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1 Doubtfire API Commits

See attached document

	Commits on Jul 05, 2016		
-0-	alexcu	NEW: Add helpdesk ticket migration	a5ab51d
-0-	alexcu	NEW: Add basic Helpdesk Ticket model	e89c95e
	Commits on Jul 08, 2016		
-0-	👸 alexcu	Merge branch 'config/update-dependencies' into new/helpdesk-ticketing	f638b78
-0-	alexcu	QUALITY: Change ticket comment to description \cdots	19fa45d
-0-	alexcu	NEW: Add helpdesk ticket migration	ed253dc
-0-	alexcu	NEW: Add basic Helpdesk Ticket model	7d05ac3
-0-	👸 alexcu	QUALITY: Change ticket comment to description \cdots	aa5ba09
-0-	👸 alexcu	ENHANCE: Add create_ticket permission to student projects	78d6a55
-0-	alexcu	ENHANCE: Add convenience methods to helpdesk ticket model	5ecd064
-0-	alexcu	NEW: Add POST /helpdesk/ticket	e0e6195
-0-	alexcu	QUALITY: Modularise helpdesk API into own module	9a00766
-0-	alexcu	CONFIG: Mount helpdesk ticket API	ebffaaa
-0-	alexcu	Merge branch 'test/add-api-units-test' into new/helpdesk-ticketing …	e3a3c18
-0-	alexcu	FIX: Ensure provided task matches project provided	af73595
	Commits on Jul 11, 2016		
-0-	alexcu	Merge branch 'develop' into new/helpdesk-ticketing	e4a6449
4	Commits on Jul 12, 2016		
-0-	alexcu	CONFIG: Update schema.rb	effe6c3
-0-	alexcu	QUALITY: Move require_all helpers to relevant helpers area	5b6bcc8
-0-	alexcu	TEST: Add HelpdeskTicket model test	8d4663a
-0-	🕌 jakerenzella	Merge branch 'new/helpdesk-ticketing' of https://github.com/final-yea	17d6f6a
-0-	🌇 jakerenzella	TEST: Rename ticket.rb to ticket_test.rb …	0e95a43
-0-	🕌 jakerenzella	Fix: Fix asserts to correctly use assert, assert_equal, refute …	ce22e0d
	Commits on Jul 21, 2016		
-0-	alexcu	Merge branch 'develop' into new/helpdesk-ticketing	fee8936
-0-	jakerenzella	FIX: Invalid create syntax for HelpdeskTicket test	5373312
-0-	akerenzella	NEW: Add GET /helpdesk/ticket	a7c8fc2
-0-	akerenzella	FIX: Add missing permissions to helpdesk ticket	68b7aac
-0-	iakerenzella	CONFIG: Update schema.rb	9b2e195
-0-	🕌 jakerenzella	Merge branch 'develop' into new/helpdesk-ticketing	be3db7a
-0-	👸 alexcu	NEW: Create ticket generator	8d7c19f
-0-	🌇 jakerenzella	Merge remote-tracking branch 'upstream/develop' into new/helpdesk-tic	f5e0674
-0-	👸 alexcu	NEW: Add generator for helpdesk tickets to populator	f44c3f2
-0-	🌇 jakerenzella	QUALITY: Remove unnecessary dependencies	43c0041
-0-	🌇 jakerenzella	QUALITY: Remove unnecessary dependencies	ff34e40
-0-	🌇 jakerenzella	FEATURE: Implement helpdesk_ticket endpoints	817e10b
-0-	🌇 jakerenzella	QUALITY: Add role type users	0e6a56b
-0-	akerenzella	TEST: Add helpdesk_ticket endpoints tests	1a3a323
-0-	iakerenzella	Merge branch 'new/helpdesk-ticketing' of https://github.com/final-yea	f88ebc2
-0-	iakerenzella jakerenzella	QUALITY: Change auth_token to use isntance variable	24f7e73
Ą	Commits on Jul 22, 2016		
-0-	👸 alexcu	NEW: Add generator for helpdesk tickets to populator	bb9dde7
-0-	👸 alexcu	QUALITY: Remove debugging message from test	9456c4f
-0-	alexcu	QUALITY: Move find_or_create_student into own helpder	83b3292
-0-	alexcu	NEW: Add randomizer class helper for sampling models	b79902d

-0-	👸 alexcu	FIX: Ensure ticket tests use random projects and tasks	5694ef6
-0-	👸 alexcu	TEST: Remove unnessasary resolution tests	abbfb08
-0-	👸 alexcu	QUALITY: Add auth token helper methods to tests	0a10dcd
-0-	👸 alexcu	FIX: Add missing module function for with_auth_token	83a4ab4
-0-	🎥 jakerenzella	QUALITY: Make endpoint tests use auth helpers	2f25cae
-0-	🎥 jakerenzella	Merge branch 'new/helpdesk-ticketing' of https://github.com/final-yea	e07103b
-0-	🎥 jakerenzella	FIX: Remove bad auth method calls	342bd9e
-0-	alexcu	QUALITY: Remove debug messages	841a934
-0-	👸 alexcu	QUALITY: Add extra json helpers	4e9c32b
-0-	alexcu	FIX: Amend ticket API to support improved filtering \cdots	20367e8
-0-	alexcu	NEW: Add helpdesk sessions migration	5bbc1ae
-0-	alexcu	NEW: Add Helpdesk Session model	4c81c72
-0-	alexcu	ENHANCE: Add convenience methods for active sessions/users	01d83a6
-0-	alexcu	NEW: Add helpdesk session API	ddfa0a8
	Commits on Jul 23, 2016		
-0-	🎥 jakerenzella	QUALITY: Remove unnecessary test_helper code	6b39001
	, and one	40.121.11 .camoro annocessar, cast_nesper code	0233001
	Commits on Jul 25, 2016		
-0-	🏰 jakerenzella	QUALITY: Consolidate auth_token_for_user into auth_token	7d6bbcf
-0-	🎥 jakerenzella	FIX: Ensure add_auth_token respects user provided	7711d24
-0-	🏰 jakerenzella	ENHANCE: Add randomizer for task definition	6acc8d9
-0-	🏰 jakerenzella	FIX: Replace t with ticket in ticket api logger	3f54d06
-0-	🎥 jakerenzella	QUALITY: Use create! instead of do	9dcda7a
-0-	🅌 jakerenzella	QUALITY: Allow Project.task_for_task_definition to accept an ID	f392258
-0-	🎥 jakerenzella	FIX: Remove floating find from ticket api	de25f58
-0-	🕌 jakerenzella	TEST: Write post test for new ticket	1409950
	Commits on Jul 26, 2016		
-0-	alexcu	NEW: Add resolved_at time to helpdesk ticket schema	fcc925e
-0-	alexcu	QUALITY: Add resolution time to ticket generator	4d95b69
-0-	alexcu	NEW: Add minutes to resolve to ticket schema	e3553c7
-0-	alexcu	QUALITY: Add minutes to resolve to database ticket populator	9d5a019
-0-	alexcu	NEW: Add average minutes to resolve ticket between time	5722487
	Commits on Aug 07, 2016		
-0-	alexcu	ENHANCE: Add tickets resolved between dates	03a4c60
-0-	💦 alexcu	NEW: Add GET /helpdesk/stats	d9d7cab
-0-	alexcu	ENHANCE: Enforce session modification for session user only …	2220555
-0-	alexcu	QUALITY: Update API to support changed permissions	b40a400
-0-	alexcu	QUALITY: Pluralise helpdesk session endpoints	5626d75
-0-	alexcu	NEW: Add GET /helpdesk/sessions	2d38a91
-0-	alexcu	ENHANCE: Add improved session serializer	54f3ab8
-0-	alexcu	QUALITY: Pluralize helpdesk ticket endpoints	08c68f5
-0-	alexcu	QUALITY: Bump number of generated helpdesk tickets	aed50a7
-0-	alexcu	ENHANCE: Update helpdesk ticket serializer	d01e41f
-0-	alexcu	Merge branch 'new/helpdesk-sessions' into new/helpdesk-ticketing	4571199
-0-	alexcu	QUALITY: Add TODOs for improved session authentication	dc62200
-0-	alexcu	QUALITY: Move stats endpoint into own API module	1b98cdf
-0-	alexcu	ENHANCE: Add units taught to all staff on helpdesk endpoint	996b36a
-0-	alexcu	NEW: Add average session times and counts to stats API	6462053

-0-	Reubsinit	NEW: Add tickets for user API endpoint	3c39e39
	Commits on Aug 22, 2016		
-0-	lachlanwest	ENHANCE, Combines 2 ticket API androints	91f3761
-0-	acmanwest	ENHANCE: Combines 2 ticket API endpoints …	9113701
	Commits on Aug 23, 2016		
-0-	Reubsinit	FIX: Replace task_id with task_definition_id	5fce6b8
Įą.	Commits on Aug 24, 2016		
-0-	alexcu	Merge pull request #1 from final-year-project/api/add-user-ticket-end	c88982d
	Commits on Aug 27, 2016		
-0-	a lexcu	QUALITY: Remove debugging messages	73510c4
-0-	👸 alexcu	FIX: Prevent creating a new ticket when user has one open	7251ad8
-0-	👸 alexcu	NEW: Add closed state to helpdesk ticket	7c5e39e
-0-	📉 alexcu	TEST: Fix failing Helpdesk tests	70a33f2
-0-	👸 alexcu	TEST: Add tests for DELETE ticket endpoint	75716ab
-0-	alexcu	QUALITY: Add missing is_closed field to ticket serialiser	d5ad1d1
	Commits on Aug 29, 2016		
-0-	👸 alexcu	FIX: Fix error attempting to multiply nil	c881e5d
-0-	alexcu	FIX: Add missing project ID to ticket serializer	e8b5f09
-0-	👸 alexcu	FIX: Fix mispelt method name resolved_betweeen	66fe52d
-0-	👸 alexcu	FIX: Amend incorrect selection logic for resolved tickets	f513e8b
-0-	👸 alexcu	FIX: Stats for sessions return user_id only	09bf98b
-0-	👸 alexcu	FIX: Allow students to get tickets of their own	4c7fa84
-0-	alexcu	FIX: Add missing task def id to ticket serialiser	37d0e25
	Commits on Sep 10, 2016		
-0-	👸 alexcu	QUALITY: Improve stats calculation	763012f
-0-	👸 alexcu	FIX: Add missing HelpdeskSessions class call	467485c
-0-	👸 alexcu	ENHANCE: Change the serializing of tickets	3be8a02
-0-	👸 alexcu	FIX: Ensure helpdesk user serialiser is used	a291cca
-0-	👸 alexcu	FIX: Ensure tickets are in order by creation time	53d4221
-0-	alexcu	ENHANCE: Deprecate resolved_at for closed_at	eed08d1
	Commits on Sep 11, 2016		
-0-	👸 alexcu	ENHANCE: Revamp statistics endpoint	d8a83d6
-0-	alexcu	FIX: Add new interval handling	6a90eed
[-]	Commits on Sep 14, 2016		
-0-	alexcu	ENHANCE: Add dashgraph endpoint to stats	4094807

2 Doubtfire Web Commits

See attached document

[-]	Commits on Aug 03, 2016		
-0-	👸 alexcu	LOOKS: Remove gigantic buttons for selecting grade icon	078493e
ĮĄ.	Commits on Aug 12, 2016		
-0-	g macite	FIX: Ensure Quality points > 0 to show details in task view	01b6f71
-0-	macite	FIX: Ensure task sheet can be viewed	4360588
-0-	g macite	FIX: Typo in task status text	7849816
-0-	achlanwest	NEW: Add help desk menu item to header menu	e37ea2c
-0-	Reubsinit	NEW: Add directory structure for helpdesk ticket modal	6e563fa
-0-	Reubsinit	NEW: Add boiler plate code for helpdesk ticket modal	6fb2c9d
-0-	lachlanwest	NEW: Basic HTML structure of create ticket form	90bbad5
-0-	Reubsinit	NEW: Propagate prototype modal through help desk drop down	92f0d2a
-0-	Reubsinit	NEW: Inject projects into scope of ticket modal	3577471
-0-	Reubsinit	NEW: Add all units to submit ticket unit dropdown	363ced4
-0-	Reubsinit	NEW: Add task dropdown to ticket modal	b10c7aa
[-	Commits on Aug 15, 2016		
-0-	Reubsinit	NEW: Add HelpDeskTicket to API models	c1ae833
-0-	Reubsinit	NEW: Modal now saves ticket to server	8e65b26
[-]	Commits on Aug 23, 2016		
-0-	Reubsinit	NEW: Modal now saves task definition id to server	cb4ae05
	Commits on Aug 27, 2016		
-0-	📉 alexcu	Merge branch 'feature/helpdesk-ticket-modal' into feature/helpdesk-ti	896826a
-0-	alexcu	QUALITY: Refactor helpdesk dropdown into directive	ece29e7
-0-	alexcu	NEW: Add additional API helpdesk endpoints	dbc7dcc
-0-	alexcu	QUALITY: Refactor submit modal	3102231
-0-	alexcu	FIX: Ensure query is used for custom state ticket requests	6622d84
-0-	alexcu	QUALITY: Replace helpdesk ticket open bool for actual data	26b6f2f
-0-	alexcu	ENHANCE: Show pill when ticket is open under header	239e574
-0-	alexcu	ENHANCE: Make submit ticket modal into generic ticket modal	585635a
-0-	👸 alexcu	ENHANCE: Automatically add/remove ticket icon as needed	fa031d9
Į.	Commits on Aug 28, 2016		
-0-	👸 alexcu	NEW: Add helpdesk session API endpoints	617858d
-0-	👸 alexcu	FIX: Fix logic for loading task definition on ticket modal	debd220
-0-	alexcu	NEW: Add session modal	2eb903c
-0-	a lexcu	FIX: Fix right global nav from squishing contents up	3da0ad9
-0-	alexcu	ENHANCE: Place alerts underneath navbar	4f12b31
ĮĄ.	Commits on Aug 29, 2016		
-0-	👸 alexcu	FIX: Return from current session and ticket funcs on error	b12f363
-0-	alexcu	NEW: Add HelpdeskStats factory	e9fcebc
-0-	alexcu	QUALITY: Add find project helper method to project service	99d7dc6
-0-	alexcu	NEW: Add partially implemented helpdesk-ticket directive	1599cc6
-0-	alexcu	NEW: Add partially implemented helpdesk dashboard state	54a923c
-0-	👸 alexcu	ENHANCE: Add link to helpdesk state in header dropdown	c52d801
-0-	alexcu	QUALITY: Move stats polling into dashboard functionality	65fb6c9
-0-	👸 alexcu	FIX: Ensure ticket header data loads only if data is present	717d447
-0-	👸 alexcu	QUALITY: Merge data models inside ticket-modal to ngResource	6dfba40
-0-	alexcu	FIX: Add missing ngModel attribute to task—def—selector	4f64fca

