Google Summer Of Code 2022 Proposal

Making the Contributor Dashboard UI Responsive

Harshvardhan Singh

Section 1: About You

What project are you applying for?

Making the Contributor Dashboard UI Responsive

Why are you interested in working with Oppia, and on your chosen project?

Oppia is on a noble mission to provide free, quality learning to students who are unable to receive a proper education. With this vision in mind, I wish to contribute to Oppia to make learning enjoyable for students all across the world. Working with Oppia has helped me step into the open-source community and has helped me to enhance my technical and interpersonal skills.

I am interested to work on this project as making the contributor dashboard responsive and mobile-friendly will greatly improve user experience and make it easier for contributors without easy access to laptops or desktops to submit translations without having to deal with UI related issues.

Prior experience

I started contributing to Oppia in October of 2021 and have since been a member of the LaCE quality team and have also recently joined the LaCE Android Team. I have opened various PRs related to revamping the UI of various components which has helped me to familiarize myself with parts of the codebase relevant to this project.

Contributions to Oppia:

- Implemented number input localization · Pull Request #14744
- Implemented the new UI for the results page · Pull Request #14193
- Implemented the new UI for the Learn Tab · Pull Request #14294
- Implemented new UI for the 'Get Involved' Tab · Pull Request #14345
- Changing the login overlay to have the new UI · Pull Request #14607

List of all my contributions to Oppia can be found here.

Project size

Medium (~175 hours)

Project timeframe

Extended Timeline: 13th June to 6th October

Contact info and timezone(s)

Ph. No: +91 9810679644

Email: sharshvardhan101@gmail.com

Timezone: Indian Standard Time (GMT +5:30)

Preferred Mode of Communication: Email, Google Hangouts, Whatsapp, Discord

Time commitment

I will be on a summer break from May to July, during this time I will be able to commit ~35 hrs/week. From 10th July onward, I will only be able to commit ~25 hrs/week. I may increase the hours based on the pace/requirements of the project.

Essential Prerequisites

Answer the following questions (for Oppia Web GSoC contributors):

• I am able to run a single backend test target on my machine. (Show a screenshot of a successful test.)

```
Tasks still muning.
once, blob sheth, jobs, topic_validation_jobs_test (started 89:15:27)

Executing: /home/harsh/Desktop/Oppia/oppia tools/google-cloud-sdk-364.8.8/google-cloud-sdk/platform/cloud-datastore-emulator_cloud_datastore-emulator_cache
| datastore| datastore-emulator_cache | maintain_cache | maintain
```

I am able to run all the frontend tests at once on my machine. (Show a screenshot
of a successful test.)

```
WARNING in ./node_modules/@angular/core/fesm2015/core.js 29751:15-102
Critical dependency: the request of a dependency is an expression
@ ./core/templates/combined-tests.spec.is
@ ./core/templates/combined-tests.spec.is
@ ./core/templates/combined-tests.spec.is
@ ./core/templates/combined-tests.spec.is

WARNING in ./node_modules/@angular/core/fesm2015/core.js 29739:15-36
System.import() is deprecated and will be removed soon. Use import() instead.
For more info visit https://webpack.js.org/quides/code-splitting/
@ ./core/templates/combined-tests.spec.is

### 104:15 24:17:46 94:68-80 95:58-70 992:47.71 995:13-45 996:12-28 1001:33-45 1001:12-28 1012:33-45 1021:15-70 1021:15-24 725:15-24 721:15-19 726:15-23 666:58-75 684:25-37 937:33-52 9

### 104:15 24:17:46 94:46-80 95:58-70 992:47.71 995:13-45 996:12-28 1001:33-45 1041:15-24 1024:57-46 1022:15-70 1029:31-42 1038:46-66 1045:54-66 1045:54-66 105:12-38 105:73-93 1104:35-66 105:12-38 105:73-93 1104:35-76 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 105:13-45 1
```

 I am able to run one suite of e2e tests on my machine. (Show a screenshot of a successful test.)

```
distance | New | Audition | Development | De
```

Other summer obligations

I will be having classes from 10th July and onwards. During this time I will be able to commit less time than usual.

