labeled 'Please select a file' and a 'Select file' button. At the bottom of the modal are 'Upload' and 'Cancel' buttons. The background shows other student entries: Rose Perez (Automatically Assigned, 0% graded), Sherri Johnson (0% graded), and others.

- A. This interface is used to upload another submission to be graded. By selecting the name of the user you can upload their assignments. The interface gives a warning when you select a user to upload the submission but they already have an existing submission.
- B. Nielsen's heuristics being followed is
 - a. Visibility of System Status
 - b. Error Prevention
- C. The first heuristic that is satisfied is 'Visibility of System Status' because it shows whether a user has uploaded a submission or not. The second heuristic that is satisfied is 'Error Prevention' because it shows a warning when the user tries to submit an assignment for someone who already has one submitted. It warns them that if they upload a new submission the old one will be replaced.

Q3

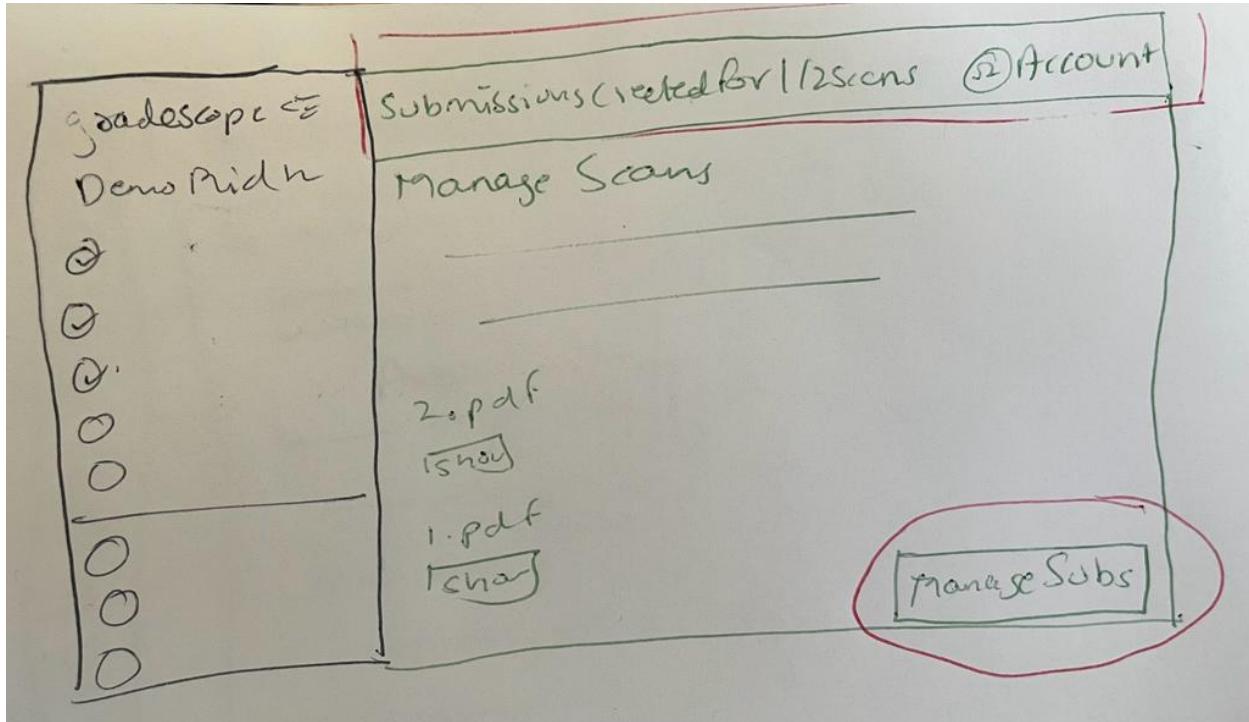
3.1

I would suggest changes to problem 1.1 wherein the interface to give points is unintuitive. The problem is a user would rather grade directly by clicking on the grade then enter a rubric for each grade they want to give. I would make the visible grades to be editable and to highlight the rubric feature I would add two default rubrics. Also, I would improve the design for the numbered rubric button to look more like an action button since it looks more like bullet points than a button.



3.2

I would suggest changes to solve problem 1.2 wherein the interface uses a bottom bar. I would suggest moving the bar to the top. The top bar would consist of account information, and user progress/user actions but the CTA to go next would remain at the bottom. The pane at the top is more visible, accessible and blends in with the rest of the interface.