-0-	📉 alexcu	FIX: Ensure polling stops when dashboard controller dies	80341c5
	Commits on Sep 10, 2016		
-0-	👸 alexcu	FIX: Stop flash issue on dashboard for tickets	1bab857
-0-	alexcu	NEW: Implement wireframe prototype	fd4ada1
-0-	👸 alexcu	ENHANCE: Add position number to enqueued tickets	9dace26
-0-	👸 alexcu	FIX: Fix incorrect logic for color warning ranges	78158a3
-0-	👸 alexcu	FIX: Ensure time to resolve is rounded	0cc3237
-0-	alexcu	QUALITY: Move ticket position to dashboard only	63acb68
-0-	👸 alexcu	LOOKS: Centre align tickets on dash	f0ee9b8
-0-	alexcu	FIX: Fix breaking create ticket without task	bb72dc3
F	Commits on Sep 11, 2016		
-0-	alexcu	NEW: Add graph	400a58d
[-]	Commits on Sep 14, 2016		
-0-	alexcu	FIX: Switch to dashgraph endpoint for graph	b154a6a
[-	Commits on Sep 18, 2016		
-0-	alexcu	FIX: Fix gruntfile leading comma	cb83dcc
-0-	alexcu	LOOKS: Improve headerbar for mobile devices	9af47f2
-0-	alexcu	LOOKS: Improve ticket display for mobile devices	a4cda61
-0-	alexcu	LOOKS: Show spinner during load of dashboard	4df0412
-0-	alexcu	LOOKS: Make buttons in modals clickable on mobile	049cd0a
-0-	👸 alexcu	LOOKS: Improve looks for the dashboard menu	42d6b13
-0-	👸 alexcu	LOOKS: Hide x overflow for tickets only	e1458dc
-0-	alexcu	FIX: Poll on clock on of helpdesk if done via dashboard	ba758d7
-0-	alexcu	FIX: Remove overflow on ticket row	eda760c
[Commits on Sep 19, 2016		
-0-	achlanwest	ENHANCE: Make the dash emoji depend on wait time	1bb198a
[-	Commits on Sep 20, 2016		
-0-	alexcu	Merge pull request #1 from final-year-project/enhance/status-dependen	a004fd4
-0-	alexcu	Merge pull request #2 from final-year-project/test/usability	947039b

3 Doubtfire API Source Code Changes

See attached document

```
Gemfile
4
                                                                                                                              View
    $
              @@ -44,12 +44,12 @@ group :production, :test, :replica do
  44
         44
               end
  45
         45
  46
         46
               group :development, :test, :replica do
  47
              - gem 'rspec-rails', '~> 3'
         47
  48
                 gem 'factory_girl_rails'
  49
         48
                 gem 'minitest-rails'
  50
         49
                 gem 'minitest-hyper
  51
                 gem 'database_cleaner'
  52
              - gem "minitest-osx"
              + gem 'minitest-osx'
              + gem 'minitest-around'
         53
  54
         54
  55
         55
               # Student submission
    **
22
          Gemfile.lock
                                                                                                                              View
                                                                                                                                     $
              @@ -81,7 +81,6 @@ GEM
 81
         81
                   devise_ldap_authenticatable (0.8.5)
 82
         82
                     devise (>= 3.4.1)
 83
         83
                     net-ldap (>= 0.6.0, <= 0.11)
 84
                   diff-lcs (1.2.5)
 85
         84
                   docile (1.1.5)
         85
                   encryptor (1.3.0)
 87
         86
                   enumerable-lazy (0.0.1)
     $
              @@ -129,6 +128,8 @@ GEM
        128
                   mime-types-data (3.2016.0521)
 130
        129
                   mini_portile2 (2.1.0)
                   minitest (5.9.0)
                   minitest-around (0.3.2)
                     minitest (~> 5.0)
                   minitest-hyper (0.2.0)
        134
                   minitest-osx (0.1.0)
 134
                     minitest (~> 5.4)
    #
              @@ -199,23 +200,6 @@ GEM
                   responders (2.2.0)
        201
                     railties (>= 4.2.0, < 5.1)
 201
        202
                   rmagick (2.15.4)
 202
                   rspec-core (3.4.4)
 203
                     rspec-support (~> 3.4.0)
 204
                   rspec-expectations (3.4.0)
 205
                     diff-lcs (>= 1.2.0, < 2.0)
 206
                     rspec-support (~> 3.4.0)
 207
                   rspec-mocks (3.4.1)
                     diff-lcs (>= 1.2.0, < 2.0)
                     rspec-support (~> 3.4.0)
 210
                   rspec-rails (3.4.2)
                     actionpack (>= 3.0, < 4.3)
                     active support (>= 3.0, < 4.3)
                     railties (>= 3.0, < 4.3)
 214
                     rspec-core (~> 3.4.0)
                     rspec-expectations (~> 3.4.0)
 216
                     rspec-mocks (~> 3.4.0)
                     rspec-support (~> 3.4.0)
                   rspec-support (3.4.1)
```

203

220

ruby-filemagic (0.7.1)