Communication channels

I will be able to meet up with mentors on Google Meet/Zoom/Teams/Discord biweekly. I will try to update the mentors about my progress every other day (or as often as necessary) and will regularly be available on the platforms like Gmail, Hangouts, discord etc. I could be contacted via any of the modes mentioned above.

Section 2: Proposal Details

Problem Statement

Link to PRD	N/A		
Target Audience	Translation and Question Contributors on mobile devices. These are dedicated volunteers across the world proficient in their local language and English. They help to make Oppia accessible to people who come from places where English is not a primary language. However, some of them might not have access to a PC and also might not be technically well versed, and would like to contribute to Oppia using their mobile devices.		
Core User Need	 As a contributor, I need an easy way to seamlessly submit and/or review translations and practice questions on mobile devices through the Contributor Dashboard. Currently, the site is not optimized for smaller screens. This leads to issues like overlapping content, frequent zooming in and out, accidental clicking and other issues, which degrades the overall user experience. The menu labels on the contributor dashboard are currently only available in English, which may not be the primary language for all contributors. Therefore translating the menu labels on the dashboard would improve the experience for contributors. 		
What goals do we want the solution to achieve?	 Making the UI accessible on smaller screen sizes. Reduce the time taken to submit/review translations and practice questions. Prevent the need for unnecessary scrolling and zooming by making the dashboard responsive. Reduce the chance of accidental clicks on mobile devices. Make the UI intuitive to use. Allow contributors to easily sort through their contributions/tasks based on parameters like Recently Changed, Awaiting Approval etc. Translate menu labels on the contributor dashboard to make it more accessible for contributors who speak different languages. 		

Section 2.1: WHAT

This section enumerates the requirements that the technical solution outlined in "Section 2: HOW" must satisfy.

Key User Stories and Tasks

#	Title	User Story Description (role, goal, motivation)	Priority	List of tasks needed to achieve the goal (this is the "User Journey")	Links to mocks / prototypes, and/or PRD sections that spec out additional requirements.
1	Submit Translations	As a translation contributor I need to be easily able to submit	Must have	Contributors visit the Contributor Dashboard.	landing-page
	translations on device with smaller screens			Contributors will navigate to the "Translate Text" tab.	mock
				Contributor selects the language and the topic from the dropdown menu.	mock
			Contributors can then open a submission modal by clicking on the "Translate" button.	mock	
				The contributors can then enter the appropriate translation in the modal that appears.	mock
2	View submitted translations and reviews	1 ,	Must Have	The contributor visits the Contributor Dashboard.	landing-page
				Under the "My	mock

		mobile devices		Contributions" tab, the contributor can select "View Translation" from the "View" dropdown.	
3		contributor, I need to be able to easily submit questions on mobile	Must Have	The contributor visits the Contributor Dashboard.	landing-page
				Contributors will navigate to the "Submit Question" Tab.	mock
			Contributors can submit questions for a skill by clicking on the "Suggest Question" button.	mock	
				On clicking the "Suggest Question", a modal pops up which allows for the suggestion of a practice question.	mock
4	submitted contributor, I need an easy way to see my submitted questions	Must Have	The Contributor visits the Contributor Dashboard	landing-page	
		and reviews left on them on mobile devices		Under the "My Contributions" tab, the contributor can select "View Questions" from the "View" dropdown.	mock
5	Review Translations	As a translation reviewer, I need to be able to easily review	Must Have	The Contributor visits the Contributor	landing-page

		submitted translations on mobile devices		Dashboard	
				Under the "My Contributions" tab, the contributor can select "Review Translations" from the "View" dropdown to review submitted translations.	mocks
				The contributor can now select which translation to review.	mocks
6	Review Questions	As a question reviewer I need to be able to easily review submitted questions on mobile	Must Have	The Contributor visits the Contributor Dashboard	landing-page
		devices		Under the "My Contributions" tab, the contributor can select "Review Questions" from the "View" dropdown to review submitted questions.	mock
7	Sort items based on various parameters As a contributor , I need to be able to sort my submitted questions/translations based on parameters like Awaiting Approval, Approved, Revisions Requested, Recently Changed and Earliest Changed.	Should Have	The Contributor visits the Contributor Dashboard	landing-page	
			Contributors can use the "Sort by" dropdown to sort the items according to the parameter of their choosing.	mock	

Technical Requirements

Additions/Changes to Web Server Endpoint Contracts

No new additions/changes are needed to be made to the web server endpoints.

