Better language support

Gerald Q. Maguire Jr.

KTH Royal Institute of Technology would like to have both Swedish and English used as parallel languages with the university.

One issue that was already addressed in e-mail to Martin Löfgren was using the KTH profile information about language preference to set the user's default UI language in Canvas when the student is first added to Canvas. This involves one call to the KTH profile API and an additional parameter to the Canvas API call that creates the user. This is described in Section

# Initial setting of Canvas UI language

Many students are having a problem when they first use Canvas, as the UI language that they face is Swedish by default (as someone set this as Canvas' system default language). However, the large numbers of Master's students that come to KTH do not know Swedish - so as a teacher I either have to:

1. set the course language to English (as this overrides the system default) [but then the student cannot change the language of the UI in the course to use their choice of language] or
2. provide information (via the front page of the course) to the students on how to use the Swedish language UI to change the language to their choice of language.

As the user's preferred language is set in their KTH profile, perhaps the script that E-lärande uses to create a user in Canvas (it does a POST /api/v1/accounts/:account\_id/users) could also set their language using the information from their profile (the KTH profile API has an endpoint /v1/default\_language/{username}), this would avoid a lot of problems for many people. This would only involve adding one additional parameter to the call to the Canvas API (user[locale]).

The instructions to new users when they get their KTH account should suggest that they edit their KTH profile to set their default language. It also means a small change to the description of what it means to select the user's default language in the Swagger documentation.

# Changing UI language

By default KTH’s Canvas has Swedish set as the user interface language

You can change this:

* Konto ≡ Account
* Inställningar ≡ Settings
* Redigera inställningar ≡ Edit settings
* Språk ≡ Language ---- choose the language you want

From Cymraeg, Dansk, Deutsch, English (Australia), English (Canada), English (United Kingdom), English (US), Español, Français, to فارسی, ,한국말, 日本語, 简体中文, 繁體中文.

* Uppdatera inställningar ≡ Update settings

# Language settings in a Canvas web page

Figure 3 shows the value of the ENV variable in the Javascript for the web page: <https://kth.instructure.com/courses/11> (node that part of the “body” has been omitted).