ruby-progressbar (1.8.1)

```
205
                  rubyzip (1.2.0)
   @@ -273,6 +257,7 @@ DEPENDENCIES
                grape-swagger
274
       258
               hirb
       259
                launchy
      260
            + minitest-around
276
       261
               minitest-hyper
277
               minitest-osx
               minitest-rails
   $
            @@ -287,7 +272,6 @@ DEPENDENCIES
287
               rails_best_practices
288
                require all (= 1.3.3)
       274
                rmagick (~> 2.15)
290
             rspec-rails (~> 3)
                ruby-filemagic
                rubyzip
                simplecov
   $
```

```
6
         app/api/api.rb
                                                                                                                             View
    **
              @@ -32,6 +32,9 @@ class Root < Grape::API
                   mount Api::Submission::PortfolioApi
                   mount Api::Submission::PortfolioEvidenceApi
  34
                   mount Api::Submission::BatchTask
                   mount Api::Helpdesk::Ticket
         36
                   mount Api::Helpdesk::Session
                   mount Api::Helpdesk::Stats
         38
         40
                   # Add auth details to all end points
    ***
              @@ -51,6 +54,9 @@ class Root < Grape::API
         54
                   AuthHelpers.add_auth_to Api::Submission::PortfolioApi
                   AuthHelpers.add_auth_to Api::Submission::PortfolioEvidenceApi
         56
                   AuthHelpers.add_auth_to Api::Submission::BatchTask
                   AuthHelpers.add_auth_to Api::Helpdesk::Ticket
                   AuthHelpers.add_auth_to Api::Helpdesk::Session
                   AuthHelpers.add_auth_to Api::Helpdesk::Stats
 55
        61
                   add_swagger_documentation \
  56
         62
                     base_path: nil,
    $
```

```
104
           app/api/helpdesk/session.rb
                                                                                                                                        View
              aa -0.0 +1.104 aa
              +require 'grape'
          2
          3
              +module Ani
          4
                 module Helpdesk
          5
          6
              +
                   # Helpdesk session system endpoints
                   class Session < Grape::API</pre>
          9
                     helpers AuthHelpers
         10
                     helpers AuthorisationHelpers
                     helpers LogHelper
                     before do
         14
                        authenticated?
                      end
         16
```

```
18
            # GET /helpdesk/sessions?user_id=[id]&is_active=[true|false]
19
20
            desc "Get helpdesk sessions"
             optional :user_id, type: Integer, :desc => "Filter by specific user id"
             optional :is_active, type: Boolean, :desc => "Filter to only active sessions"
            get '/helpdesk/sessions' do
26
             unless authorise? current user, HelpdeskSession, :get sessions
27
                error!({"error" => "Not authorised get helpdesk sessions"}, 403)
28
             if params.empty?
30
                logger.info "#{current_user.username} requested all helpdesk sessions"
               HelpdeskSession.all
                user_id = params[:user_id]
34
               is_active = params[:is_active]
                logger.info "#{current_user.username} requested all #{is_active ? 'active' : ''} helpdesk sessions" << (!user
36
                sessions = is_active ? HelpdeskSession.active_sessions : HelpdeskSession.all
37
                sessions = user_id.nil? ? sessions : sessions.where(user_id: user_id)
38
                sessions
              end
40
            end
41
42
43
            # POST /helpdesk/sessions
44
45
            desc "Begin a new session at the helpdesk as current user"
46
            params do
47
             requires :clock_off_time, type: DateTime, :desc => "The estimated clock off time when the user ends working"
48
             optional :user_id, type: Integer, :desc => "The user who is about to begin working (if blank, posting user is u
49
50
            post '/helpdesk/sessions' do
             unless authorise? current_user, HelpdeskSession, :create_session
               error!({"error" => "Not authorised to create a helpdesk session"}, 403)
53
54
             user = params[:user_id] ? User.find(params[:user_id]) : current_user
              # TODO: if current_user != user_id passed in then require PIN
             if HelpdeskSession.user_clocked_off?(user)
57
               session = HelpdeskSession.create!(
58
                 user: user,
59
                 clock_on_time: DateTime.now, # Clock on immediately when ticket is created
60
                  clock_off_time: params[:clock_off_time]
61
62
                logger.info "#{current_user.username} created new helpdesk session (id=#{session.id})"
63
                error!({"error" => "#{user.username} is already clocked on at the helpdesk"}, 403)
65
              end
66
              session
67
            end
68
69
70
            # DELETE /helpdesk/sessions/:id
            desc "Prematurely clock off an existing helpdesk session"
73
74
             requires :id, type: Integer, :desc => "The session to clock off"
            end
76
            delete '/helpdesk/sessions/:id' do
77
              session = HelpdeskSession.find(params[:id])
78
              unless authorise? current_user, session, :clock_off_session
79
                error!({"error" => "Not authorised to clock off helpdesk session (id=#{session.id})"}, 403)
```

```
80
               end
81
               # TODO: if current_user != session.user then require PIN
82
               if session.clocked_off?
83
                 logger.info "#{current_user.username} attempted to clock off already clocked off helpdesk session (id=#{sessi
84
85
86
                 logger.info "#{current_user.username} prematurely clocked off helpdesk session (id=#{session.id})"
87
88
               session
89
             end
90
91
92
             # GET /helpdesk/sessions/tutors
93
             desc "Get a list of all currently tutors working at the helpdesk"
95
             get '/helpdesk/sessions/tutors' do
96
               unless authorise? current_user, HelpdeskSession, :get_all_current_session_users
97
                 error!({"error" => "Not authorised view current helpdesk staff"}, 403)
98
99
               logger.info "#{current_user.username} requested all currently working helpdesk staff"
100
               Active Model:: Array Serializer. {\tt new(Helpdesk Session. users\_working\_now, each\_serializer: Helpdesk User Serializer)}
101
             end
102
           end
103
104
```

```
76
          app/api/helpdesk/stats.rb
                                                                                                                            View
              @@ -0,0 +1,76 @@
          1
              +require 'grape'
          3
              +module Api
          4
              + module Helpdesk
          5
          6
                   # Helpdesk ticket stats endpoints
          7
          8
                   class Stats < Grape::API</pre>
          9
                     helpers AuthHelpers
         10
                     helpers AuthorisationHelpers
                     helpers LogHelper
                     before do
         14
                       authenticated?
         16
         18
                     # GET /helpdesk/stats/tickets
         19
         20
                     desc 'Gets tickets stats for helpdesk within the duration specified'
                     params do
                      optional :from, type: DateTime, desc: 'The time to start getting statistics (do not provide for all stats)'
                       optional :to, type: DateTime, desc: 'The time to stop getting statistics (defaults to current time)', default
         24
                     get '/helpdesk/stats/tickets' do
         26
                       unless authorise? current_user, HelpdeskTicket, :get_ticket_stats
                         error!({error: 'Not authorised to get helpdesk ticket stats'}, 403)
         28
                       end
         29
         30
                       logger.info "#{current_user.username} got ticket helpdesk statistics"
                       from
                                = params[:from]
                                = params[:to] || DateTime.now
                       to
         34
```

```
35
              {
36
                                            HelpdeskTicket.resolved_between(from, to).length,
                resolved count:
                                            HelpdeskTicket.all_unresolved.length,
                number_unresolved:
38
                average_wait_time_in_mins: HelpdeskTicket.average_wait_time(from, to)
40
            end
41
42
43
            # GET /helpdesk/stats/dashgraph
44
45
            desc 'Gets dashboard graph data for the helpdesk (last 3 hours)'
46
            get '/helpdesk/stats/dashgraph' do
47
              unless authorise? current_user, HelpdeskTicket, :get_ticket_stats
48
                error!({error: 'Not authorised to get helpdesk ticket stats'}, 403)
49
50
51
              logger.info "#{current_user.username} got ticket helpdesk dash graph data"
52
              # Work from now downto 3 hours ago
              graph_range = 3.hours.ago.to_i..DateTime.now.to_i
55
              graph data = \{\}
56
              # Collect data every minute going backwards -- stats for every min in
57
              # last 180 mins
58
              interval = 1.minute.to_i
59
              graph_range.first.step(graph_range.last, interval) do |unix_t|
60
                # Range is the time between graph_time less time mins ago
61
                # to graph_time
62
                range = Time.at(unix_t + interval).utc..Time.at(unix_t).utc
63
                # Stats to include
64
                avg_wait = HelpdeskTicket.average_wait_time(range.first, range.last)
65
                unresolved = HelpdeskTicket.unresolved_between(range.first, range.last)
66
                # Insert at this time the stats there were
67
                graph_data[unix_t] = {
                  average_wait_time_in_mins: avg_wait,
69
                  number_of_unresolved_tickets: unresolved.length # count only
70
                }
              end
              graph data
73
            end
74
          end
75
     + end
76
     +end
```

```
120
           app/api/helpdesk/ticket.rb
                                                                                                                             View
                                                                                                                                    @@ -0,0 +1,120 @@
              +require 'grape'
          2
              +require 'helpdesk_ticket_serializer'
          3
          4
              +module Api
          5
              + module Helpdesk
          6
                   # Helpdesk ticketing system endpoints
          8
         9
                   class Ticket < Grape::API</pre>
         10
                     helpers AuthHelpers
                     helpers AuthorisationHelpers
                     helpers LogHelper
         13
         14
                     before do
                      authenticated?
         16
                     end
```

```
18
19
            # POST /helpdesk/tickets
20
            desc "Add a new helpdesk ticket"
             requires :project_id, type: Integer, desc: "The project to assign the ticket to"
24
             optional :task_definition_id, type: Integer, desc: "Task which the student needs help with"
             optional :description, type: String, desc: "Description associated to the ticket"
            post '/helpdesk/tickets' do
28
              project = Project.find(params[:project_id])
              task = params[:task_definition_id].nil? ? nil : task = project.task_for_task_definition(params[:task_definition]
30
              unless authorise? current_user, project, :create_ticket
               error!({error: "Not authorised to create a ticket for project #{project.id}"}, 403)
34
35
              # Only allow them to create a new ticket if they haven't done so already
36
              if HelpdeskTicket.user_has_ticket_open? project.user.id
                logger.info "#{current_user.username} tried to create new ticket but already has one open"
38
                error!({error: "User already has a ticket open"}, 403)
39
40
41
              ticket = HelpdeskTicket.create!({
42
               project: project,
43
               task: task.
44
               description: params[:description]
45
46
47
             logger.info "#{current_user.username} created new ticket #{ticket.id} for #{ticket.unit.name}"
48
              ticket
49
            end
50
            # GET /helpdesk/tickets?filter={resolved,unresolved,closed,all}&user_id={id}
            # Optional User Id and Filter. Filter default to all.
54
55
            desc "Gets all helpdesk tickets. Optional User Id and Resolved filter."
              optional :user_id, type: String, desc: "The id of the user to get tickets for."
58
              optional :filter, type: String, desc: "Filter by resolved, unresolved, closed or all. Defaults to all.", defaul
             optional :shallow, type: Boolean, desc: "Use shallow serializer vs detailed serializer", default: true
59
60
61
            get '/helpdesk/tickets' do
62
             unless authorise? current_user, HelpdeskTicket, :get_tickets
63
                error!({error: 'Not authorised to get tickets'}, 403)
64
65
66
             user_id = params[:user_id]
67
              filter = params[:filter] || 'all'
68
              tickets = HelpdeskTicket.all_by_state(filter.to_sym, user_id)
69
70
              serializer = params[:shallow] ? ShallowHelpdeskTicketSerializer : HelpdeskTicketSerializer
             ActiveModel::ArraySerializer.new(tickets, each_serializer: serializer)
73
74
75
            # GET /helpdesk/tickets/:id
76
77
            desc "Gets helpdesk ticket with an id"
78
             requires :id, type: Integer, desc: "The id of the ticket to get"
79
80
```

```
81
            get '/helpdesk/tickets/:id' do
82
               ticket = HelpdeskTicket.find(params[:id])
83
84
               if not authorise? current_user, ticket, :get_details
85
                 error!({error: 'Not authorised to get ticket details'}, 403)
86
               end
87
88
               ticket
89
             end
91
92
             # DELETE /helpdesk/tickets/:id?[resolve=true|false]
93
94
            desc "Updates helpdesk ticket with an id"
95
             params do
96
              requires :id, type: Integer, desc: "The id to of the ticket to delete"
97
              optional :resolve, type: Boolean, desc: "Mark the ticket as resolved"
98
99
            delete '/helpdesk/tickets/:id' do
               ticket = HelpdeskTicket.find(params[:id])
101
102
               if params[:resolve] == true
103
                 unless authorise? current_user, ticket, :resolve_ticket
104
                   error!({error: "Not authorised to resolve ticket #{params[:id]}"}, 403)
105
106
107
                 logger.info "#{current_user.username} resolved ticket #{ticket.id}"
108
109
                 unless authorise? current_user, ticket, :close_ticket
110
                  error!({error: "Not authorised to close ticket #{params[:id]}"}, 403)
                 ticket.close
                 logger.info "#{current_user.username} closed ticket #{ticket.id}"
114
116
               ticket
             end
118
           end
119
     + end
120
     +end
```

```
179
            app/models/helpdesk_session.rb
                                                                                                                                     View
              @@ -0,0 +1,179 @@
               +#
              +# Tracking for sessions of staff working at the helpdesk.
          4
              +class HelpdeskSession < ActiveRecord::Base
          5
              + # Model associations
          6
              + belongs_to :user
          8
              + # Model constratins/validation
          9
              + validates :user, presence: true
         10
              + validates :clock_on_time, presence: true
              + validates :clock_off_time, presence: true
              + # Validates that a clock off time is always after the clock on time
         14
              + validates_presence_of :clock_on_time, if: :clock_off_must_be_after_clock_on
         15
              + def clock_off_must_be_after_clock_on
         16
                     \  \  \, \text{if clock\_off\_time} \,\, \&\& \,\, \text{clock\_off\_time} \,\, < \,\, \text{clock\_on\_time} \\
                      errors.add(:clock_off_time, "can't be before :clock_on_time")
         18
         19
                  end
```

```
20
    + # Validates that the user for a session is not a student
    + validates_presence_of :user, if: :user_is_not_student
    + def user_is_not_student
24
        if user && user.role == Role.student
           errors.add(:user, 'must not be a student')
26
       end
28
29
    + #
30
    + # Permissions around helpdesk sessions
    + #
    + def self.permissions
          # What can students do with sessions?
34
          student_role_permissions = [
           :get_all_current_session_users
36
37
          # What can tutors do with sessions?
38
          tutor_role_permissions = [
39
           :create session.
40
           :clock_off_session,
41
           :get_all_current_session_users,
42
           :get_sessions
43
44
          # What can convenors do with sessions?
45
          convenor_role_permissions = [
46
           :create_session,
47
           :clock_off_session,
48
           :get_all_current_session_users,
49
           :get sessions,
50
           :get_ticket_stats
51
          # What can admins do with sessions?
          admin_role_permissions = [
54
           :create_session,
           :clock_off_session,
56
           :get_all_current_session_users,
57
           :get sessions.
58
           :get ticket stats
59
60
          # What can nil users do with sessions?
61
          nil role permissions = [
62
63
64
    +
          # Return permissions hash
65
66
           :admin
                    => admin_role_permissions,
67
           :convenor => convenor_role_permissions,
68
           :tutor => tutor_role_permissions,
69
           :student => student_role_permissions,
70
           :nil
                  => nil_role_permissions
    +
          }
    +
       end
74
    + def self.role_for(user)
75
        user.role
76
77
78
    + def role_for(user)
79
         # If the user provided is the user registered to the session, then
80
          # they can do whatever they want with it. Convenors and admins can
81
          # override this
82
          if user == self.user || [Role.convenor, Role.admin].include?(user.role)
```

```
83
            user.role
84
          end
85
     + end
86
87
88
     + # Override the clock off time to set it to now
89
90
     + def clock_off
          self.clock_off_time = DateTime.now
91
 92
          save!
93
     + end
94
95
     + #
96
     + # Returns the staff sessions within the given timeframe grouped by user id
97
98
     + def self.sessions_by_staff_between(from = nil, to = DateTime.now)
99
          sessions_between(from, to).group_by(&:user)
100
101
     + def self.sessions_by_staff
          sessions_by_staff_between
102
103
     + end
104
105
     + #
106
     + # Returns all session stats between the timeframe
107
108
     + def self.stats_by_staff_id(from = nil, to = DateTime.now)
109
          sessions_by_staff_between(from, to).map do |user, sessions|
110
            durations = sessions.map(&:session_duration)
            average_duration = durations.inject(:+) / durations.length
            count = sessions.length
114
             user_id: user.id,
              average_duration_in_hours: average_duration,
116
              count: count
            }
118
119
     + end
120
     + # Returns all sessions within the time-frame given
124
     + def self.sessions_between(from = nil, to = DateTime.now)
125
         to ||= DateTime.now
126
          return where('clock_on_time > ? AND clock_off_time < ?', from, to) unless from.nil?</pre>
          where('clock_off_time < ?', to)</pre>
128
        end
129
130
     + #
     + # Returns all currently active sessions
     + #
     + def self.active_sessions
134
          where('clock_off_time > ?', DateTime.now)
     + end
136
138
     + # Returns all users currently working now
139
140
     + def self.users_working_now
141
          active_sessions.map(&:user)
142
     + end
143
144
145
     + # Returns true if this session is clocked off
```

```
146
     + #
147
     + def clocked_off?
         clock_off_time < DateTime.now</pre>
149
150
     + #
     + # Returns true if this session is clocked on
     + #
154
     + def clocked_on?
          !clocked_off?
156
     + end
     +
     + # Checks if the user provided is currently clocked off
160
161
     + def self.user_clocked_off?(user)
          # Should have no sessions clocked on thus nothing found clocked on
163
          user.helpdesk_sessions.find(&:clocked_on?).nil?
164
     + end
166
     + #
     + # Checks if the user provided is currently clocked on
168
169
     + def self.user_clocked_on?(user)
170
          !user_clocked_off(user)
171
     + end
     + #
174
     + # Returns the duration of time for a session in hours
175
176
     + def session_duration
          (clock_off_time - clock_on_time) / 60 / 60
178
179
     +end
```

```
170
           app/models/helpdesk_ticket.rb
                                                                                                                          View
                                                                                                                                  @@ -0,0 +1,170 @@
         1
             +#
             +# Tracking for tickets logged at the helpdesk.
          3
          4
             +class HelpdeskTicket < ActiveRecord::Base</pre>
          5
             + # Model associations
          6
             + belongs_to :project
             + belongs_to :task
          8
         9
             + # Model constratins/validation
         10