Calls to Web Server Endpoints

No new calls are needed to web server endpoints

Data Handling and Privacy

No new data is stored.

Section 2.2: HOW

Existing Status Quo

The existing Contributor Dashboard is currently designed with a focus on laptop/desktop users. Therefore the dashboard is not very responsive or intuitive to use on devices with smaller screens, hindering the users from easily contributing as they need to scroll and zoom in and out unnecessarily to accomplish their goals.

Solution Overview

General Dashboard UI

To make the Contributor Dashboard UI responsive and easily usable on mobile devices I will be taking the following steps:

- Use breakpoints (using media query) to differentiate mobile and desktop views.
- Use bootstrap classes like 'd-flex' (with appropriate breakpoints eg. sm, md etc.) for containers to improve responsiveness across multiple screen sizes.
- Use the relative size units (like vh, vw, %) instead of the absolute scale (px, pt), to prevent overlapping of content on a variety of screen sizes.
 - Relative units will be used to size containers and set margins.
 - Absolute units will be used to set text and content sizes.
- Use max-width and min-width to set size constraints (this has to be done as relative sizing is used)

• For the translation/content submission modal, the presence of the on-screen keyboard will be considered to ensure a smooth user experience.

Third-Party Libraries

No third-party libraries are needed.

"Service" Dependencies

No service dependencies are needed.

Impact on Other Oppia Teams

There would be no impact on other Oppia teams as no new features are added or removed. This is a UI change only.

Implementation Approach

Storage Model Layer Changes

The storage model layer will not be changed.

Domain Objects

The domain objects will not be changed.

User Flows (Controllers and Services)

The user flow will not be changed in this approach.

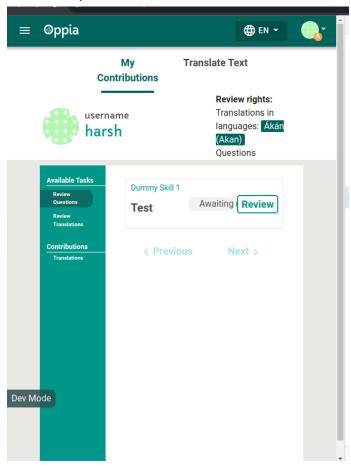
Web frontend changes

General Dashboard UI

The aim of this project is therefore to implement a responsive UI for the contributor dashboard page and related user flows, based on these <u>mid-fidelity</u> and <u>high-fidelity</u> mocks.

The CSS will be made responsive by using a breakpoint at around 600px, where the desktop view is above 600px and the mobile view is less than 600px.

This breakpoint is chosen because below 600px the menu labels get clustered, the contribution selection sidebar gets too small to read comfortably and leaves too little space for the list-item component which leads to overlapping content in some cases. This breakpoint is set in the contributor-dashboard-page.component file.



Flexbox (along with relative sizing) will be extensively used with bootstrap classes (like d-md-flex, d-sm-flex) with appropriate breakpoints (md, or sm) to make every content container responsive on a variety of screen sizes.

Bootstrap classes will be used to size containers where the flex-direction will need to be changed according to the screen size. Bootstrap classes like d-sm-flex automatically change the flex direction below a certain screen size without the need for manually defining a media-query breakpoint.

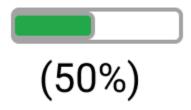
Native CSS features will be used for styling, padding, margin, alignment etc. as they provide much more control over content than bootstrap classes like mx, px etc. Native flexbox will be used where we don't have to change flex-direction based on available screen size.

However, every container will have its min-width, and max-width set to prevent issues on smaller and larger screen widths respectively.