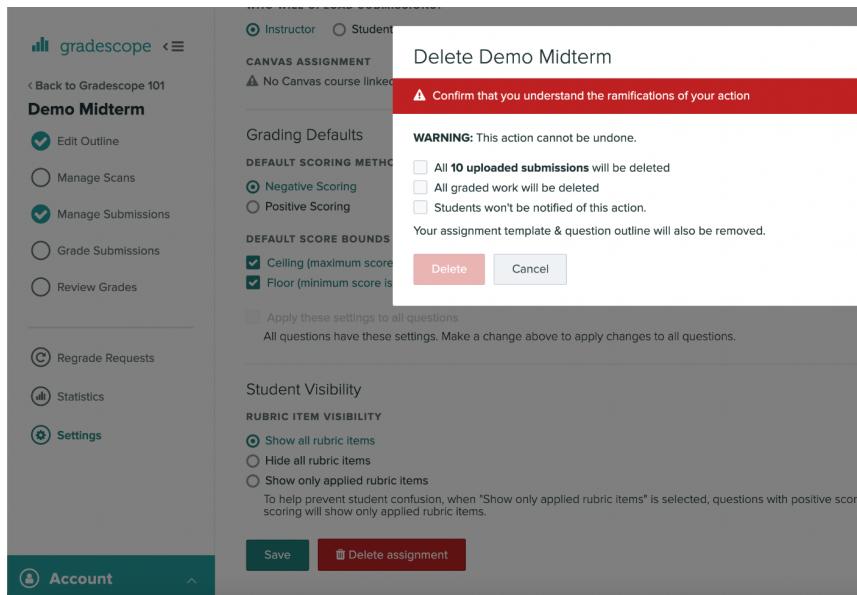
Reflection on Heuristic Evaluation as a method

1. According to me, I would start by going through the interface one CTA at a time. Each CTA will lead you through the interface. Before clicking on a button or navigation note down your expectation of the next view. After clicking on the button check if the description of the button or navigation was intuitive by comparing it with your noted expectation. After every action, you will reach a page that might have multiple paths for you to take. Explore one path till it reaches the end. Once in the end, go back a step and explore the rest of the paths and so on. This will help you navigate the entire interface and you will understand how easy is it to undo or navigate back into the interface. For the first time that you explore a page write down the things that you did not comprehend or found to be unintuitive. After you have completely explored the product, I would suggest coming back to it in a couple of days to repeat the process and write down the unintuitive parts. Repeat this 2-3 times. Then compare the notes of each iteration and see which parts caused the most obstacles; this can include errors, weak interface design that causes confusion, misinformation, and faulty assumptions by the designer. This will help in evaluating the severity of each problem, the more repetitive the problem the more severe it is. The rest of the problems that you ran into for the first time might not be as severe but need to be noted since they can slow down the learning of the user. The severity of this can be decided on the basis of how much time it took you to understand that particular feature. Further, observing the things that you did not notice the first time around also matters, since it identifies the UI gap. For each problem you encounter evaluate Jakob Nielsen's Heuristics being violated and try thinking about what course of action can fix the problem and close the communication gap between the user and interface action.
2. Heuristic design evaluation might be an appropriate method in during the early-design and early testing stages of product development. Since for early mock-ups of design, it would be help to identify issues with the UI and will give an overview of the usability. During the early testing phase before we get user opinion, conducting heuristic evaluation by experts will help eliminate several UX issues that the users might engage with less. It will also eliminate the errors faced by users to get refined user feedback.
3. The strengths of heuristic evaluation are as follows
 - a) It helps in identifying the severity of the UX problem.
 - b) It identifies the learning curve for a product.
 - c) Identifies assumptions about user behavior knowledge by the designer.
4. The disadvantages of heuristic evaluation are as follows
 - a) Since the method generates results from the perspective of the evaluator it is possible that the evaluator misidentifies a problem and suggests a fix when it is not really required.

- b) Since the method uses experts it can miss out on problems that might be faced by new users.
5. Heuristic Evaluation generates feedback of the product from the perspective of the experts and Think-Aloud generates feedback of the product from the perspective of first-time end users. It is easier to spot the problems that a user might run into using Think-Aloud since the participants are first-time users as well. UX issues pertaining to user engagement are better gauged by the experts. Heuristic evaluation has more chance of misidentifying a problem than Think Aloud. To evaluate my product I would go with the Think-Aloud Protocol. Firstly, It would be cheaper and easier to recruit participants. Secondly, I would get a better sense of what the users want from an interface and what obstacles are they encountering when working towards their goals.