             + validates :project, presence: true # Must always be associated to a project
             + #
             + # Permissions around group data
        14
         15
             + def self.permissions
         16
                   # What can students do with all tickets?
                   student_role_permissions = [
         18
                    :get_details,
         19
                    :get_tickets,
        20
                    :get_ticket_stats,
                    :close_ticket
        23
                   # What can tutors|convenors|admins do with all tickets?
         24
                   tutor_role_permissions = convenor_role_permissions = admin_role_permissions = [
                    :get_tickets,
```

```
26
           :get_details,
27
           :get_ticket_stats,
28
           :close_ticket,
29
           :resolve_ticket
30
          # What can nil users do with all tickets?
          nil_role_permissions = [
34
          ]
35
36
          # Return permissions hash
38
           :admin => admin_role_permissions,
39
           :convenor => convenor_role_permissions,
40
           :tutor => tutor_role_permissions,
41
           :student => student_role_permissions,
42
           :nil
                    => nil_role_permissions
43
44
       end
45
46
       def self.role_for(user)
47
         user.role
48
    + end
49
50
       def role_for(user)
51
         if user == project.user
           Role.student
         elsif user.role != Role.student
54
           user.role
         else
56
           ni1
57
          end
58
    +
59
60
    + # Returns true if a used has a ticket open
61
    + def self.user_has_ticket_open?(user_id)
62
          !all_unresolved(user_id).empty?
63
    + end
64
65
    + # Returns back all unresolved tickets, optionally limit to a user
66
    + def self.all_unresolved(user_id = nil)
67
         all_by_state(:unresolved, user_id)
68
    +
       end
69
70
    + # Returns back all resolved tickets, optionally limit to a user
    + def self.all_resolved(user_id = nil)
          all_by_state(:resolved, user_id)
    + end
74
    + # Returns back all closed tickets, optionally limit to a user
76
    + def self.all_closed(user_id = nil)
         all_by_state(:closed, user_id)
78
79
80
    + # Finds tickets of a particular status, optionally limit to a user
81
    + def self.all_by_state(resolved_filter, user_id = nil)
82
          tickets =
83
           case resolved_filter
84
           when :resolved
85
             where(is_resolved: true)
86
           when :unresolved
87
             where(is_closed: false)
88
           when :closed
    +
```

```
89
              where(is_closed: true, is_resolved: false)
 90
            else
91
              all
92
             end
93
94
          unless user_id.nil?
95
            user = User.find(user_id)
96
            project = Project.for_user(user, false) # see app/models/project.rb:76
97
            tickets = tickets.where(project: project) # limits the scope of tickets down to those with the project provided
99
100
          tickets.order(:created at)
101
     + end
102
103
     + # Get all tickets resolved between two dates
104
     + def self.resolved_between(from = nil, to = DateTime.now)
105
         to ||= DateTime.now # if nil is passed in
106
          from ? all_resolved.where(closed_at: from..to) : all_resolved
107
108
109
110
     + # Get all tickets that were still unresolved between from and to
     + def self.unresolved_between(from, to = DateTime.now)
114
          to ||= DateTime.now # if nil passed in
          where('created_at <= ? AND (closed_at >= ? OR NOT is_closed)', from, to)
116
     + end
118
     + # Calculates the average time to resolve a ticket from the duration
119
     + # provided (i.e., between from and now). If no arguments are provided,
120
     + # all resolved tickets will be used regardless of when they were resolved.
     + # Where no tickets are found within the period, nil is returned.
     + def self.average_resolve_time_between(from = nil, to = DateTime.now)
         tickets = resolved_between(from, to)
124
          resolved_between(from, to).average(:minutes_to_resolve).to_i unless tickets.empty?
     + end
126
128
     + # Determines the current average wait time for a ticket
129
130
     + def self.average_wait_time(from, to)
          avg_resolve = HelpdeskTicket.average_resolve_time_between(from, to) || 0
          num_tickets = HelpdeskTicket.unresolved_between(from, to).length
          avg_resolve * num_tickets
134
        end
136
     + # Resolves the ticket
     + def resolve
138
          unless is closed
139
            # Resolving closes the ticket
140
            close
141
            self.is_resolved = true
142
            self.minutes_to_resolve = ((closed_at - created_at) / 60).to_f.round(2)
143
144
          end
145
146
147
     + # Unit for ticket
148
     + def unit
149
          project.unit
150
     + end
     +
```

```
+ # Student for ticket
        def student
154
           project.student
        # Returns true if ticket is associated with a task
        def task?
159
           !task.nil?
160
     + # Prematurely closes a ticket
        def close
     +
164
          unless is_closed
            self.is_closed = true
            self.closed_at = DateTime.now
167
168
           end
169
       end
170
     +end
```

```
7
         app/models/project.rb
                                                                                                                             View
     4
              @@ -21,6 +21,8 @@ class Project < ActiveRecord::Base
                 has_many :learning_outcome_task_links, through: :tasks
         24
              + has_many :helpdesk_tickets, dependent: :destroy
         26
                 validate :must_be_in_group_tutorials
    $
              @@ -33,7 +35,8 @@ def self.permissions
                     :change tutorial,
                     :make_submission,
                     :get_submission,
  36
                     :change
                     :change.
                     :create_ticket
         40
         41
                   # What can tutors do with projects?
  39
         42
                   tutor_role_permissions = [
    *
              @@ -860,6 +863,8 @@ def has_task_for_task_definition?(td)
 860
        863
                 # task if the task does not exist for this project.
 861
        864
 862
        865
                 def task_for_task_definition(td)
        866
                   # Find the definition if a ID is passed in.
        867
                   td = TaskDefinition.find(td) if td.is_a? Fixnum
 863
        868
                   logger.debug "Finding task #{td.abbreviation} for project #{log_details()}"
        869
                   result = tasks.where(task_definition: td).first
 865
        870
                   if result.nil?
    $
```

```
1
         app/models/task.rb
                                                                                                                           View
    $
             @@ -74,6 +74,7 @@ def role_for(user)
  74
         74
                has_many :reverse_plagiarism_match_links, class_name: "PlagiarismMatchLink", dependent: :destroy, inverse_of: :other_
                 has_many :learning_outcome_task_links, dependent: :destroy # links to learning outcomes
  76
                 has_many :learning_outcomes, through: :learning_outcome_task_links
              + has_many :helpdesk_tickets
  78
                 validates :task_definition_id, uniqueness: { scope: :project,
  79
         80
                   message: "must be unique within the project" }
```

```
5
         app/models/user.rb
                                                                                                                           View
                                                                                                                                   $
             @@ -67,6 +67,7 @@ def reset_authentication_token!
 67
         67
                 belongs_to :role # Foreign Key
 68
         68
                 has_many
                             :unit_roles, dependent: :destroy
                 has_many
                             :projects
         70
             + has_many
                             :helpdesk_sessions
  70
         71
                 # Model validations/constraints
                 validates :first_name, presence: true
    #
              @@ -407,4 +408,8 @@ def self.import_from_csv(current_user, file)
 407
        408
                     errors: errors
        400
 408
                   }
 409
        410
                 end
        411
        412
             + def units_taught
        413
                  unit_roles.map(&:unit)
        414
             + end
 410
        415
               end
15
          app/serializers/helpdesk_session_serializer.rb
                                                                                                                           View
                                                                                                                                   @@ -0,0 +1,15 @@
         1
              +require 'user_serializer'
          2
             +class HelpdeskSessionSerializer < ActiveModel::Serializer
          4
             + attributes :id.
          5
                           :user.
          6
                            :clocked_on?,
          7
                            :clock_on_time,
          8
                            :clock_off_time
         9
         10
                has_one :user, serializer: HelpdeskUserSerializer
             + def clocked_on?
                   object.clocked_on?
         14
             + end
             +end
40
          app/serializers/helpdesk_ticket_serializer.rb
                                                                                                                           View
                                                                                                                                   aa -0.0 +1.40 aa
              +require 'project_serializer'
         2
             +require 'task definition serializer'
          3
          4
             +class HelpdeskTicketSerializer < ActiveModel::Serializer</pre>
          5
             + attributes :id.
          6
                            :project,
                            :task_definition,
          8
                            :description,
         9
                            :is_resolved,
         10
                            :is_closed,
                            :created_at,
                            :closed at.
                            :minutes_to_resolve
         14
                 def project
         16
                   ShallowProjectSerializer.new object.project
         18
         19
                def task_definition
```

```
20
          task = object.task
          Shallow Task Definition Serializer. {\tt new} \ task. task\_definition \ {\tt if} \ task
     + end
     +end
24
25
     +class ShallowHelpdeskTicketSerializer < ActiveModel::Serializer
26
     + attributes :id,
27
                    :project_id,
28
                    :task_definition_id,
29
                    :description,
30
                    :is_resolved,
                    :is_closed,
                    :created_at,
                    :closed_at,
34
                    :minutes_to_resolve
36
     + def task_definition_id
37
          task = object.task
38
          task.task_definition_id if task
39
     + end
40
     +end
```

```
25
          app/serializers/project_serializer.rb
                                                                                                                           View
                                                                                                                                 $
             @@ −10,6 +10,31 @@ class ShallowProjectSerializer < ActiveModel::Serializer
  10
         10
                def project_id
                   object.id
                 end
         14
             + def student_name
                  object.student.name
             +
         18
             + def unit_id
         19
                   object.unit.id
         20
                end
             + def unit_code
         23
                   object.unit.code
        24
                end
         25
         26
                def unit_name
        27
                   object.unit.name
        28
                 end
         30
             + def tutor_name
                   tutorial = object.tutorial
                   tutorial.tutor.name if tutorial
                end
         34
         35
             + def start_date
         36
                   object.unit.start_date.to_date
         37
              + end
         38
  14
         39
  15
         40
               # Student project serializer is used with teaching staff
    **
```

```
4 app/serializers/task_definition_serializer.rb

... @@ -1,3 +1,7 @@

1 +class ShallowTaskDefinitionSerializer < ActiveModel::Serializer
2 + attributes :id, :abbreviation, :name, :description
```

```
3
              +end
          4
          5
               class TaskDefinitionSerializer < ActiveModel::Serializer</pre>
          6
                 attributes :id, :abbreviation, :name, :description,
                   :weight, :target_grade, :target_date,
    #
         app/serializers/user_serializer.rb
                                                                                                                             View
    *
              @@ -10,3 +10,11 @@ def system_role
  10
         10
               class ShallowUserSerializer < ActiveModel::Serializer</pre>
                 attributes :id, :name, :email
         14
              +class HelpdeskUserSerializer < ActiveModel::Serializer</pre>
         15
              + attributes :id, :name, :email, :units_taught
         16
              + def units_taught
         18
                   ActiveModel::ArraySerializer.new(object.units_taught, each_serializer: ShallowUnitSerializer)
         19
         20
              +end
15
          db/migrate/20160705025331_create_helpdesk_tickets.rb
                                                                                                                             View
              @@ -0,0 +1,15 @@
              +class CreateHelpdeskTickets < ActiveRecord::Migration</pre>
              + def change
          3
                   create_table :helpdesk_tickets do |t|
          4
                     t.references :project, null: false
          5
                     t.references :task, null: true
          6
                     t.string :comments, null: true
          8
                     t.boolean :is_resolved, null: false, default: false
          9
         10
                     t.timestamps
                   end
                   add_index :helpdesk_tickets, :project_id
                   add_index :helpdesk_tickets, :task_id
         14
              +end
6
         db/migrate/20160708011422_change_helpdesk_ticket_comment_to_description.rb
                                                                                                                             View
             @@ -0,0 +1,6 @@
              +class ChangeHelpdeskTicketCommentToDescription < ActiveRecord::Migration
              + def change
          3
                   rename_column :helpdesk_tickets, :comments, :description
                   change_column :helpdesk_tickets, :description, :string, :limit => 2048
          5
              + end
             +end
11
          db/migrate/20160722114921_create_helpdesk_sessions.rb
                                                                                                                             View
                                                                                                                                     @@ -0,0 +1,11 @@
          1
              +class CreateHelpdeskSessions < ActiveRecord::Migration</pre>
          2
              + def change
                   create_table :helpdesk_sessions do |t|
                     t.references :user, null: false
          5
                     t.datetime :clock_on_time, null: false
          6
                     t.datetime :clock_off_time, null: false
                     t.timestamps
          8
          9
                   add_index :helpdesk_sessions, :user_id
```

```
10 + end
             +end
5
         db/migrate/20160725141011_add_resolved_at_to_helpdesk_ticket.rb
                                                                                                                          View
                                                                                                                                  ... @@ -0,0 +1,5 @@
             +class AddResolvedAtToHelpdeskTicket < ActiveRecord::Migration
             + def change
                 add_column :helpdesk_tickets, :resolved_at, :datetime
         4
             + end
          5
             +end
         \tt db/migrate/20160725144833\_add\_minutes\_to\_resolve\_to\_helpdesk\_ticket.rb
5
                                                                                                                           View
                                                                                                                                  @@ -0,0 +1,5 @@
         1
             +class AddMinutesToResolveToHelpdeskTicket < ActiveRecord::Migration
          3
                  add_column :helpdesk_tickets, :minutes_to_resolve, :float
          5
             +end
5
                                                                                                                          View
         db/migrate/20160826233551_add_is_closed_to_helpdesk_ticket.rb
             @@ -0,0 +1,5 @@
          1
             +class AddIsClosedToHelpdeskTicket < ActiveRecord::Migration
             + def change
          3
                  add_column :helpdesk_tickets, :is_closed, :boolean, :default => false
         4
             + end
          5
5
         \tt db/migrate/20160910065932\_rename\_resolved\_at\_to\_closed\_at.rb
                                                                                                                          View
             @@ -0,0 +1,5 @@
         1
             +class RenameResolvedAtToClosedAt < ActiveRecord::Migration</pre>
             + def change
                  rename_column :helpdesk_tickets, :resolved_at, :closed_at
27
          db/schema.rb
                                                                                                                          View
    *
             @@ -11,7 +11,7 @@
              #
              # It's strongly recommended that you check this file into your version control system.
             -ActiveRecord::Schema.define(version: 20160503222451) do
        14
             +ActiveRecord::Schema.define(version: 20160910065932) do
 15
        15
                # These are extensions that must be enabled in order to support this database
                enable_extension "plpgsql"
    #
             @@ -74,6 +74,31 @@
  74
        74
  75
        75
                add_index "helpdesk_schedules", ["user_id"], name: "index_helpdesk_schedules_on_user_id", using: :btree
  76
         76
         77
             + create_table "helpdesk_sessions", force: :cascade do |t|
         78
                  t.integer "user_id",
                                              null: false
         79
                  t.datetime "clock_on_time", null: false
        80
                  t.datetime "clock_off_time", null: false
        81
                   t.datetime "created_at"
        82
                   t.datetime "updated_at"
        83
                end
        84
        85
             + add_index "helpdesk_sessions", ["user_id"], name: "index_helpdesk_sessions_on_user_id", using: :btree
```

```
86
      87
              create_table "helpdesk_tickets", force: :cascade do |t|
      88
                t.integer "project_id",
                                                                               null: false
      89
                t.integer "task_id"
      90
                t.string
                           "description",
                                                  limit: 2048
      91
                t.boolean "is_resolved",
                                                               default: false, null: false
      92
                t.datetime "created_at"
      93
                t.datetime "updated_at"
      94
                t.datetime "closed_at"
      95
                           "minutes_to_resolve"
                t.float
      96
                t.boolean "is_closed",
                                                               default: false
      97
      98
              add_index "helpdesk_tickets", ["project_id"], name: "index_helpdesk_tickets_on_project_id", using: :btree
              add_index "helpdesk_tickets", ["task_id"], name: "index_helpdesk_tickets_on_task_id", using: :btree
     101
      102
              create_table "learning_outcome_task_links", force: :cascade do |t|
                           "description"
78
     103
79
      104
                t.integer "rating"
  $
```

```
131
                                                                                                                                     lib/helpers/database_populator.rb
                                                                                                                             View
     $
              00 - 2,6 + 2,7
               require 'faker'
          3
               require 'bcrypt'
               require 'json'
              +require_all 'lib/helpers'
   6
          8
               # This class populates data in the database
    #
              @@ -29,7 +30,7 @@ def initialize(scale = :small)
         30
                       some_tutorials: 1,
                       many_tutorials: 1,
                       max_tutorials: 4,
                       tickets_generated: 10
                       tickets_to_generate: 30
         34
                     large: {
                       min_students: 15,
    #
              @@ -41,7 +42,7 @@ def initialize(scale = :small)
  41
         42
                       some_tutorials: 2,
  42
         43
                       many_tutorials: 4,
  43
         44