List-item-component

Progress Indicator:

The current progress indicator (progress-bar) will be used to show translation/question progress on mobile view as well. However the percentages will only be denoted as integers (i.e. no decimals). The `floor' of the actual percentage will be used in this implementation.



(high-fidelity mocks)

Review Modal

The content boxes on the review modal will be vertically stacked on the mobile viewport to prevent clutter and give a cleaner look. Also, to prevent excessive scolling, the content boxes will be 'compacted by default' and could be extended by clicking the 'View More' button, and compacted again by clicking the same button that now reads 'View Less'.

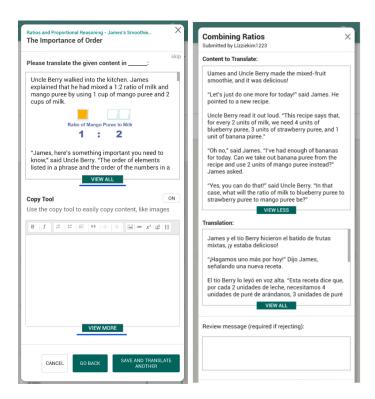
Translation Submission Modal

The submission modal will be offset towards the top of the screen to make sure the input fields are not obscured by the on-screen keyboard that pops up on mobile devices. The modal will be scrollable to allow users to navigate to different 'sections' of the submission modal. The UI of the modal will be updated according to these mocks.

Additionally, the 'View All' and 'View More' buttons will need to be added to the 'content'/'submission containers which will hide some content to give a cleaner look to the modal UI. The user could then click on the button to reveal more content (click the 'View Less' button to hide it again). The 'hidden' status will be kept track of by using two

variables namely 'isContentCompacted' for the 'content container' and 'isEditorCompacted' for the 'input container'. The 'compacting/expanding' actions will be achieved by altering the height of the container depending on the 'hidden status' of the container. These containers would still be scrollable even if they are in the 'compacted' mode.

A demo for the same can be found here: Demo



Documentation changes

No documentation changes are required as it is a UI-only change.

Testing Plan

E2e testing plan

The current e2e tests will be edited to test the contributor workflows on mobile viewports.

This will be done by using if-else blocks, where the screen-size will be used to decide the steps that would need to be followed on desktop or on mobile to test a given workflow.

```
let width = (await browser.manage().window().getSize()).width;
if (width < breakpointForMobile) {
    // steps to excecute the action on mobile viewport
} else {
    // steps to execute the same action on desktop viewport
}</pre>
```

Also a new config file for protractor, named protractor-mobile.conf.js will be created which will contain arguments to run the test on a mobile viewport. This configuration will be very similar to <u>protractor.conf.js</u>, however the *browser.isMobile* variable will be set to true and the screen sizes will be changed from 1285x1000 to 600x1000 to simulate a mobile device.

To enable testing this workflow on Github Actions, a new workflow file (e2e_contributor_dashboard_mobile.yml) will be created which will run the e2e scripts with -mobile flag on actions.

Feature testing

Does this feature include non-trivial user-facing changes?