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| ENV = {"ASSET\_HOST":"https://du11hjcvx0uqb.cloudfront.net/br",  "active\_brand\_config\_json\_url":"https://du11hjcvx0uqb.cloudfront.net/br/dist/brandable\_css/21e433c3ceacfa94cfdb66c160f90fce/variables-8391c84da435c9cfceea2b2b3317ff66.json",  "url\_to\_what\_gets\_loaded\_inside\_the\_tinymce\_editor\_css":["https://du11hjcvx0uqb.cloudfront.net/br/dist/brandable\_css/21e433c3ceacfa94cfdb66c160f90fce/variables-8391c84da435c9cfceea2b2b3317ff66.css", "https://du11hjcvx0uqb.cloudfront.net/br/dist/brandable\_css/responsive\_layout\_normal\_contrast/bundles/what\_gets\_loaded\_inside\_the\_tinymce\_editor-a6c8337318.css"],  "url\_for\_high\_contrast\_tinymce\_editor\_css":["https://du11hjcvx0uqb.cloudfront.net/br/dist/brandable\_css/default/variables-high\_contrast-8391c84da435c9cfceea2b2b3317ff66.css", "https://du11hjcvx0uqb.cloudfront.net/br/dist/brandable\_css/responsive\_layout\_high\_contrast/bundles/what\_gets\_loaded\_inside\_the\_tinymce\_editor-a32bc07a6c.css"],  "current\_user\_id":"29",  "current\_user\_roles":["user", "student", "teacher", "admin"],  "current\_user\_types":["School admin", "School admin", "School admin", "School admin", "KTH Admin", "School admin", "School admin", "School admin", "School admin", "School admin", "School admin", "School admin", "School admin", "School admin", "School admin", "School admin"],  "current\_user\_disabled\_inbox":false,  "files\_domain":"cluster15.canvas-user-content.com",  "DOMAIN\_ROOT\_ACCOUNT\_ID":"87790000000000001",  "k12":false,  "use\_responsive\_layout":true,  "use\_rce\_enhancements":false,  "rce\_auto\_save":false,  "help\_link\_name":"Help",  "help\_link\_icon":"help",  "use\_high\_contrast":false,  "disable\_celebrations":false,  "disable\_keyboard\_shortcuts":false,  "LTI\_LAUNCH\_FRAME\_ALLOWANCES":["geolocation \*","microphone \*","camera \*","midi \*","encrypted-media \*","autoplay \*"],  "DEEP\_LINKING\_POST\_MESSAGE\_ORIGIN":"https://kth.instructure.com",  "DEEP\_LINKING\_LOGGING":null,  "SETTINGS":{"open\_registration":false,  "collapse\_global\_nav":true,  "show\_feedback\_link":true},  "DIRECT\_SHARE\_ENABLED":true,  "FEATURES":{"cc\_in\_rce\_video\_tray":true,  "featured\_help\_links":true,  "rce\_lti\_favorites":true,  "assignment\_bulk\_edit":true,  "responsive\_awareness":true,  "recent\_history":false,  "responsive\_misc":true,  "product\_tours":false,  "module\_dnd":true,  "files\_dnd":true,  "unpublished\_courses":true,  "bulk\_delete\_pages":true,  "canvas\_k6\_theme":false},  "current\_user":{"id":"29", "display\_name":"Gerald Quentin Maguire Jr", "avatar\_image\_url":"https://secure.gravatar.com/avatar/52e6e0ae2260166c91cd528ba0c72263?s=50\u0026d=http%3A%2F%2Fpeople.kth.se%2F%7Emaguire%2Fmaguire-march-2004-sq.jpg", "html\_url":"https://kth.instructure.com/about/29", "pronouns":null,"avatar\_is\_fallback":false},  "page\_view\_update\_url":"/page\_views/b7681e10-aa1d-485b-a649-eee80c1b7b8e?page\_view\_token=eyJ0eXAiOiJKV1QiLCJhbGciOiJIUzI1NiJ9.eyJpIjoiYjc2ODFlMTAtYWExZC00ODViLWE2NDktZWVlODBjMWI3YjhlIiwidSI6ODc3OTAwMDAwMDAwMDAwMjksImMiOiIyMDIwLTA5LTI3VDEyOjUwOjQ1Ljc5WiJ9.9lfZp7ndUs1R457GPtKFlPrs0VvPA75IJy8-mZFavmk",  "context\_asset\_string":"course\_11",  "ping\_url":"https://kth.instructure.com/api/v1/courses/11/ping",  "TIMEZONE":"Europe/Stockholm",  "CONTEXT\_TIMEZONE":"Europe/Stockholm",  "LOCALE":"en",  "BIGEASY\_LOCALE":"en\_US",  "FULLCALENDAR\_LOCALE":"en",  "MOMENT\_LOCALE":"en",  "INCOMPLETE\_REGISTRATION":null,  "USER\_EMAIL":"maguire@kth.se",  "badge\_counts":{"submissions":0},  "NEW\_USER\_TUTORIALS":{"is\_enabled":false},  "COURSE":{"id":"11",  "pages\_url":"https://kth.instructure.com/courses/11/pages",  "front\_page\_title":"Introduction to Chip's sandbox",  "default\_view":"wiki",  "is\_student":false,  "is\_instructor":true},  "WIKI\_RIGHTS":{"read":true,  "view\_unpublished\_items":true,  "create\_page":true,  "update\_page":true,  "delete\_page":true,  "update":true,  "publish\_page":true},  "PAGE\_RIGHTS":{"read":true,"update\_content":true,"read\_revisions":true,"create":true,"update":true,"delete":true},"DEFAULT\_EDITING\_ROLES":"teachers",  "WIKI\_PAGES\_PATH":"/courses/11/pages",  "COURSE\_HOME":true,  "COURSE\_TITLE":"Chip sandbox",  "WIKI\_PAGE":{"title":"Introduction to Chip's sandbox",  "created\_at":"2016-11-27T14:32:24+01:00",  "url":"introduction-to-chips-sandbox",  "editing\_roles":"teachers",  "page\_id":"6354",  "last\_edited\_by":{"id":"29",  "display\_name":"Gerald Quentin Maguire Jr",  "avatar\_image\_url":"https://secure.gravatar.com/avatar/52e6e0ae2260166c91cd528ba0c72263?s=50\u0026d=http%3A%2F%2Fpeople.kth.se%2F%7Emaguire%2Fmaguire-march-2004-sq.jpg",  "html\_url":"https://kth.instructure.com/courses/11/users/29",  "pronouns":null},  "published":true,  "hide\_from\_students":false,  "front\_page":true,  "html\_url":"https://kth.instructure.com/courses/11/pages/introduction-to-chips-sandbox",  "todo\_date":null,  "updated\_at":"2020-07-31T12:18:45+02:00",  "locked\_for\_user":false,  "body":"\u003cp\u003eThe contents of this sandbox are  …  [with examples for Windows 10 and Linux]\u003c/span\u003e\u003c/li\u003e\r\n\u003c/ul\u003e"},  "WIKI\_PAGE\_REVISION":"20",  "WIKI\_PAGE\_SHOW\_PATH":"/courses/11/pages/introduction-to-chips-sandbox",  "WIKI\_PAGE\_EDIT\_PATH":"/courses/11/pages/introduction-to-chips-sandbox/edit",  "WIKI\_PAGE\_HISTORY\_PATH":"/courses/11/pages/introduction-to-chips-sandbox/revisions",  "COURSE\_ID":"11",  "MODULES\_PATH":"/courses/11/modules",  "notices":[],  "active\_context\_tab":"home"}; |

Figure : ENV variable in the Javascript for the web page: <https://kth.instructure.com/courses/11> (formatted for improved readability)

Figure 2 shows part of the ENV variable shown in Figure 1 focusing on the timezone and locale.

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| "TIMEZONE":"Europe/Stockholm",  "CONTEXT\_TIMEZONE":"Europe/Stockholm",  "LOCALE":"en",  "BIGEASY\_LOCALE":"en\_US",  "FULLCALENDAR\_LOCALE":"en",  "MOMENT\_LOCALE":"en", |

Figure : Part of the ENV variable shown in Figure 1

Figure 3 shows the Canvas source code that sets the values shown in Figure 2 in the Javascript ENV variable for a page. We will refer to these as environment variables in the rest of this text.

|  |
| --- |
| @js\_env[:TIMEZONE] = Time.zone.tzinfo.identifier if !@js\_env[:TIMEZONE]  @js\_env[:CONTEXT\_TIMEZONE] = @context.time\_zone.tzinfo.identifier if !@js\_env[:CONTEXT\_TIMEZONE] && @context.respond\_to?(:time\_zone) && @context.time\_zone.present?  unless @js\_env[:LOCALE]  I18n.set\_locale\_with\_localizer  @js\_env[:LOCALE] = I18n.locale.to\_s  @js\_env[:BIGEASY\_LOCALE] = I18n.bigeasy\_locale  @js\_env[:FULLCALENDAR\_LOCALE] = I18n.fullcalendar\_locale  @js\_env[:MOMENT\_LOCALE] = I18n.moment\_locale  end  @js\_env[:lolcalize] = true if ENV['LOLCALIZE'] |

Figure : Code in Canvas’ app/controllers/application\_controller.rb that sets the values of the Javascript ENV variable.