                       max_tutorials: 20,
  44
                       tickets_generated: 50
         45
                       tickets_to_generate: 100
         46
                     }
  46
         47
  47
         48
                   accepted_scale_types = scale_data.keys
    $
              @@ -135,14 +136,80 @@ def generate_units
        136
                     generate_and_align_ilos_for_unit(unit, unit_details)
                     generate_tutorials_and_enrol_students_for_unit(unit, unit_details)
                   end
        139
                   puts "!"
        140
                 end
        142
 141

    # Random project helper

        143
              + # Generates some units
 142
        144
 143
              def random_project
 144
                   id = Project.pluck(:id).sample
```

```
145
                 Project.find(id)
      145
            + def generate_units
      146
                 puts "--> Generating units"
      147
      148
                 if @user_cache.empty?
      149
                   # Must generate users first!
      150
                   puts "---> No users generated. Generating users first..."
                   generate_users()
                 end
       154
                 # Set sizes from scale
                 some_tasks = @scale[:some_tasks]
                 many_tasks = @scale[:many_tasks]
                 some tutorials = @scale[:some tutorials]
       158
                 many_tutorials = @scale[:many_tutorials]
       159
      160
                 # Run through the unit_details and initialise their data
                 @unit_data.each do | unit_key, unit_details |
                   puts "---> Generating unit #{unit_details[:code]}"
                   unit = Unit.create!(
      164
                     code: unit_details[:code],
                     name: unit_details[:name],
      166
                     description: Populator.words(10..15),
      167
                     start_date: Time.zone.now - 6.weeks,
      168
                     end_date: 13.weeks.since(Time.zone.now - 6.weeks)
      169
      170
                   \ensuremath{\text{\#}} Assign the convenors for this unit
                   unit_details[:convenors].each do | user_key |
                     puts "---> Adding convenor #{user_key}"
                     unit.employ_staff(@user_cache[user_key], Role.convenor)
      174
       175
                   # Cache what we have
                   @unit cache[unit key] = unit
                   # Generate other unit-related stuff
      178
                   generate_tasks_for_unit(unit, unit_details)
      179
                   generate_and_align_ilos_for_unit(unit, unit_details)
      180
                   generate_tutorials_and_enrol_students_for_unit(unit, unit_details)
      181
                 end
               end
      183
      184
      185
            + # Generates helpdesk tickets
      186
      187
            + def generate_helpdesk_tickets
      188
                 tickets_to_generate = @scale[:tickets_to_generate]
      189
                 print "-> Generating #{tickets_to_generate} helpdesk tickets"
      190
                 tickets_to_generate.times do
      191
                   project = Randomizer.random_record_for_model(Project)
                   throw "Must create projects before calling generate_helpdesk_tickets" if project.nil?
                   \# 1/4 chance of getting nil task
       194
                   task = rand(0..3) == 0 ? nil : Randomizer.random_task_for_project(project)
       195
                   # 3/4 chance of being resolved
                   is_resolved = rand(0..3) > 0
                   if is resolved
       198
                     minutes_to_resolve = rand(0..15)
       199
                     closed_at = DateTime.now + minutes_to_resolve.minutes
      200
      201
                   HelpdeskTicket.create(
      202
                    project: project,
      203
                     task: task.
      204
                     description: Populator.words(5..10),
      205
                     is_resolved: is_resolved,
       206
                     is_closed: is_resolved,
```

```
207
                      closed at: closed at.
       208
                      minutes_to_resolve: minutes_to_resolve
       209
                    print "."
                  end
                  puts "!"
146
                end
147
                private
   *
             @@ -323,42 +390,22 @@ def generate_tutorials_and_enrol_students_for_unit(unit, unit_details)
               # Finds or creates a student if not found
               def find_or_create_student(username)
                  unless @user_cache.has_key?(username)
                    profile = {
                                              Faker::Name.first_name,
                      first name:
                      last_name:
                                              Faker::Name.last_name,
                      nickname:
                                              username,
                      role_id:
                                              Role.student_id,
                                              "#{username}@doubtfire.com",
                      email:
336
                      username:
                                              username,
                      password:
                                               'password'.
                      password confirmation:
                                              'password'
340
                    user = User.create!(profile)
341
                    @user_cache[username] = user
342
343
                  @user_cache[username]
346
347
                # Generated fixed data here for students and units
349
                def generate_fixed_data
                  # Define fixed user data here
                  @user data = {
                    acain:
                                        {first_name: "Andrew", last_name: "Cain",
                                                                                              nickname: "Macite",
                                                                                                                           role_id: Role
                    cwoodward:
                                        {first_name: "Clinton", last_name: "Woodward",
                                                                                              nickname: "The Giant",
                                                                                                                           role_id: Role
                                        {first_name: "Allan",
                                                                                              nickname: "P-Jiddy",
                    aiones:
                                                                last_name: "Jones",
                                                                                                                           role id: Role
                                        {first_name: "Clinton", last_name: "Woodward",
                                                                                              nickname: "The Giant",
                    aconvenor:
                                                                                                                           role_id: Role
                    aadmin:
                                        {first_name: "Allan",
                                                                last_name: "Jones",
                                                                                              nickname: "P-Jiddy",
                                                                                                                           role_id: Role
                                        {first_name: "Reuben", last_name: "Wilson",
                                                                                              nickname: "Reubs",
                    rwilson:
                                                                                                                           role id: Role
356
                                        {first_name: "Akihiro", last_name: "Noguchi",
                                                                                              nickname: "Animations",
                    akihironoguchi:
                                                                                                                           role id: Role
       402
                                        {first_name: "Akihiro", last_name: "Noguchi",
                                                                                              nickname: "Animations",
                    atutor:
                                                                                                                           role id: Role
       403
                                        {first_name: "Alex",
                                                                                              nickname: "DoubtfireDude",
                    acummaudo:
                                                                 last_name: "Cummaudo",
                                                                                                                          role_id: Role
      404
                    cliff:
                                        {first_name: "Cliff",
                                                                 last_name: "Warren",
                                                                                              nickname: "Cliff",
                                                                                                                           role_id: Role
       405
                    joostfunkekupper:
                                        {first_name: "Joost",
                                                                 last_name: "Funke Kupper",
                                                                                              nickname: "Joe",
                                                                                                                           role_id: Role
                    angusmorton:
                                        {first_name: "Angus",
                                                                                              nickname: "Angus",
                                                                                                                           role_id: Role
                                                                 last_name: "Morton",
                    "123456X" =>
                                        {first_name: "Fred",
                                                                 last_name: "Jones",
                                                                                              nickname: "Foo",
                                                                                                                          role id: Role
       407
                    "123456X" =>
                                        {first_name: "Fred",
                                                                 last name: "Jones",
                                                                                              nickname: "Foo",
                                                                                                                           role id: Role
                    astudent:
                                        {first_name: "student", last_name: "surname",
                                                                                              nickname: "Foo",
                                                                                                                           role_id: Role
       409
                  # Add 10 tutors to fixed info
364
       411
                  10.times do |count|
   $
             @@ -381,14 +428,14 @@ def generate_fixed_data
      428
                    intro_prog: {
       429
                      code: "COS10001",
                      name: "Introduction to Programming",
                      convenors: [ :acain, :cwoodward ],
       431
                      convenors: [ :acain, :aconvenor ],
```

```
432
                      tutors: [
       433
386
                        { user: :acain, num: many_tutorials },
387
                        { user: :cwoodward, num: many_tutorials },
                        { user: :ajones, num: many_tutorials },
       434
                        { user: :aconvenor, num: many_tutorials },
       435
                        { user: :aadmin, num: many_tutorials },
       436
                        { user: :rwilson, num: many_tutorials },
       437
                        { user: :acummaudo, num: some_tutorials },
                        { user: :akihironoguchi, num: many_tutorials },
                        { user: :atutor, num: many_tutorials },
                        { user: :joostfunkekupper, num: many_tutorials },
                        { user: :angusmorton, num: some_tutorials },
394
       441
                        { user: :cliff, num: some_tutorials },
   =
             @@ -400,11 +447,11 @@ def generate_fixed_data
       447
                    } :qoo
       448
                      code: "COS20007",
                      name: "Object Oriented Programming",
403
                      convenors: [ :acain, :cwoodward, :ajones, :acummaudo ],
                      convenors: [ :acain, :aconvenor, :aadmin, :acummaudo ],
                      tutors: [
405
       452
                        { user: "tutor_1", num: few_tutorials },
       453
                        { user: :angusmorton, num: few_tutorials },
                        { user: :akihironoguchi, num: few_tutorials },
       454
                        { user: :atutor, num: few_tutorials },
408
       455
                        { user: :joostfunkekupper, num: few_tutorials },
409
       456
                      ],
410
       457
                      num_tasks: many_tasks,
   $
             @@ -414,9 +461,9 @@ def generate_fixed_data
414
       461
                    ai4q: {
415
       462
                      code: "COS30046",
       463
416
                      name: "Artificial Intelligence for Games",
417
                      convenors: [ :cwoodward ],
       464
                      convenors: [ :aconvenor ],
418
       465
                      tutors: [
419
                        { user: :cwoodward, num: few_tutorials },
                        { user: :aconvenor, num: few_tutorials },
420
       467
                        { user: :cliff, num: few_tutorials },
421
       468
       469
422
                      num_tasks: few_tasks,
   $
             @@ -426,13 +473,13 @@ def generate_fixed_data
426
       473
                    gameprog: {
427
       474
                      code: "COS30243",
428
       475
                      name: "Game Programming",
429
                      convenors: [ :cwoodward, :acummaudo ],
       476
                      convenors: [ :aconvenor, :acummaudo ],
430
       477
                      tutors: [
431
                        { user: :cwoodward, num: few_tutorials },
       478
                        { user: :aconvenor, num: few_tutorials },
432
       479
433
                      num_tasks: few_tasks,
434
       481
                      ilos: rand(0..3),
                      students: [ :acain, :ajones ]
435
                      students: [ :acain, :aadmin ]
436
                    },
437
       484
438
       485
                  puts "-> Defined #{@user_data.length} fixed users and #{@unit_data.length} units"
   $
```

```
22 lib/helpers/find_or_create_students.rb

... @@ -0,0 +1,22 @@

1 +#
```

```
2
    +# Finds or creates a student if not found
 3
    +#
 4
    +def find_or_create_student(username)
 5
    + user_created = nil
 6
    + using_cache = !!@user_cache
    + if not using_cache or not @user_cache.has_key?(username)
 8
          profile = {
 9
            first_name:
                                    Faker::Name.first_name,
10
            last_name:
                                   Faker::Name.last_name,
           nickname:
                                   username.
                                    Role.student_id,
           role_id:
            email:
                                    "#{username}@doubtfire.com",
14
           username:
                                    username,
            password:
                                    'password',
16
            password_confirmation: 'password'
18
          user_created = User.create!(profile)
19
         @user_cache[username] = user_created if using_cache
20
    + user_created || @user_cache[username]
     +end
```

```
25
          lib/helpers/randomizer.rb
                                                                                                                         View
                                                                                                                                @@ -0,0 +1,25 @@
             +class Randomizer
         3
             + # Randomly returns a new model (e.g., random_record_for_model(Project))
         4
         5
             + def self.random_record_for_model(model)
         6
                  throw "Must provide a model" unless model.is_a? Class
                  id = model.all.pluck(:id).sample
         8
                  model.find(id)
         9
             + end
         10
             + # Randomly returns a new task for the given project
         13
             + #
         14
             + def self.random_task_for_project(project)
                  task_def = self.random_task_def_for_project(project)
         16
                  project.task_for_task_definition(task_def)
             +
                end
        18
         19
             + #
         20
             + # Randomly returns a new task definition for the given project
             + #
             + def self.random_task_def_for_project(project)
                  project.unit.task_definitions.sample
        24
             + end
         25
             +end
```

```
26
          lib/tasks/populate.rake
                                                                                                                           View
                                                                                                                                  $
             @@ -2,32 +2,11 @@ require_all 'lib/helpers'
              namespace :db do
                desc "Mark off some of the due tasks"
   4
                 task expand_first_unit: :environment do
   5
   6
                  find_or_create_student = lambda { |username|
   7
                    result = User.find_by_username(username)
   8
                    if result
   9
                      return result
  10
                    else
```

```
profile = {
                         first name:
                                                  Faker::Name.first name,
                         last_name:
                                                  Faker::Name.last_name,
                         nickname:
                                                  username,
                         role_id:
                                                  Role.student_id,
  16
                         email:
                                                  "#{username}@doubtfire.com",
  17
                         username:
                                                  username,
  18
                         password:
                                                   'password',
  19
                         password_confirmation:
                                                  'password'
  20
                       result = User.create!(profile)
                       return result
                     end
                   }
  26
          5
                   unit = Unit.first
  28
          6
                   tutes = unit.tutorials
                   for student_count in 0..2000
  30
                     proj = unit.enrol_student(find_or_create_student.call("student_#{student_count}"), tutes[student_count % tutes.co
          8
                     student = find_or_create_student("student_#{student_count}")
          9
                     proj = unit.enrol_student(student, tutes[student_count % tutes.count])
         10
                   end
                 end
     $
              @@ -177,6 + 156,7 @@ namespace :db do
        156
                   dbpop = DatabasePopulator.new ENV['SCALE']
 178
                   dbpop.generate_users()
                   dbpop.generate_units()
                   dbpop.generate_helpdesk_tickets()
                   # Run simulate signoff?
 182
        162
                   unless !args.nil? && args[:extend_populate]
    $
2
         lib/tasks/test_setup.rake
                                                                                                                              View
                                                                                                                                     $
              @@ -6,8 +6,8 @@ namespace :test do
                 task setup: [:environment, 'db:setup', 'db:migrate'] do
                   require 'helpers/database_populator'
   8
          8
                   dbpop = DatabasePopulator.new
   9
                   dbpop.generate_user_roles()
          9
  10
                   dbpop.generate_users()
         10
                   dbpop.generate_units()
                   dbpop.generate_helpdesk_tickets()
                 end
  13
         13
               end
17
          test/api/auth_test.rb
                                                                                                                              View
                                                                                                                                     @@ -1,6 +1,6 @@
               require 'test_helper'
              -class AuthTest < MiniTest::Test</pre>
              +class AuthTest < ActiveSupport::TestCase</pre>
   4
                 include Rack::Test::Methods
   5
          5
                 include TestHelpers::AuthHelper
   6
          6
                 include TestHelpers::JsonHelper
    #
              @@ -38,10 +38,7 @@ def test_auth_post
```