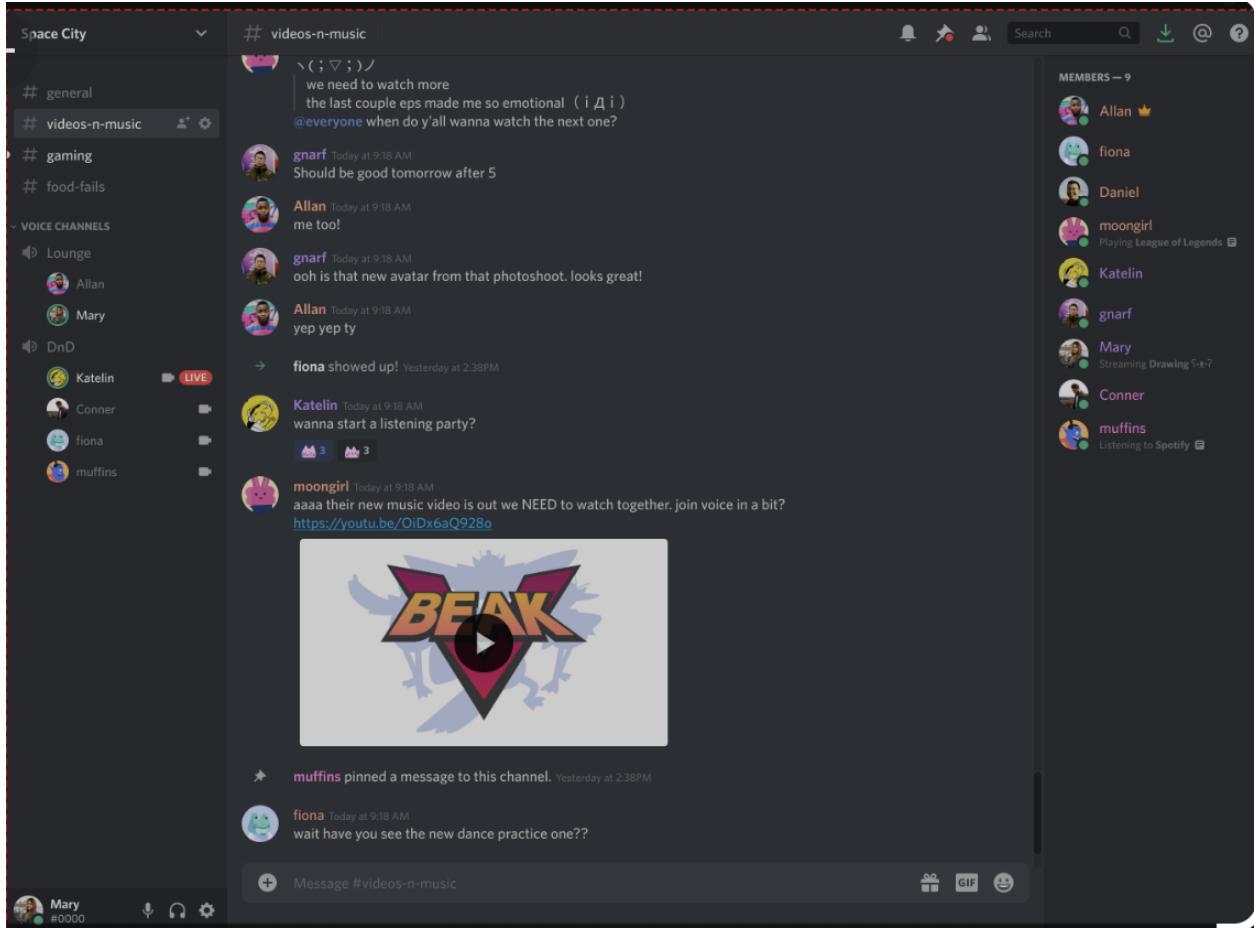
6. a) Warning for permanent actions

This heuristic warns a user when they are performing an action that is irreversible. For example, when an instructor deletes an assignment in grade scope they get a prompt stating the ramifications of this action (Image below). This is an important heuristic because if an interface takes an irreversible action without warning the user loses all their data. Further, it's possible that the user took that action by mistake and in turn lost all their progress and data which is now not recoverable.



b) Avoid Information overload

An interface should not overload the user with a lot of action buttons or text information. For example, Discord has a lot of actions and it becomes difficult to navigate. This heuristic is important because it would overwhelm and confuse the user. The user will be unable to take appropriate action and will cause fatigue.



7. Yes, I watched some youtube videos of heuristic evaluation being conducted. They were helpful as they gave me a good idea of how to go about this exercise.