What do these environment variables? Table 1 gives a brief description of each of them (note that part of the understanding of these is derived from the comment of Simon Williams (simonista) on 20 June 2018 in <https://github.com/instructure/canvas-lms/issues/1314> ).

Table : Description of the variables

|  |  |
| --- | --- |
| "LOCALE":"en" | This is the language used by **i18n** functions to translated values to the language of the current locale. |
| "BIGEASY\_LOCALE":"en\_US" | This locale information is used to dealing with timezones, see: <https://github.com/bigeasy/timezone> |
| "FULLCALENDAR\_LOCALE":"en" | Used in app/coffeescripts/calendar/ CalendarDefaults.js to set the lang value used for timeFormat and columnFormat in the calendar |
| "MOMENT\_LOCALE":"en" | This locale information is used with <https://momentjs.com/> for dealing with dates and times |

# The global navigation menu

Figure 4 shows the global navigation menu, Figure 5 shows the expand global navigation button that results in the menu with icons and text as shown in Figure 6. Figure 7 shows the underlying HTML corresponding to this menu.

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Figure : Global navigation menu

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Figure : Expand global navigation menu

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|  |

Figure : Expanded global navigation menu

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| --- |
| <ul id="menu" class="ic-app-header\_\_menu-list">  <li class="menu-item ic-app-header\_\_menu-list-item ">  <a id="global\_nav\_profile\_link" role="button" href="/profile" class="ic-app-header\_\_menu-list-link">  <div class="menu-item-icon-container">  <div aria-hidden="true" class="fs-exclude ic-avatar ">  <img src="https://secure.gravatar.com/avatar/52e6e0ae2260166c91cd528ba0c72263?s=50&amp;d=http%3A%2F%2Fpeople.kth.se%2F%7Emaguire%2Fmaguire-march-2004-sq.jpg" alt="Gerald Quentin Maguire Jr">  </div>  <span class="menu-item\_\_badge"></span>  </div>  <div class="menu-item\_\_text">  Account  </div>  </a>  </li>  <li class="menu-item ic-app-header\_\_menu-list-item ">  <a id="global\_nav\_accounts\_link" role="button" href="/accounts" class="ic-app-header\_\_menu-list-link">  <div class="menu-item-icon-container" aria-hidden="true">  <svg xmlns="http://www.w3.org/2000/svg" xmlns:xlink="http://www.w3.org/1999/xlink" version="1.1" class="ic-icon-svg ic-icon-svg--accounts" x="0" y="0" viewBox="0 0 200 224" enable-background="new 0 0 200 224" xml:space="preserve"><path d="M87,83.47a9.53,9.53,0,1,1-9.53-9.53A9.53,9.53,0,0,1,87,83.47m35.26,62.28h17.29V128.45l-40-40,.44-4.19c.11-13.94-10.3-24.37-23.1-24.37a23.22,23.22,0,0,0,0,46.44l5.31-.6,7.18,7.17h16.86V126h13.14V142.9Zm30,12.71H117l-10.3-10.29v-9.43H93.57V125.59H84.16L77.58,119h-.65a35.93,35.93,0,1,1,35.92-35.92c0,.22,0,.43,0,.64l39.44,39.45ZM99.72,220.06a6.46,6.46,0,0,1-3-.78l-3.93-2.13c-34.84-18.92-82.55-44.81-82.55-99.89V49.59a6.37,6.37,0,0,1,3.65-5.76L97,4.66a6.28,6.28,0,0,1,5.4,0L185.6,43.83a6.37,6.37,0,0,1,3.65,5.76v67.67c0,55.08-47.72,81-82.55,99.89l-3.93,2.13A6.47,6.47,0,0,1,99.72,220.06ZM22.91,53.62v63.64c0,47.52,42.09,70.37,75.9,88.73l.9.48.91-.48c33.81-18.36,75.9-41.21,75.9-88.73V53.62L99.72,17.43Z"></path></svg>  </div>  <div class="menu-item\_\_text">  Admin  </div>  </a>  </li>  <li class="ic-app-header\_\_menu-list-item ">  <a id="global\_nav\_dashboard\_link" href="https://kth.instructure.com/" class="ic-app-header\_\_menu-list-link">  <div class="menu-item-icon-container" aria-hidden="true">  <svg xmlns="http://www.w3.org/2000/svg" class="ic-icon-svg ic-icon-svg--dashboard" version="1.1" x="0" y="0" viewBox="0 0 280 200" enable-background="new 0 0 280 200" xml:space="preserve"><path d="M273.09,180.75H197.47V164.47h62.62A122.16,122.16,0,1,0,17.85,142a124,124,0,0,0,2,22.51H90.18v16.29H6.89l-1.5-6.22A138.51,138.51,0,0,1,1.57,142C1.57,65.64,63.67,3.53,140,3.53S278.43,65.64,278.43,142a137.67,137.67,0,0,1-3.84,32.57ZM66.49,87.63,50.24,71.38,61.75,59.86,78,76.12Zm147,0L202,76.12l16.25-16.25,11.51,11.51ZM131.85,53.82v-23h16.29v23Zm15.63,142.3a31.71,31.71,0,0,1-28-16.81c-6.4-12.08-15.73-72.29-17.54-84.25a8.15,8.15,0,0,1,13.58-7.2c8.88,8.21,53.48,49.72,59.88,61.81a31.61,31.61,0,0,1-27.9,46.45ZM121.81,116.2c4.17,24.56,9.23,50.21,12,55.49A15.35,15.35,0,1,0,161,157.3C158.18,152,139.79,133.44,121.81,116.2Z"></path></svg>  </div>  <div class="menu-item\_\_text">Dashboard</div>  </a>  </li>  <li class="menu-item ic-app-header\_\_menu-list-item ic-app-header\_\_menu-list-item--active">  <a id="global\_nav\_courses\_link" role="button" href="/courses" class="ic-app-header\_\_menu-list-link">  <div class="menu-item-icon-container" aria-hidden="true">  <svg xmlns="http://www.w3.org/2000/svg" class="ic-icon-svg ic-icon-svg--courses" version="1.1" x="0" y="0" viewBox="0 