user_keys = ['id', 'email', 'first_name', 'last_name', 'username', 'nickname', 'receive_task_notifications', 'rece

These match the model object... so can compare in loops

40

40

```
41
                  assert_json_matches_model(response_user_data, expected_auth, user_keys)
 42
 43
                  user\_keys.each \ \{ \ |k| \ assert \ response\_user\_data.has\_key?(k), \ "Response \ has \ key \ \#\{k\}" \ \}
44
                  user_keys.each { |k| assert_equal expected_auth[k], response_user_data[k], "Values for key #{k} match" }
        41
                  assert_json_matches_model(response_user_data, expected_auth, *user_keys)
45
        42
 46
        43
                  # Check other values returned
 47
        44
                  assert_equal expected_auth.name, response_user_data['name'], 'Names match'
   *
             @@ -72,28 +69,28 @@ def test_auth_roles
                       expect: Role.admin,
                       post: {
                           username: "acain",
                           username: "aadmin",
 76
                           password: "password"
        74
 78
                    },
 79
        76
                    {
                      expect: Role.convenor,
81
                      post: {
82
                           username: "jrenzella",
                           username: "aconvenor",
83
        80
                           password: "password"
84
        81
85
        82
                    }.
86
        83
87
        84
                      expect: Role.tutor,
88
        85
                      post: {
89
                           username: "rwilson",
                           username: "atutor",
        87
                           password: "password"
91
        88
92
        89
                    },
93
        90
                    {
94
        91
                      expect: Role.student,
95
                      post: {
96
                           username: "acummaudo",
        93
                           username: "astudent",
97
        94
                           password: "password"
        95
                      }
99
        96
   $
             @@ -116,7 +113,6 @@ def test_auth_roles
116
                # Test put for authentication token
                def test_auth_put
                  auth_token = get_auth_token
                  data_to_put = {
                      username: "acain",
                      password: "password"
   Σ<u>†</u>
             @@ -136,7 +132,6 @@ def test_auth_put
                # Test for deleting authentication token
                def test_auth_delete
                  auth_token = get_auth_token
140
                  # Get the auth token needed for delete test
141
       136
                  delete "/api/auth/#{auth_token}.json", "CONTENT_TYPE" => 'application/json'
142
                  # 200 response code means success!
   $
```

```
95 test/api/helpdesk/ticket_test.rb
... @@ -0,0 +1,95 @@
```

```
1
    +require 'test_helper'
 2
 3
    +class TicketsTest < ActiveSupport::TestCase</pre>
 4
    + include Rack::Test::Methods
 5
    + include TestHelpers::AuthHelper
 6
    + include TestHelpers::JsonHelper
 8
    + def app
 9
        Rails.application
10
    + end
    + # POST /helpdesk/tickets
    + def test_post_helpdesk_ticket
14
         project = Randomizer.random_record_for_model(Project)
         # Can't create ticket if this user already has a ticket
         while HelpdeskTicket.user_has_ticket_open? project.user_id
18
          project = Randomizer.random_record_for_model(Project)
19
         end
20
         ticket = {
           project_id: project.id,
           description: Populator.words(5..10),
24
           task_definition_id: rand > 0.33 ? Randomizer.random_task_def_for_project(project).id : nil
26
         data_to_post = add_auth_token ticket, project.user
28
         post_json '/api/helpdesk/tickets', data_to_post
         # Last ticket ids should match
         expected_ticket = HelpdeskTicket.last
         assert_json_matches_model last_response_body, expected_ticket, :id
34
    + end
36
    + # GET /helpdesk/tickets
    + def test_get_all_helpdesk_tickets
38
         get with_auth_token '/api/helpdesk/tickets'
         expect = ActiveModel::ArraySerializer.new(HelpdeskTicket.all, each_serializer: ShallowHelpdeskTicketSerializer)
40
         assert_json_equal expect, last_response_body
41
    + end
42
43
    + # GET /helpdesk/tickets
44
    + def test_get_all_unresolved_helpdesk_tickets
45
         get with_auth_token '/api/helpdesk/tickets?filter=unresolved'
46
         expect = ActiveModel::ArraySerializer.new(HelpdeskTicket.all_unresolved, each_serializer: ShallowHelpdeskTicketSeri
47
         assert_json_equal expect, last_response_body
48
    + end
50
    + # GET /helpdesk/tickets?filter=resolved
    + def test_get_resolved_helpdesk_tickets
52
         get with_auth_token '/api/helpdesk/tickets?filter=resolved'
         expect = ActiveModel::ArraySerializer.new(HelpdeskTicket.all_resolved, each_serializer: ShallowHelpdeskTicketSerial
54
         assert_json_equal expect, last_response_body
56
57
    + # GET /helpdesk/tickets?user_id=1&filter=resolved
58
    + def test_get_resolved_helpdesk_tickets_for_user
59
         id = 1
60
         get with_auth_token "/api/helpdesk/tickets?user_id=#{id}&filter=resolved"
61
         62
         assert_json_equal expect, last_response_body
63
    + end
```

```
64
65
    + # GET /helpdesk/tickets/:id
     + # id = 1
67
     + def test_get_helpdesk_ticket_with_id
68
69
          get with_auth_token "/api/helpdesk/tickets/#{id}"
          expect = HelpdeskTicketSerializer.new HelpdeskTicket.find(id)
          assert_json_equal expect, last_response_body
        end
74
    + # DELETE /helpdesk/tickets/:id?resolve=false
    + def test_delete_a_ticket_by_closing
76
          ticket = HelpdeskTicket.all_unresolved.first
          delete with_auth_token "/api/helpdesk/tickets/#{ticket.id}"
78
          # Reload the ticket from DB with updated info
79
          ticket = HelpdeskTicket.find(ticket.id)
          assert ticket.is_closed
81
          refute ticket.is_resolved
82
    + end
83
84
       # DELETE /helpdesk/tickets/:id?resolve=true
85
        def test_delete_a_ticket_by_resolving
86
          ticket = HelpdeskTicket.all_unresolved.first
87
          delete with_auth_token "/api/helpdesk/tickets/#{ticket.id}?resolve=true"
88
          # Reload the ticket from DB with updated info
89
          ticket = HelpdeskTicket.find(ticket.id)
          assert ticket.is_resolved
91
          assert ticket.is_closed
92
          dt = DateTime.parse(last_response_body['closed_at']).inspect
93
          assert dt, ticket.closed_at
94
    + end
95
    +end
```

```
12
          test/api/units_test.rb
                                                                                                                              View
                                                                                                                                      00 - 1,7 + 1,7 00
         1
               require 'test_helper'
  2
         2
               require 'date'
   3
   4
              -class UnitsTest < MiniTest::Test</pre>
              +class UnitsTest < ActiveSupport::TestCase</pre>
                 include Rack::Test::Methods
  6
          6
                 include TestHelpers::AuthHelper
                 include TestHelpers::JsonHelper
    Σ
              @@ -10,10 +10,6 @@ def app
                   Rails.application
                 end
              def setup
  14
                   @auth_token = get_auth_token()
              - end
  17
                 # --
                 # --- Endpoint testing for:
  19
                 # ----- /api/units.json
    $
              @@ -100,7 +96,7 @@ def test_units_post_tutorial
 100
         96
                 # Test GET for getting all units
 101
         97
                 def test_units_get
 102
         98
                   \# The GET we are testing
                   get "/api/units.json?auth_token=#{@auth_token}"
 103
         99
                   get with_auth_token "/api/units.json"
        101
                   actual_unit = JSON.parse(last_response.body)[0]
```

```
106
      102
                 expected_unit = Unit.first
   #
            @@ -124,7 +120,7 @@ def test_units_get_by_id
124
      120
                 # Get response back from getting a unit by id
126
                 # Test getting the first unit with id of 1
                 get "/api/units/1.json?auth_token=#{@auth_token}"
                 get with_auth_token "/api/units/1.json"
                 actual_unit = JSON.parse(last_response.body)
                 expected_unit = Unit.find(1)
   $
            @@ -137,7 +133,7 @@ def test_units_get_by_id
                 # Get response back from getting a unit by id
                 # Test getting the first unit with id of 2
                 get "/api/units/2.json?auth_token=#{@auth_token}"
                 get with_auth_token "/api/units/2.json"
141
142
       138
                 actual_unit = JSON.parse(last_response.body)
       139
                 expected_unit = Unit.find(2)
   #
```

```
33
          test/helpers/auth_helper.rb
                                                                                                                             View
                                                                                                                                     $
              @@ -4,25 +4,40 @@ module TestHelpers
          4
                 module AuthHelper
   6
          6
                   # Gets an authentication token for User.first
                   # Gets an auth token for the provided user
   9
                   def get_auth_token
  10
                     user = User.first
          9
                   def auth_token(user = User.first)
                     user.extend_authentication_token(true)
                     user.auth_token
                   end
  14
         14
                   # Adds an authentication token to the hash of data provided
                   # Adds an authentication token to the hash data or string URL
                   # This prevents us from having to keep adding the :auth_token
  18
                   # key to any POST data that is needed
                   # key to any GET/POST/PUT etc. data that is needed
  20
                   def add_auth_token(hash)
                     hash[:auth_token] = get_auth_token
                     hash
                   def add_auth_token(data, user = User.first)
                     # Passed in an id instead of a user model? Find the user model from User.find
                     user = User.find(user) if user.is_a? Fixnum
                     if data.is_a? Hash
                       data[:auth_token] = auth_token user
         24
                     elsif data.is_a? String
                       \mbox{\#} If we have a question mark, we need to add a query paramater using \&
         26
                       # otherwise use ?
                       data << (data.include?('?') ? "&" : "?") << "auth_token=#{auth_token}"</pre>
         28
                     end
                     data
                   end
                   module_function :get_auth_token
```

```
+ # Alias for above for nicer usage (e.g., get with_auth_token "http://")

34 + #

35 + def with_auth_token(data, user = User.first)

36 + add_auth_token data, user

37 + end

38 +

39 + module_function :auth_token

40 module_function :add_auth_token

41 + module_function :with_auth_token

27 42 end

28 43 end
```

```
33
          test/helpers/json_helper.rb
                                                                                                                               View
                                                                                                                                      $
              @@ -20,15 +20,40 @@ def put_json(endpoint, data)
  20
         20
                   # Assert that a JSON response matches the model and keys provided
                   # Assert that a JSON response matches the model and keys provided.
         24
                   # Keys MUST be symbols
                   def assert_json_matches_model(response_json, model, keys)
                     keys.each { |k| assert response_json.has_key?(k), "Response has key #{k}"}
                     keys.each { |k| assert_equal model[k], response_json[k], "Values for key #{k} match" }
         26
                   def assert_json_matches_model(response_json, model, *keys)
                     keys.each { |k| assert response_json.key?(k.to_s), "Response has key #{k}"}
         28
                     keys.each \ \{ \ |k| \ assert\_equal \ model[k], \ response\_json[k.to\_s], \ "Values \ for \ key \ \#\{k\} \ match" \ \}
         29
                   end
         30
                   # Last response body parsed from JSON
         34
                   def last_response_body
                     JSON.parse(last_response.body)
         36
                   end
         38
         39
                   # Converts from an ActiveRelation to JSON (without Ruby objects inside the hash)
         40
         41
                   def json_hashed(hash)
         42
                     JSON.parse(hash.to_json)
         43
                   end
         44
         45
         46
                   # Assert that the lefthand matches the right-hand as json hash
         47
         48
                   def assert_json_equal(lhs, rhs)
         49
                     assert_equal json_hashed(lhs), json_hashed(rhs)
         50
                   end
         51
         52
                   module_function :assert_json_matches_model
                   module_function :post_json
                   module_function :put_json
                   module_function :last_response_body
         56
                   module_function :json_hashed
                   module_function :assert_json_equal
         58
                 end
  34
         59
               end
```

```
1
    +require "test_helper"
 2
    +class HelpdeskTicketTest < ActiveSupport::TestCase
 4
         @test_desc = 'Hello, World!'
          @test_project = Randomizer.random_record_for_model(Project)
          @test_task = Randomizer.random_task_for_project(@test_project)
 8
          @tickets = {
           without_task: HelpdeskTicket.create!(
10
             project: @test_project
           ) .
           with_task: HelpdeskTicket.create!(
            project: @test_project,
14
             task: @test_task
           ),
           with_description: HelpdeskTicket.create!(
             project: @test_project,
18
              description: @test_desc
19
20
         }
        end
    + test "helpdesk tickets have projects" do
24
         @tickets.values.each do |t|
            assert t.project, @test_project
26
28
    + test "only one helpdesk ticket has a description" do
          assert_not_nil @tickets[:with_description].description
          assert_equal @tickets[:with_description].description, @test_desc
          assert_nil @tickets[:with_task].description
          assert_nil @tickets[:without_task].description
34
    + end
36
    + test "only one helpdesk ticket has a task" do
          assert_equal @tickets[:with_task].task, @test_task
38
          assert_nil @tickets[:with_description].task
          assert_nil @tickets[:without_task].task
40
    + end
41
42
    + test "resolving a helpdesk ticket" do
43
         ticket_to_resolve = @tickets[:without_task]
44
          ticket_to_resolve.resolve
45
          assert ticket_to_resolve, true
46
          # both without_task and ticket_to_resolve should match
47
          assert_equal @tickets[:without_task], ticket_to_resolve
48
          # others should remain false
          refute @tickets[:with_task].is_resolved
50
          refute @tickets[:with_description].is_resolved
        end
    + test "the task? method should be true if the task has a task" do
54
         assert @tickets[:with_task].task?
        end
56
57
     + test "the student method should match the associated project's student" do
58
          assert_equal @tickets[:with_task].student, @test_project.student
59
          assert_equal @tickets[:with_task].student, @test_project.student
60
          assert_equal @tickets[:with_description].student, @test_project.student
61
        end
62
63
       test "the unit method should match the associated project's unit" do
```

```
64  + assert_equal @tickets[:with_task].unit, @test_project.unit
65  + assert_equal @tickets[:with_task].unit, @test_project.unit
66  + assert_equal @tickets[:with_description].unit, @test_project.unit
67  + end
68  +end
```

```
18
          test/test_helper.rb
                                                                                                                            View
    #
             @@ -17,16 +17,14 @@
 17
              # Require minitest extensions
 18
         18
              require 'minitest/rails'
 19
         19
              require 'minitest/pride'
 20
             -require 'minitest/autorun'
        20
              require 'minitest/osx'
             +require 'minitest/around'
             -# Require all test helpers
 24
             -require_all 'test/helpers'
             +# Require test helpers
        24
              require 'rails/test_help'
 26
        25
              require 'database_cleaner'
        26
 28
        27
              class ActiveSupport::TestCase
 29
             - # Check if migrations are pending
 30
        28
                ActiveRecord::Migration.check_pending!
        29
         30
                # Setup all fixtures in test/fixtures/*.(yml|csv) for all tests in alphabetical order.
    $
             @@ -41,17 +39,17 @@ class ActiveSupport::TestCase
 41
         39
                # Support rollback of db changes after all tests
 42
        40
                DatabaseCleaner.strategy = :transaction
 43
        41
 44
             - # After setup of all test, start database cleaner to undo transactions
 45
             - def before_teardown
 46
                  super
        42
             + def setup
 47
        43
                  DatabaseCleaner.start
        44
 49
        45
 50
             - # After teardown
              def after_teardown
        46
             + def teardown
        47
                  DatabaseCleaner.clean
 53
                  super
        48
        49
        50
                # Add more helper methods to be used by all tests here...
        51
             + require_all 'test/helpers'
        52
        53
             + extend MiniTest::Spec::DSL
        54
              end
```