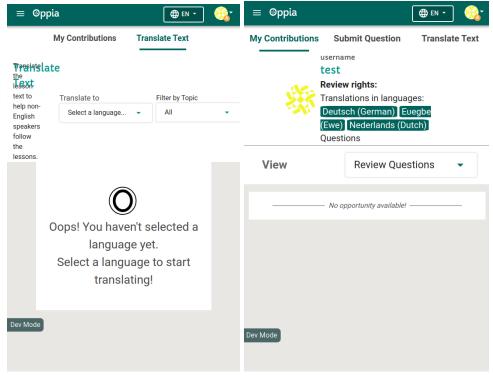
NO

Implementation Plan

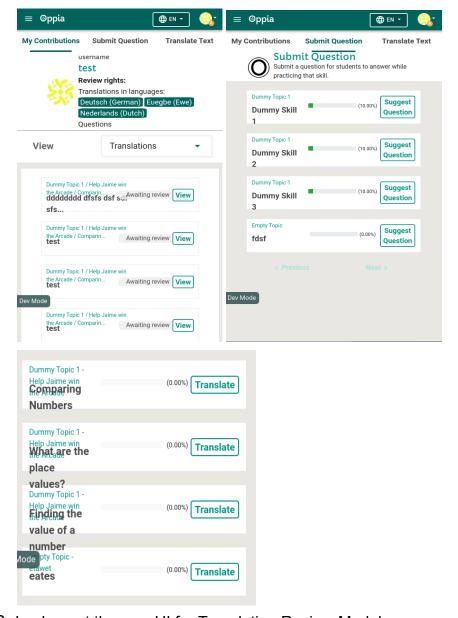
Milestone 1

- PR 1: Implement the mobile UI for dashboard navigation (breakpoints, responsiveness of pages)
 - The language and 'filter by topic' dropdown (and the header in general) is not responsive on mobile pages. The container containing the message 'Oops! You havent...' also overlaps with header which should not be the case.
 - The user info on the 'My Contributions' tab looks cluttered. This would be fixed according to this mock.
 - The breakpoints for all the tabs i.e. 'My Contributions', 'Submit Questions' and the 'Translate Text' tabs have different breakpoints which could lead to a lot of confusion on certain screen sizes where some tabs may in the

mobile view while others may be in the desktop view. Therefore to prevent this, a common breakpoint will be chosen for all the tabs.



- PR 2: Implement the new UI for The Contributions, Translate Text and the Submission tabs including the UI for list and list-item components
 - The list items on the 'My Contributions' tab are not responsive, are cluttered with information, and the text overlaps a lot. To fix this, a clear separation will be made between the text-part and the status part. Also, the view button will be removed on the mobile view only, according to these mocks. Longer text and topic names will be truncated to prevent a cluttered look and any overlapping.
 - Similar issues arise with list items on the 'Translate Text' and the 'Submit Question" tabs.



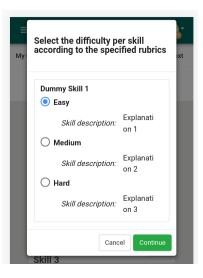
- PR 3: Implement the new UI for Translation Review Modal
 - The containers on the view translation modal (original text and translated text) modals appear too small on mobile and the text within them overlaps with the scroll bar. This modal will be overhauled according to these mocks.
 - On the review tab, along with the issues listed in the previous point, the buttons on the bottom extend out of the modal and the close icon on the top right seems too close to the edge of the modal. <u>These mocks</u> will be used for updating this modal.



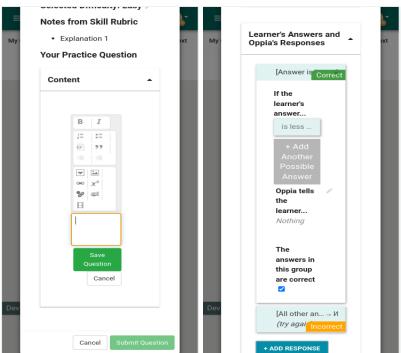
- PR 4: Implement the new UI for Question Review Modal
 - The close icon on the top right of the question review modal has a much larger 'hitbox' which causes the modal to close even if the user clicks in the general area of the icon (not on it). This can lead to accidental closing of the modal, leading to confusion and possibly, loss of work.

Milestone 2

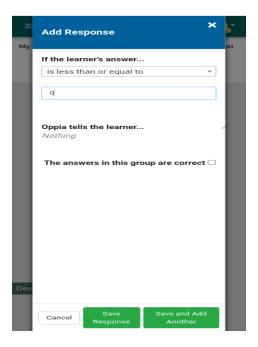
- PR 1: Implement the new UI for question submission modal and related workflows
 - The question submission workflow will follow these mocks.
 - The text wrapping on the difficulty selection modal for the skill description is off. This will be fixed according to <u>these mocks</u>.



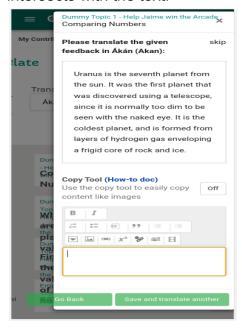
 The rich text editor (along with everything else) on the question creation page is too narrow (and the 'Save Question' and 'Cancel' buttons are too close to each other, which can lead to accidental clicking of the wrong button.