0 280 259" enable-background="new 0 0 280 259" xml:space="preserve"><path d="M73.31,198c-11.93,0-22.22,8-24,18.73a26.67,26.67,0,0,0-.3,3.63v.3a22,22,0,0,0,5.44,14.65,22.47,22.47,0,0,0,17.22,8H200V228.19h-134V213.08H200V198Zm21-105.74h90.64V62H94.3ZM79.19,107.34V46.92H200v60.42Zm7.55,30.21V122.45H192.49v15.11ZM71.65,16.71A22.72,22.72,0,0,0,49,39.36V190.88a41.12,41.12,0,0,1,24.32-8h157V16.71ZM33.88,39.36A37.78,37.78,0,0,1,71.65,1.6H245.36V198H215.15v45.32h22.66V258.4H71.65a37.85,37.85,0,0,1-37.76-37.76Z"></path></svg>  </div>  <div class="menu-item\_\_text">  Courses  </div>  </a>  </li>  <li class="menu-item ic-app-header\_\_menu-list-item ">  <a id="global\_nav\_calendar\_link" href="/calendar" class="ic-app-header\_\_menu-list-link">  <div class="menu-item-icon-container" aria-hidden="true">  <svg xmlns="http://www.w3.org/2000/svg" class="ic-icon-svg ic-icon-svg--calendar" version="1.1" x="0" y="0" viewBox="0 0 280 280" enable-background="new 0 0 280 280" xml:space="preserve"><path d="M197.07,213.38h16.31V197.07H197.07Zm-16.31,16.31V180.76h48.92v48.92Zm-48.92-16.31h16.31V197.07H131.85Zm-16.31,16.31V180.76h48.92v48.92ZM66.62,213.38H82.93V197.07H66.62ZM50.32,229.68V180.76H99.24v48.92Zm146.75-81.53h16.31V131.85H197.07Zm-16.31,16.31V115.54h48.92v48.92Zm-48.92-16.31h16.31V131.85H131.85Zm-16.31,16.31V115.54h48.92v48.92ZM66.62,148.15H82.93V131.85H66.62ZM50.32,164.46V115.54H99.24v48.92ZM34,262.29H246V82.93H34ZM246,66.62V42.16A8.17,8.17,0,0,0,237.84,34H213.38v8.15a8.15,8.15,0,1,1-16.31,0V34H82.93v8.15a8.15,8.15,0,0,1-16.31,0V34H42.16A8.17,8.17,0,0,0,34,42.16V66.62Zm-8.15-48.92a24.49,24.49,0,0,1,24.46,24.46V278.6H17.71V42.16A24.49,24.49,0,0,1,42.16,17.71H66.62V9.55a8.15,8.15,0,0,1,16.31,0v8.15H197.07V9.55a8.15,8.15,0,1,1,16.31,0v8.15Z"></path></svg>  </div>  <div class="menu-item\_\_text">  Calendar  </div>  </a>  </li>  <li class="menu-item ic-app-header\_\_menu-list-item ">  <a id="global\_nav\_conversations\_link" href="/conversations" class="ic-app-header\_\_menu-list-link">  <div class="menu-item-icon-container">  <span aria-hidden="true"><svg xmlns="http://www.w3.org/2000/svg" class="ic-icon-svg ic-icon-svg--inbox" version="1.1" x="0" y="0" viewBox="0 0 280 280" enable-background="new 0 0 280 280" xml:space="preserve"><path d="M91.72,120.75h96.56V104.65H91.72Zm0,48.28h80.47V152.94H91.72Zm0-96.56h80.47V56.37H91.72Zm160.94,34.88H228.52V10.78h-177v96.56H27.34A24.17,24.17,0,0,0,3.2,131.48V244.14a24.17,24.17,0,0,0,24.14,24.14H252.66a24.17,24.17,0,0,0,24.14-24.14V131.48A24.17,24.17,0,0,0,252.66,107.34Zm0,16.09a8.06,8.06,0,0,1,8,8v51.77l-32.19,19.31V123.44ZM67.58,203.91v-177H212.42v177ZM27.34,123.44H51.48v79.13L19.29,183.26V131.48A8.06,8.06,0,0,1,27.34,123.44ZM252.66,252.19H27.34a8.06,8.06,0,0,1-8-8V202l30,18H230.75l30-18v42.12A8.06,8.06,0,0,1,252.66,252.19Z"></path></svg>  </span>  <span class="menu-item\_\_badge"></span>  </div>  <div class="menu-item\_\_text">  Inbox  </div>  </a>  </li>    <li id="context\_external\_tool\_20\_menu\_item" class="globalNavExternalTool menu-item ic-app-header\_\_menu-list-item">  <a class="ic-app-header\_\_menu-list-link" href="/accounts/1/external\_tools/20?launch\_type=global\_navigation">  <svg version="1.1" class="ic-icon-svg ic-icon-svg--lti menu-item\_\_icon" xmlns="http://www.w3.org/2000/svg" xmlns:xlink="http://www.w3.org/1999/xlink" viewBox="0 0 64 64">  <path d="M9.4 32c0-7.8 6.5-14.3 14.4-14.3h11.7v-9.4h-11.8c-13.1 0-23.7 10.6-23.7 23.7s10.7 23.7 23.7 23.7h11.7v-9.4h-11.7c-7.9 0-14.3-6.5-14.3-14.3z m54.6 0l-19.1-17v11.3h-20.2c-3.1 0-5.6 2.5-5.6 5.6s2.5 5.6 5.6 5.7h20.2v11.2l19.1-16.8z"></path>  </svg>  <div class="menu-item\_\_text">  Commons  </div>  </a>  </li>  <li class="ic-app-header\_\_menu-list-item">  <a id="global\_nav\_help\_link" role="button" class="ic-app-header\_\_menu-list-link" data-track-category="help system" data-track-label="help button" href="http://help.instructure.com/">  <div class="menu-item-icon-container" role="presentation">  <svg xmlns="http://www.w3.org/2000/svg" class="ic-icon-svg menu-item\_\_icon svg-icon-help" version="1.1" x="0" y="0" viewBox="0 0 200 200" enable-background="new 0 0 200 200" xml:space="preserve" fill="currentColor"><path d="M100,127.88A11.15,11.15,0,1,0,111.16,139,11.16,11.16,0,0,0,100,127.88Zm8.82-88.08a33.19,33.19,0,0,1,23.5,23.5,33.54,33.54,0,0,1-24,41.23,3.4,3.4,0,0,0-2.74,3.15v9.06H94.42v-9.06a14.57,14.57,0,0,1,11.13-14,22.43,22.43,0,0,0,13.66-10.27,22.73,22.73,0,0,0,2.31-17.37A21.92,21.92,0,0,0,106,50.59a22.67,22.67,0,0,0-19.68,3.88,22.18,22.18,0,0,0-8.65,17.64H66.54a33.25,33.25,0,0,1,13-26.47A33.72,33.72,0,0,1,108.82,39.8ZM100,5.2A94.8,94.8,0,1,0,194.8,100,94.91,94.91,0,0,0,100,5.2m0,178.45A83.65,83.65,0,1,1,183.65,100,83.73,83.73,0,0,1,100,183.65" transform="translate(-5.2 -5.2)"></path></svg>  </div>  <div class="menu-item\_\_text">  Help  </div>  </a> </li>  </ul> |