4 Doubtfire Web Source Code Changes

See attached document

```
2
         Gruntfile.js
                                                                                                                           View
    $
              @@ -358,7 +358,7 @@ module.exports = function ( grunt ) {
                       sub: true,
                       boss: true,
                       eqnull: true
                     },
                     }
 362
                     // No test or globals provided - comment out to silence warnings
 363
                     // test: [
                     // '<%= app_files.jsunit %>'
    #
```

```
68
          src/app/api/models/helpdesk-session.coffee
                                                                                                                           View
             @@ -0,0 +1,68 @@
             +angular.module("doubtfire.api.models.helpdesk-session", [])
         3
             +# API endpoint for helpdesk sessions of staff working
         4
         5
             +.factory("HelpdeskSession", (resourcePlus) ->
         6
             + HelpdeskSession = resourcePlus "/helpdesk/sessions/:id", { id: "@id" }
         8
             + #
         9
             + # Clocks on a user for the specified duration (in hours) given. Durations
         10
             + # must be specified in decimal format. E.g., 1h 15m == 1.25 hrs
             + HelpdeskSession.clockOn = (userId, duration, callback) ->
                  clockOffTime = moment().add(duration, 'hours').format()
         14
                  dataToPost =
                    clock_off_time: clockOffTime
                    user id: userId
                  onSuccess = (response) -> callback(null, response)
         18
                  onFailure = (response) -> callback(response)
         19
                  HelpdeskSession.create(dataToPost).$promise.then(onSuccess, onFailure)
        20
             + #
             + # Gets the active working session of a specific userId at the helpdesk
             + #
        24
             + HelpdeskSession.getActiveSessions = (userId, callback) ->
                  onSuccess = (response) -> callback(null, response)
        26
                  onFailure = (response) -> callback(response)
                  HelpdeskSession.query({ user_id: userId, is_active: true }).$promise.then(onSuccess, onFailure)
        28
        29
             + #
         30
                # Gets the list of all tutors currently working
                HelpdeskSession.tutorsWorkingNow = (callback) ->
                  onSuccess = (response) -> callback(null, response)
                  onFailure = (response) -> callback(response)
         35
                  HelpdeskSession.query({ is_active: true }).$promise.then(onSuccess, onFailure)
         36
         37
             + #
         38
             + # Prematurely clocks off a session before it's default expiry time
         39
        40
             + HelpdeskSession.clockOffSession = (sessionId, callback) ->
        41
                  onSuccess = (response) -> callback(null, response)
        42
                  onFailure = (response) -> callback(response)
        43
                  HelpdeskSession.delete({ id: sessionId }).$promise.then(onSuccess, onFailure)
        44
        45
             + # Clocks off this session prematurely
```

```
47
    + #
48
     +
      HelpdeskSession.prototype.clockOff = (callback) ->
49
          HelpdeskSession.clockOffSession(this.id, callback)
50
51
    + #
    + # Returns the duration until the session expires
54
    + HelpdeskSession.prototype.timeUntilFinish = ->
          clockOffTime = moment(this.clock_off_time)
          moment.duration(clockOffTime.diff())
58
    + #
    + # Returns the currently working session for the user id provided, or
60
    + # null if no such session exists
61
    + #
62
     + HelpdeskSession.currentWorkingSession = (userId, callback) ->
63
          HelpdeskSession.getActiveSessions userId, (error, success) ->
64
            return callback(error) if error
65
            callback(null, success[0])
66
67
    + HelpdeskSession
68
    +)
```

```
21
          src/app/api/models/helpdesk-stats.coffee
                                                                                                                          View
                                                                                                                                 aa -0.0 +1.21 aa
             +angular.module("doubtfire.api.models.helpdesk-stats", [])
         3
             +# API endpoint for getting helpdesk stats
         4
         5
             +.factory("HelpdeskStats", ($http, $rootScope, $interval, api) ->
         6
             + HelpdeskStats = {}
         8
         9
             + # Gets the helpdesk statistics from the time specified by `from` to the
         10
             + # time specified by `to`.
             + # If to is null, statistics will fetch to now.
        13
             + # If from is null, all statistics from the start of time are returned.
        14
             + #
             + HelpdeskStats.get = (from, to, interval, callback) ->
        16
                  onSuccess = (response) -> callback(null, response.data)
                  onFailure = (response) -> callback(response)
        18
                  $http.get("#{api}/helpdesk/stats/dashgraph").then(onSuccess, onFailure)
        19
        20
             + HelpdeskStats
             +)
```

```
103
                                                                                                                         View
          src/app/api/models/helpdesk-ticket.coffee
                                                                                                                                 @@ -0,0 +1,103 @@
         1
             +angular.module("doubtfire.api.models.helpdesk-ticket", [])
         2
             +# API endpoint for serving helpdesk tickets
         5
             +.factory("HelpdeskTicket", (resourcePlus) ->
         6
             + HelpdeskTicket = resourcePlus "/helpdesk/tickets/:id", { id: "@id" }
         7
         8
         9
             + # Submits a new helpdesk ticket. Provide a project ID, description and task
        10
             + # def id. Project ID is required, whereas the others can be `null`. Callback
             + # is a function whose first parameter is error and second parameter is success
                # data.
```

```
13
14
     + HelpdeskTicket.submitTicket = (projectId, description, taskDefinitionId, callback) ->
          dataToPost =
16
           project_id: projectId
           description: description
           task_definition_id: taskDefinitionId
          onSuccess = (response) -> callback(null, response)
20
          onFailure = (response) -> callback(response)
          HelpdeskTicket.create(dataToPost)
                        .$promise
                        .then(onSuccess, onFailure)
24
    + #
26
    + # Gets all tickets by a specific state, optionally for the specified user id.
    + # If user is not specified, then all tickets will be returned.
28
29
     + HelpdeskTicket.getTicketsByState = (state, userId, callback) ->
30
          onSuccess = (response) -> callback(null, response)
          onFailure = (response) -> callback(response)
          HelpdeskTicket.query({ user_id: userId, shallow: userId?, filter: state })
                        .$promise
34
                        .then(onSuccess, onFailure)
36
37
       # Gets all unresolved tickets (optionally by user)
38
    + HelpdeskTicket.getUnresolvedTickets = (userId, callback) ->
40
          HelpdeskTicket.getTicketsByState('unresolved', userId, callback)
41
42
    + #
43
    + # Gets all resolved tickets (optionally by user)
44
45
    + HelpdeskTicket.getResolvedTickets = (userId, callback) ->
46
          HelpdeskTicket.getTicketsByState('resolved', userId, callback)
47
48
49
     + # Gets all closed tickets (optionally by user)
50
    + HelpdeskTicket.getClosedTickets = (userId, callback) ->
          HelpdeskTicket.getTicketsByState('closed', userId, callback)
53
54
    + #
55
    + # Closes a specified ticket with the given ID
56
    + #
57
    + HelpdeskTicket.closeTicket = (ticketId, callback) ->
58
          onSuccess = (response) -> callback(null, response)
          onFailure = (response) -> callback(response)
60
          HelpdeskTicket.delete({ id: ticketId })
61
                        .$promise
62
                        .then(onSuccess, onFailure)
63
64
    + #
65
    + # Prototype close ticket method
66
    + #
67
     + HelpdeskTicket.prototype.close = (callback) ->
          HelpdeskTicket.closeTicket(this.id, callback)
69
70
    + #
    + # Resolves a specified ticket with the given ID
73
    + HelpdeskTicket.resolveTicket = (ticketId, callback) ->
74
         onSuccess = (response) -> callback(null, response)
75
          onFailure = (response) -> callback(response)
```

```
76
                   HelpdeskTicket.delete({ id: ticketId, resolve: true })
                                 .$promise
         78
                                 .then(onSuccess, onFailure)
              +
         81
                 # Prototype resolve ticket method
         82
         83
                 HelpdeskTicket.prototype.resolve = (callback) ->
         84
              +
                   HelpdeskTicket.resolveTicket(this.id, callback)
         85
         86
              +
                #
         87
                 # Returns the duration since the ticket was open
              +
         88
              +
                HelpdeskTicket.prototype.lengthOfTimeOpen = ->
                   createdTime = moment(this.created_at)
         91
                   moment.duration(createdTime.diff())
         92
         93
                 # Checks if the user with the specified ticket has a ticket open already
         95
                 # and if so returns that ticket in the callback
         96
         97
                 HelpdeskTicket.currentOpenTicket = (userId, callback) ->
         98
                   HelpdeskTicket.getUnresolvedTickets userId, (error, success) ->
         99
                     return callback(error) if error
                     callback(null, success[0])
        101
        102
                 HelpdeskTicket
        103
              +)
3
         src/app/api/models/models.coffee
                                                                                                                            View
    *
              @@ -8,6 +8,9 @@ angular.module("doubtfire.api.models", [
   8
          8
                 "doubtfire.api.models.tutorial"
          9
                 "doubtfire.api.models.learning-alignments"
  10
         10
                 "doubtfire.api.models.intended-learning-outcome"
              + "doubtfire.api.models.helpdesk-ticket"
              + "doubtfire.api.models.helpdesk-session"
              + "doubtfire.api.models.helpdesk-stats"
         14
                 "doubtfire.api.models.task"
                 "doubtfire.api.models.task-comment"
                 "doubtfire.api.models.task-definition"
    $
1
         src/app/app.coffee
                                                                                                                             View
    *
              @@ -16,6 +16,7 @@ angular.module('doubtfire', [
  16
                 'doubtfire.tasks'
                 'doubtfire.projects'
  18
         18
                 'doubtfire.users'
                 'doubtfire.helpdesk'
  19
         20
                 'doubtfire.groups'
                 'doubtfire.visualisations'
               1)
         src/app/common/header/header.coffee
                                                                                                                            View
                                                                                                                                    @@ -1,7 +1,9 @@
          2
               # Controllers and providers related to the header/nav bar
   3
   4
              -angular.module('doubtfire.common.header', [])
              +angular.module('doubtfire.common.header', [
                'doubtfire.common.header.helpdesk-header'
```

```
6 +])
5 7
6 8 .controller("BasicHeaderCtrl", ($scope, $state, $modal, User, AboutDoubtfireModal, UserNotificationSettingsModal, UserS
7 9 $scope.menus = headerService.getMenus()
```

```
30
          src/app/common/header/header.scss
                                                                                                                              View
    #
              @@ -5,6 +5,16 @@
                 border-right: none;
  6
          6
                 margin-bottom:0;
          8
              + // Mobile responsive fixes
          9
                @media (min-width: $screen-md) {
         10
                   // Fix for dynamic content
                   .navbar-right {
                     width: 80%;
                     display: flex;
         14
                     justify-content: flex-end;
         16
              + }
  8
         18
                 .dropdown-units {
  9
         19
                   li:not(.divider) a {
  10
         20
                     padding-top: 0.5em;
    $
              @@ -18,6 +28,8 @@
  18
                     padding-left: 1.75ex;
  19
         29
                     flex: 1;
  20
         30
                     text-align: right;
                     overflow: hidden;
                     text-overflow: ellipsis;
         34
                 }
               }
    ***
              @@ -35,3 +47,21 @@ a.navbar-brand {
         47
                   margin: 0;
  36
         48
                 }
  37
         49
               }
         50
         51
              +@media (max-width: $screen-md) {
         52
              + .navbar {
                   position: fixed;
         54
                   top: 0;
                   left: 0;
         56
                   right: 0;
                   z-index: 9;
         58
              + }
         59
                 .navbar .navbar-nav .open ul.dropdown-menu {
         60
                   background-color: #fcfcfc;
         61
                   border-bottom: 1px solid #aaa;
         62
                   border-radius: 0;
         63
              + }
         64
                 body {
         65
                   padding-top: $navbar-height;
         66
                }
         67
              +}
```

```
18
           19
            <a class="dropdown-toggle" dropdown-toggle role="button"><span class="glyphicon glyphicon-{{menu.icon}}">{{menu.icon}}"><fmenu.icon}</pre>
            21
             ng-class="{active: link.class === 'active'}">
              <a href="{{link.url}}">{{link.name}}</a>
24
             18
           <helpdesk-header
    19
           projects="projects"
    20
            unit-roles="unitRoles">
           </helpdesk-header>
    23
           29
            <a role="button" class="dropdown-toggle" dropdown-toggle><span class="glyphicon glyphicon-book"></span> Units 
 #
```

```
57
          src/app/common/header/helpdesk-header.coffee
                                                                                                                        View
                                                                                                                               @@ -0.0 +1.57 @@
             +# Directive for controlling helpdesk dropdown
         3
         4
             +angular.module('doubtfire.common.header.helpdesk-header', [])
         5
             +.directive 'helpdeskHeader', ->
         6
             + restrict: 'E'
             + replace: true
         8
             + scope:
         9
                  projects: '='
        10
                  unitRoles: '='
             + templateUrl: 'common/header/helpdesk-header.tpl.html'
                controller: ($scope, $rootScope, currentUser, HelpdeskTicketModal, HelpdeskSessionModal, HelpdeskTicket, HelpdeskSess
        14
                  # This function updates the visibility of the element
        16
                  updateVisibility = ->
                    # These variables help us know if the user teaches or studies a unit
        18
                    $scope.studiesUnit = $scope.projects?.length > 0
        19
                    $scope.teachesUnit = $scope.unitRoles?.length > 0
                    # Only show the helpdesk dropown if I'm learning or teaching a unit