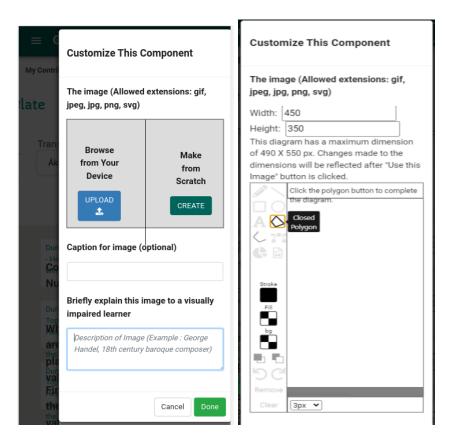
 The pencil icon linked to 'Oppia tells the learner..' is far away to the right and also overlaps with the edge of the modal and is barely visible. This will be fixed by bringing the icon closer to the text.



- PR 2: Implement new UI for translation submission modal and related workflows
 - The translation submission workflow will follow: Mocks
 - The translation submission modal is offset to the right and the 'Go back' button extends out of the modal. Also the close icon (on the top right) intersects with the text.



- On the image editor modal, the dividing line between upload and create extends beyond the bounding box.
- Also, the description for some items in the 'make from scratch' view overflow out of the designated box.



Milestone Table

Milestone 1: Implement a fully-responsive UI for the contributor dashboard landing page (this includes the overall navigation, the review workflow, and the views of the user's review/submission history).

After milestone 1 has been completed, get user feedback on the UI (particulary the 'View More/Less' buttons) and the workflow, and make any changes if necessary.

No.	Description of PR / action	Prereq PR numbers	Target Date for PR creation	Target date for PR to be merged
<u>1.</u>	Implement the mobile UI for dashboard navigation (breakpoints, responsiveness of pages)	None	20th June '22	27th June '22
<u>2.</u>	Implement the new UI for The Contributions, Translate Text and the Submission tabs including the	None	30th June '22	7th July '22

	UI for list and list-item components			
<u>3.</u>	Implement the new UI for translation Review Modal	None	8th July '22	15th July '22
<u>4.</u>	Implement the new UI for Question Review Modal	None	20th July '22	27th July '22

Milestone 2: Implement a fully-responsive UI for the translation and question submission pages (this includes both the list of opportunities and the submission workflow).

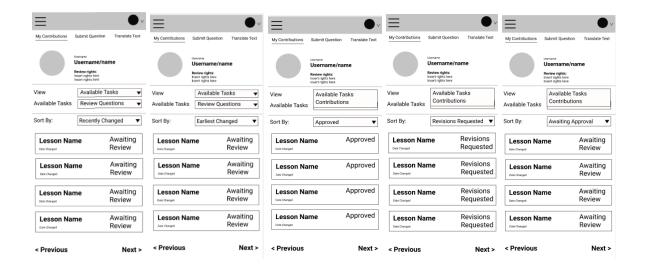
No.	Description of PR / action	Prereq PR numbers	Target Date for PR creation	Target date for PR to be merged
<u>1.</u>	Implement the new UI for question submission modal and related workflows	None	15th Aug' 22	25th Aug '22
<u>2.</u>	Implement the new UI for translation submission modal and related workflows	None	15th Sep' 22	22nd Sep '22

Future Work

Adding a "Sort by" Dropdown

This dropdown would show the following parameters:

- Approved
- Awaiting Approval
- Revisions Requested
- Recently Changed
- Earliest Changed



The parameters 'Approved', 'Awaiting Approval', and 'Revisions Requested' must only be visible when the view tab is set to either 'View Translations' or 'View Questions'. The parameters 'Recently Changed' and 'Earliest Changed' must only be visible when the view tab is set to either 'Review Translations' or 'Review Questions'.

This will **not** be handled in this project because this would require a backend change, as handling this client-side would lead to a large server response which might slow down the dashboard.