Figure : Buttons in the global navigation menu

Figure 8 shows the division for the Global Navigation menu and the <UL> containing the menu items (these were shown above).

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| <div role="region" class="ic-app-header\_\_main-navigation" aria-label="Global Navigation">  <div class="ic-app-header\_\_logomark-container">  <a href="https://kth.instructure.com/" class="ic-app-header\_\_logomark">  <span class="screenreader-only">Dashboard</span>  </a>  </div>  <ul id="menu" class="ic-app-header\_\_menu-list"> |

Figure : HTML for the global navigation menu is inside this division and class

# Viewing the current language in the global navigation menu

Figure 9 shows the global navigation menu in my Canvas instance running in a VM. To this menu we want to add a button labeled with the current language.

Figure 10 shows the code to do the addition of a button labeled with the current language. This code was inspired by the menu addition done by kenneth.larsen@usu.edu and presented again by mjennings in <https://community.canvaslms.com/t5/Question-Forum/Adding-custom-menu-items/m-p/55077>. The results are shown in Figure 11 (in this case the current LOCALE is “en”). The details of the added button are shown in Figure 12. Where the href of the link is "<http://www.kth.se>", the id of the link is "global\_nav\_locale", the icon is the small settings icon (id="global\_nav\_locale"), and the text below the icon is set from ENV.LOCALE. Note that clicking this link just takes you to the KTH main page. This is of course not the semantics that we want, so we will have to add some code to do something useful.

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Figure : Global navigation menu in my VM of Canvas

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| /\*\*  // @name augement navigation buttons  // @namespace https://github.com/gqmaguirejr/E-learning  // @author Gerald Q. Maguire Jr. <maguire@kth.se>  // @description Add a button labeled with the current language  \*\*/  (function() {  'use strict';  onPage(/\/courses/, function() {  addMenuItem("http://www.kth.se", 'icon-settings-2')  });  function onPage(regex, fn) {  if (location.pathname.match(regex)) fn();  }  function addMenuItem(linkhref, icon) {  var iconHtml = '',  itemHtml  if (icon !== '') {  // If it is a Canvas icon  if (icon.indexOf('icon') === 0) {  iconHtml = '<div class="menu-item-icon-container" role="presentation"><i class="' + icon + ' custom\_menu\_list\_icon"></i></div>';  // for an svg or other image  } else if (icon !== '') {  iconHtml = '<div class="menu-item-icon-container" role="presentation">' + icon + '</div>';  }  }  // Build item html  itemHtml = '<li class="ic-app-header\_\_menu-list-item ">' +  ' <a id="global\_nav\_locale" href="' + linkhref + '" class="ic-app-header\_\_menu-list-link">' + iconHtml +  ' <div class="menu-item\_\_text custom-menu-item\_\_text">' + ENV.LOCALE + '</div>' +  ' </a>' +  '</li>';  $('#menu').append(itemHtml);  }  })(); |

Figure : To add to the Global Navigation menu in Javascript

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Figure : After adding button

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| <li class="ic-app-header\_\_menu-list-item ">  <a id="global\_nav\_locale" href="http://www.kth.se" class="ic-app-header\_\_menu-list-link"><div class="menu-item-icon-container" role="presentation"><i class="icon-settings-2 custom\_menu\_list\_icon"></i></div>  <div class="menu-item\_\_text custom-menu-item\_\_text">en</div>  </a></li> |

Figure : New button, i.e. new menu item

# Adding the semantics to switch the language of the locale between English and Swedish

Figure 13 shows the results after adding the semantics to support changing the locale, when switching from the initial English, to Swedish, and back to English. Figure 14 shows the Javascript code to do this.

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| (a) English page | (b) Swedish page | (c) English page |

Figure : Switching from English to Swedish and back to English

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| function toggleLanguage() {  var user=$.getJSON('/api/v1/users/self',  function (data){ var currentLocale=data['locale'];  if (currentLocale == 'en') {  var newuser=$.post('/api/v1/users/self', {"\_method": 'PUT',  "user[locale]": "sv"})  }  else if (currentLocale == 'sv') {  var newuser=$.post('/api/v1/users/self', {"\_method": 'PUT',  "user[locale]": "en"})  }  }  )  location.reload();  return false;  }  (function() {  'use strict';  onPage(/\/courses/, function() {  addMenuItem("#", 'icon-settings-2')  });  function onPage(regex, fn) {  if (location.pathname.match(regex)) fn();  }  function addMenuItem(linkhref, icon) {  var iconHtml = '',  itemHtml  if (icon !== '') {  // If it is a Canvas icon  if (icon.indexOf('icon') === 0) {  iconHtml = '<div class="menu-item-icon-container" role="button" onclick="toggleLanguage();"><i class="' + icon + ' custom\_menu\_list\_icon"></i></div>';  // for an svg or other image  } else if (icon !== '') {  iconHtml = '<div class="menu-item-icon-container" role="button" onclick="toggleLanguage();">' + icon + '</div>';  }  }  // Build item html  itemHtml = '<li class="ic-app-header\_\_menu-list-item ">' +  ' <a id="global\_nav\_locale" href="' + linkhref + '" class="ic-app-header\_\_menu-list-link">' + iconHtml +  ' <div class="menu-item\_\_text custom-menu-item\_\_text">' + ENV.LOCALE + '</div>' +  ' </a>' +  '</li>';  $('#menu').append(itemHtml);  }  })(); |

Figure : Code to handle the semantics (edited to fit on a page)

# Mixed English and Swedish text

In order to have mixed English and Swedish content on a page I have used Canvas’ enhanceable\_content tabs class, as shown in Figure 15. This results in the page shown in Figure 16.

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| <p><span lang="en">Degree project for master students, advanced level, 30 credit points</span> (<span lang="sv">Examensarbete f&ouml;r masterstudenter, 30 hp</span>)</p>  <div class="enhanceable\_content tabs">  <ul>  <li lang="en"><a href="#fragment-1">English</a></li>  <li lang="sv"><a href="#fragment-2">P&aring; svenska</a></li>  </ul>  <div id="fragment-1">  <p lang="en">This information is for students that are going to participate in a degree project course at the Master's level.</p>  <p lang="en">Please read the information concerning the different degree project courses at <a title="Kurser/Courses" href="https://kth.instructure.com/courses/1586/pages/kurser-slash-courses" data-api-endpoint="https://kth.instructure.com/api/v1/courses/1586/pages/kurser-slash-courses" data-api-returntype="Page">Kurser/Courses</a>.</p>  <p lang="en">As a first step, a project&nbsp;proposal must be created and handed in. Templates for the project proposal can be found in&nbsp;<a title="Mallar/Templates" href="https://kth.instructure.com/courses/1586/pages/mallar-slash-templates" data-api-endpoint="https://kth.instructure.com/api/v1/courses/1586/pages/mallar-slash-templates" data-api-returntype="Page">Mallar/Templates</a>. The templates are in Swedish and English and the contents are the same irrespective of language&nbsp;<span>and degree project</span>.</p>  <p lang="en">The project proposal is used for assigning examiners and supervisors. The proposals are also used for evaluating the degree project&rsquo;s characteristics and scope. Hence, the project proposals serve as a basis for discussion. Even without a specific project, it is still possible to assign an examiner and a supervisor, thus students should hand in their project proposal to indicate their interest area(s). These interest areas are used to assign the most suitable examiner and/or supervisor.</p>  <p lang="en">Fill in the project proposal with available information. If any pieces of information are unknown, please indicate this in the project proposal. Hand in the project proposal by uploading the file via the <a title="Projekt Plan/Project plan" href="https://kth.instructure.com/courses/1586/assignments/4272" data-api-endpoint="https://kth.instructure.com/api/v1/courses/1586/assignments/4272" data-api-returntype="Assignment">Projekt Plan/Project plan&nbsp;</a>assignment.</p>  <p lang="en">A time ordered list of deliverables can be found under <a href="https://kth.instructure.com/courses/1586/assignments" data-api-endpoint="https://kth.instructure.com/api/v1/courses/1586/assignments" data-api-returntype="[Assignment]">Assignments</a>.</p>  </div>  <div id="fragment-2">  <p lang="sv">Denna information g&auml;ller f&ouml;r studenter som ska g&aring; examensarbetskurs.</p>  <p lang="sv">H&auml;r f&ouml;ljer information om examensarbete, p&aring; avancerad niv&aring;, f&ouml;r Civ. ingeng&ouml;rer, master med flera.</p>  <p lang="sv">L&auml;s informationen som r&ouml;r det examensarbete ni ska g&ouml;ra (se <a title="Kurser/Courses" href="https://kth.instructure.com/courses/1586/pages/kurser-slash-courses" data-api-endpoint="https://kth.instructure.com/api/v1/courses/1586/pages/kurser-slash-courses" data-api-returntype="Page">Kurser/Courses</a>).&nbsp; &nbsp;</p>  <p lang="sv">Oavsett examensarbete ska projektf&ouml;rslag uppr&auml;ttas och l&auml;mnas in. Mallar f&ouml;r projektf&ouml;rslag (tidigare kallat projektplan) finns att h&auml;mta i <a title="Mallar/Templates" href="https://kth.instructure.com/courses/1586/pages/mallar-slash-templates" data-api-endpoint="https://kth.instructure.com/api/v1/courses/1586/pages/mallar-slash-templates" data-api-returntype="Page">Mallar/Templates</a>. Mallarna &auml;r p&aring; svenska som engelska och har samma inneh&aring;ll, det vill s&auml;ga oavsett spr&aring;k och examensarbete.</p>  <p lang="sv">Projektf&ouml;rslagen anv&auml;nds f&ouml;r att tilldela examinator och handledare. F&ouml;rslagen &auml;r &auml;ven till f&ouml;r att bed&ouml;ma examensarbetets karakt&auml;r och omf&aring;ng. S&aring;ledes fungerar projektf&ouml;rslagen &auml;ven som diskussionsunderlag. &Auml;ven om projekt saknas, g&aring;r det att tilldela examinator och handledare, s&aring; alla studenter ska l&auml;mna in ett projektf&ouml;rslag. I dessa fall, sker tilldelning utifr&aring;n intresseomr&aring;den.</p>  <p lang="sv">Fyll i projektf&ouml;rslaget utifr&aring;n den information som finns att tillg&aring;. Om det finns oklarheter med examensarbetet, skriv det i projektf&ouml;rslaget. L&auml;mna in projektf&ouml;rslaget genom att ladda upp filen i <a title="Projekt Plan/Project plan" href="https://kth.instructure.com/courses/1586/assignments/4272" data-api-endpoint="https://kth.instructure.com/api/v1/courses/1586/assignments/4272" data-api-returntype="Assignment">Projekt Plan/Project plan</a>&nbsp;inl&auml;mning.</p>  <p lang="sv">En tid ordnad lista &ouml;ver delresultaten finns under <a href="https://kth.instructure.com/courses/1586/assignments" data-api-endpoint="https://kth.instructure.com/api/v1/courses/1586/assignments" data-api-returntype="[Assignment]">Uppgifter</a>.</p>  </div>  </div> |

Figure : HTML for mixed English and Swedish text

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Figure : Example of a mixed content page

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Figure : Contents when selecting the Swedish tab

If you switch the order of the lines near the top of the HTML from that shown in Figure 18 to Figure 19, then the Swedish text is show exposed as shown in Figure 20.

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| <div class="enhanceable\_content tabs">  <ul>  <li lang="en"><a href="#fragment-1">English</a></li>  <li lang="sv"><a href="#fragment-2">P&aring; svenska</a></li>  </ul> |

Figure : English first

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| --- |
| <div class="enhanceable\_content tabs">  <ul>  <li lang="sv"><a href="#fragment-2">P&aring; svenska</a></li>  <li lang="en"><a href="#fragment-1">English</a></li>  </ul> |

Figure : Swedish first

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Figure : Swedish first - shows the Swedish text tab contents first

However, if you have the browser console open when when loading this page you can see a jQueryUI warning, as shown in Figure 17 and the text is shown in Figure 18. So this solution will need some custom Javascript in the future to support it.

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Figure : Warning regarding using jQueryUI

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| instructure.js:132 Deprecated use of magic jQueryUI widget markup detected:  You're relying on undocumented functionality where Canvas makes jQueryUI widgets out of rich content that has the following class names: .dialog, .draggable, .resizable, .sortable, .tabs.  Canvas is moving away from jQueryUI for our own widgets and this behavior will go away. Rather than relying on the internals of Canvas's JavaScript, you should use your own custom JS file to do any such customizations. init [div.enhanceable\_content.tabs, prevObject: init(1), context: document, selector: ".user\_content.unenhanced:visible .enhanceable\_cont…dialog, .draggable, .resizable, .sortable, .tabs)"] |

Figure : Warning text as text

After reading the code at <https://code.jquery.com/ui/1.12.1/jquery-ui.js> , specifically the\_initialActive function with in jQuery UI Tabs 1.12.1 ()

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| \_initialActive: function() {  var active = this.options.active,  collapsible = this.options.collapsible,  locationHash = location.hash.substring( 1 );  if ( active === null ) {    // check the fragment identifier in the URL  if ( locationHash ) {  this.tabs.each( function( i, tab ) {  if ( $( tab ).attr( "aria-controls" ) === locationHash ) {  active = i;  return false;  }  } );  }  // Check for a tab marked active via a class  if ( active === null ) {  active = this.tabs.index( this.tabs.filter( ".ui-tabs-active" ) );  }  // No active tab, set to false  if ( active === null || active === -1 ) {  active = this.tabs.length ? 0 : false;  }  }  // Handle numbers: negative, out of range  if ( active !== false ) {  active = this.tabs.index( this.tabs.eq( active ) );  if ( active === -1 ) {  active = collapsible ? false : 0;  }  }    // Don't allow collapsible: false and active: false  if ( !collapsible && active === false && this.anchors.length ) {  active = 0;  }  return active;  } |

Figure : \_initialActive: function for tabs

This revealed that one only need to add a class to force on of the tabs to be active, as done in Figure 24yielding the results shown in Figure 25.

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| <div class="enhanceable\_content tabs">  <ul>  <li lang="en"><a href="#fragment-1">English</a></li>  <li class="ui-tabs-active" lang="sv"><a href="#fragment-2">P&aring; svenska</a></li>  </ul> |

Figure : Forcing an initial tab to be active by adding a class

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Figure : Result after adding the class

# Switching even the page’s content

Using the code shown in Figure 26 we get the output shown in Figure 27.

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| /\*\*  // @name augement navigation buttons  // @namespace https://github.com/gqmaguirejr/E-learning  // @author Gerald Q. Maguire Jr. <maguire@kth.se>  // @description Add a button labeled with the current language  \*\*/  function toggleLanguage() {  console.info("called toggleLanguage")  // '/api/v1/users/self?user[locale]=sv'  var user=$.getJSON('/api/v1/users/self',  function (data){ var currentLocale=data['locale'];  console.info("user's local is " + currentLocale + " type is" + typeof currentLocale);  if (currentLocale == 'en') {  console.info("user's local 2 is ", currentLocale);  var newuser=$.post('/api/v1/users/self', {"\_method": 'PUT',  "user[locale]": "sv"})  console.info("newuser is ", newuser)  }  else if (currentLocale == 'sv') {  console.info("user's local 2 is ", currentLocale);  var newuser=$.post('/api/v1/users/self', {"\_method": 'PUT',  "user[locale]": "en"})  console.info("newuser is ", newuser)  }  }  )  //console.info("user is ", user)  location.reload();  return false;  }  // set the initial tab by adding a class "ui-tabs-active"  // <div class="enhanceable\_content tabs">  // <ul>  // <li lang="en"><a href="#fragment-1">English</a></li>  // <li class="ui-tabs-active" lang="sv"><a href="#fragment-2">P&aring; svenska</a></li>  // </ul>  function modifyTabOrder() {  console.info("called swapTabOrder")  if (ENV.LOCALE === 'en') {  console.info("show English first");  // $("div.enhanceable\_content.tabs ul li[lang^='sv']").removeClass( "ui-tabs-active" )  // $("div.enhanceable\_content.tabs ul li[lang^='en']").addClass( "ui-tabs-active" );  $("div.enhanceable\_content.tabs ul li[lang^='en']").each(function() {  $(this).click();  });  }  else if (ENV.LOCALE === 'sv') {  console.info("show Swedish first");  // .ui-state-default .ui-corner-top  // $("div.enhanceable\_content.tabs ul li[lang^='en']").removeClass( "ui-tabs-active" )  // $("div.enhanceable\_content.tabs ul li[lang^='sv']").addClass( "ui-tabs-active" );  $("div.enhanceable\_content.tabs ul li[lang^='sv']").each(function() {  $(this).click();  });  }  }  (function() {  'use strict';  onPage(/\/courses/, function() {  // addMenuItem("http://www.kth.se", 'icon-settings-2')  addMenuItem("#", 'icon-settings-2')  setTimeout(modifyTabOrder, 1000);  //modifyTabOrder();  });  function onPage(regex, fn) {  if (location.pathname.match(regex)) fn();  }  function addMenuItem(linkhref, icon) {  var iconHtml = '',  itemHtml  if (icon !== '') {  // If it is a Canvas icon  if (icon.indexOf('icon') === 0) {  iconHtml = '<div class="menu-item-icon-container" role="button" onclick="toggleLanguage();"><i class="' + icon + ' custom\_menu\_list\_icon"></i></div>';  // for an svg or other image  } else if (icon !== '') {  iconHtml = '<div class="menu-item-icon-container" role="button" onclick="toggleLanguage();">' + icon + '</div>';  }  }  // Build item html  itemHtml = '<li class="ic-app-header\_\_menu-list-item ">' +  ' <a id="global\_nav\_locale" href="' + linkhref + '" class="ic-app-header\_\_menu-list-link">' + iconHtml +  ' <div class="menu-item\_\_text custom-menu-item\_\_text">' + ENV.LOCALE + '</div>' +  ' </a>' +  '</li>';  $('#menu').append(itemHtml);  }  })(); |

Figure : Latest version of xx

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Figure : Page and console output

Figure 28 shows the output in the console window. From this we can see that by adding the 1000 ms wait, the tabs have been configured and the simulated click on the tabs works. Prior to adding the delay, the modifyTabOrder() function ran before the tabs were configured. I tried waiting for different things to be ready within the div, but did not find anything that told me when it was possible to click on the tabs.

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Figure : Zooming in on console output