                    $scope.showHelpdeskDropdown = $scope.studiesUnit or $scope.teachesUnit
                    # Check if the user has a ticket|session open to switch which modals they can open
                    if $scope.studiesUnit
        24
                      HelpdeskTicket.currentOpenTicket $scope.currentUser.id, (error, data) ->
                        $scope.currentOpenTicket = data
        26
                    if $scope.teachesUnit
                      HelpdeskSession.currentWorkingSession $scope.currentUser.id, (error, data) ->
        28
                        $scope.currentWorkingSession = data
        30
                  # Watch for changes in projects and unitRoles length's and update the
                  # visibility in case they change
        34
                  $scope.$watch('projects.length', updateVisibility)
                  $scope.$watch('unitRoles.length', updateVisibility)
        38
                  # Current user binding
        39
                  $scope.currentUser = currentUser.profile
        41
                  # Watch the root scope for changes to the current ticket|session and set if needed
```

```
42
          $rootScope.$on 'CurrentOpenTicket', (event, ticket) ->
43
            $scope.currentOpenTicket = ticket
44
          $rootScope.$on 'CurrentWorkingSession', (event, session) ->
45
            $scope.currentWorkingSession = session
46
47
48
          # Opens the submit ticket modal
49
50
          $scope.openHelpdeskTicketModal = ->
            HelpdeskTicketModal.show $scope.currentOpenTicket
54
          # Opens the session modal
          $scope.openHelpdeskSessionModal = ->
57
            {\tt HelpdeskSessionModal.show} \ \$scope.currentWorkingSession
```

```
20
          src/app/common/header/helpdesk-header.scss
                                                                                                                        View
             @@ -0,0 +1,20 @@
         1
             +// Mobile responsive fixes
             +@media (min-width: $screen-md) {
         3
             + .helpdesk.header {
         4
                  display: inline;
                  .helpdesk-direct-link {
         6
                    padding-right: 0;
                    .badge {
         8
                      background-color: $doubtfire-color;
         9
                    }
         10
                  .dropdown-toggle {
                    float: right;
                  }
         14
             + }
        15
         16
             +@media (max-width: $screen-md) {
             + .helpdesk.header .helpdesk-direct-link {
        18
                  display: none;
        19
             + }
        20
             +}
```

```
33
         src/app/common/header/helpdesk-header.tpl.html
                                                                                                                     View
                                                                                                                            @@ -0,0 +1,33 @@
             +dropdown class="helpdesk header" ng-show="showHelpdeskDropdown">
             + <a class="helpdesk-direct-link pull-left" ng-click="openHelpdeskTicketModal()" ng-if="currentOpenTicket">
                  <span class="badge" tooltip="Ticket open for {{currentOpenTicket.lengthOfTimeOpen().humanize()}}" tooltip=placement</pre>
         4
                   <i class="fa fa-ticket"></i>
                  </span>
         6
             + </a>>
             + <a class="helpdesk-direct-link pull-left" ng-click="openHelpdeskSessionModal()" ng-if="currentWorkingSession">
         8
                  <span class="badge" tooltip="You finish working in {{currentWorkingSession.timeUntilFinish().humanize()}}" tooltip-</pre>
         9
                   <i class="fa fa-clock-o"></i>
        10
                  </span>
               <a class="dropdown-toggle" dropdown-toggle>
        13
                  <i class="fa fa-ambulance"></i>
        14
                 Helpdesk
                 <b class="caret"></b>
        16
                18
                  ng-if="studiesUnit">
        19
                    <a ng-click="openHelpdeskTicketModal()">
```

```
20
            {{ currentOpenTicket ? "View Open Ticket" : "Submit a Ticket" }}
          </a>
        ng-if="teachesUnit">
          <a ng-click="openHelpdeskSessionModal()">
            {{ currentWorkingSession ? "Clock Off" : "Clock On" }}
26
          </a>
        28
        class="divider">
29
        <
30
          <a ui-sref="helpdesk"> View Helpdesk Dashboard </a>
        + 
    +
```

```
20
         src/app/common/modals/confirmation-modal.tpl.html
                                                                                                                          View
    $
             @@ -6,17 +6,17 @@ <h3 class="modal-title">
  6
         6
                   <small>Please confirm that you want to perform this action.
                 </h3>
  8
         8
                </div>
  9
             - <div class="modal-body">
                 {{message}}
         9
             + <div class="modal-body clearfix">
        10
                 {{message}}
                 </div>
        14
                <div class="modal-footer clearfix">
                 <div class="btn-group">
                   <label class="btn btn-success" ng-click="confirmAction()">
                     <i class="fa fa-check"></i> Confirm
                   </label>
 17
                   <label class="btn btn-danger" ng-click="cancelAction()">
 18
                     <i class="fa fa-times"></i> Cancel
 19
                   </label>
                 </div>
                 <button class="btn btn-danger" ng-click="cancelAction()">
        16
                   <i class="fa fa-times"></i> Cancel
                 </button>
                 <button class="btn btn-success" ng-click="confirmAction()">
        18
                   <i class="fa fa-check"></i> Confirm
        20
                 </button>
                </div>
              </div>
```

```
10
          src/app/common/services/project-service.coffee
                                                                                                                           View 📮
    *
             @@ -26,7 +26,7 @@ angular.module("doubtfire.common.services.projects", [])
                  projectService.loadedProjects = null
 28
                projectService.getProjects = ( callback ) ->
 29
                  if ! projectService.loadedProjects?
        29
                  unless projectService.loadedProjects?
         30
                    projectService.loadedProjects = []
                    Project.querv(
                       (projects) ->
    $
             @@ -43,6 +43,14 @@ angular.module("doubtfire.common.services.projects", [])
 43
        43
  44
        44
                  projectService.loadedProjects
  45
        45
        46
        47
             + # Finds a project with the given id
```

```
Comparing doubtfire-Ims:develop...final-year-project:feature/helpdesk-ticketing · doubtfire-Ims/doubtfire-web
                                                                                                                             16/10/16, 11:51 am
             48
                 + #
             49
                     projectService.findProject = (id, callback) ->
                  +
            50
                       projectService.getProjects (projects) ->
             51
                         projFound = _.find(projects, (p) -> p.project_id is id)
                         callback(projFound)
      46
            54
      47
                     projects's can update their task stats
      48
                     converts the | delimited stats to its component arrays
        #
    2
             src/app/common/services/unit-service.coffee
                                                                                                                               View
                                                                                                                                      $
                  @@ -193,7 +193,7 @@ angular.module("doubtfire.common.services.units", [])
            193
                             (response) ->
     194
            194
                               alertService.add("danger", "Grade was not updated: #{response.data.error}", 8000)
                         projectService.updateTaskStats(student, student.stats)
                         projectService.updateTaskStats(student, student.stats) if student.stats
                         projectService.addTaskDetailsToProject(student, unit)
     198
            198
     199
            199
                       unit.getGroups = (group_set, group_callback) ->
        *
    33
                                                                                                                                      src/app/helpdesk/helpdesk-ticket/helpdesk-ticket.coffee
                                                                                                                               View
                 @@ -0.0 +1.33 @@
                  +angular.module('doubtfire.helpdesk.helpdesk-ticket', [])
              2
              3
                 +# Directive to display information related to a helpdesk ticket
              4
                 +#
              5
                 +.directive('helpdeskTicket', ->
              6
                  + restrict: 'E'
                    templateUrl: 'helpdesk/helpdesk-ticket.tpl.html'
              8
                     replace: true
              9
                 + scope:
             10
                       ticket: '='
                     controller: ($scope, HelpdeskTicket, projectService, unitService, HelpdeskTicketModal) ->
             14
                       # Returns warning style for ticket
```

```
$scope.warningStyle = ->
            minsWaiting = -\$scope.ticket.lengthOfTimeOpen().asMinutes()
18
            if minsWaiting < 3</pre>
19
              'success'
20
            else if 3 <= minsWaiting < 6
              'primary'
            else if 6 <= minsWaiting < 9
              'warning'
            else if minsWaiting >= 9
              'danger'
          # Opens the submit ticket modal
29
30
          $scope.openHelpdeskTicketModal = ->
            return if $scope.isLoading
            HelpdeskTicketModal.show $scope.ticket
    +)
```

```
49
       src/app/helpdesk/helpdesk-ticket.scss
                                                                                            View
```

```
@@ -0,0 +1,49 @@
    +.helpdesk-ticket {
    + $br: 8px;
    + font-size: 1.3em;
    + // Mobile responsive fixes
 5
    + @media (max-width: $screen-md) {
6
        margin-bottom: 1em;
 7
        .unit, .unit-name, .task-name {
8
          text-align: center !important;
9
           width: 100% !important;
10
    + }
    + header, .content {
         padding: 8px;
13
    + }
14
    + header {
16
         background-color: $doubtfire-color;
         color: #fff;
18
         font-size: 1.25em;
19
         border-radius: $br $br 0 0;
20
         line-height: 1.25;
    + .content {
         color: #525252;
24
         background-color: #ecedef;
25
         .unit-name {
26
           text-overflow: ellipsis;
           width: 65%;
28
           text-align: right;
           overflow: hidden;
30
           white-space: nowrap;
32
    + }
    + .content .loading {
34
         text-align: center;
         font-size: 2em;
36
    + }
    + hr {
38
         border: 1px dashed grey;
39
40
    + border: 2px solid #ecedef;
41
    + border-radius: $br;
42
    + transition: all 0.25s ease;
43
    + &:hover {
44
         position: relative;
45
         top: -10px;
46
         cursor: pointer;
47
         box-shadow: 0px 0px 10px 0px rgba(0,0,0,0.4);
48
     + }
49
    +}
```

```
29
          src/app/helpdesk/helpdesk-ticket/helpdesk-ticket.tpl.html
                                                                                                                         View
             @@ -0,0 +1,29 @@
         1
             +<div class="helpdesk-ticket" ng-click="openHelpdeskTicketModal()">
         2
             + <header ng-if="isLoading">
         3
                  <strong>Doubtfire</strong> Helpdesk Ticket
         4
             + </header><!--/ticket-header-->
         5
             + <header ng-if="!isLoading">
         6
                  <strong>{{ticket.project.student_name}}</strong> <span class="pull-right">#{{ticket.position}}</span>
             + </header><!--/ticket-header-->
         8
             + <div class="content">
         9
                 <div class="loading" ng-if="isLoading">
```

```
10
                    <i class="fa fa-spinner fa-pulse"></i>
                  </div><!--/loading-ticket-->
                  <div ng-if="!isLoading">
                    <div class="unit">
                      <label class="label label-info">{{ticket.project.unit_code}}</label>
                      <strong class="unit-name pull-right">{{ticket.project.unit_name}}</strong>
         16
                    <div class="task-name text-right">
         18
                      {{ticket.task_definition.name}}
         19
                    </div>
        20
                    <hr>
                    <div class="text-center">
                     Waiting for
                      <strong class="text-{{warningStyle()}}">
        24
                        {{ticket.lengthOfTimeOpen().humanize()}}
                      </strong>
        26
                    </div>
        27
                  </div><!--/data-loaded-->
        28
             + </div><!--/ticket-content-->
        29
             +</div>
5
         src/app/helpdesk/helpdesk.coffee
                                                                                                                         View
                                                                                                                                @@ -0,0 +1,5 @@
             +angular.module('doubtfire.helpdesk', [
                'doubtfire.helpdesk.modals'
                'doubtfire.helpdesk.states'
             + 'doubtfire.helpdesk.helpdesk-ticket'
         5
             +])
4
         src/app/helpdesk/modals.coffee
                                                                                                                         View
                                                                                                                                @@ -0.0 +1.4 @@
             +angular.module('doubtfire.helpdesk.modals', [
             + 'doubtfire.helpdesk.modals.ticket-modal'
         3
             + 'doubtfire.helpdesk.modals.session-modal'
             +1)
81
          src/app/helpdesk/modals/session-modal/session-modal.coffee
                                                                                                                         View
                                                                                                                               @@ -0,0 +1,81 @@
         1
             +#
             +# The helpdesk session modal is the modal by which staff can clock on and clock
         3
             +# off from the helpdesk
         4
             +#
         5
             +angular.module('doubtfire.helpdesk.modals.session-modal', [])
         6
         7
             +.factory('HelpdeskSessionModal', ($modal) ->
         8
             + HelpdeskSessionModal = {}
         9
         10
             + # Pass in the user, project
        13
             + HelpdeskSessionModal.show = (session) ->
        14
                  $modal.open
                    templateUrl: 'helpdesk/modals/session-modal.tpl.html'
        16
                    controller: 'HelpdeskSessionModal'
                    resolve:
        18
                      session: -> session
        19
        20
                HelpdeskSessionModal
             +)
             +
```

```
+.controller('HelpdeskSessionModal', ($scope, $state, $rootScope, $interval, $modalInstance, HelpdeskSession, Confirmati
24
     + $scope.clockOffState = session? # I can clock off if I was given a session
       $scope.clockOnState = !session? # I can clock on if I wasn't given a session
26
    + # Strip the profile
28
    + $scope.currentUser = currentUser.profile
29
30
    + # Duration to clock on
    + $scope.duration = { hours: null }
    + #
34
    + # Updates the automatic clock off time
35
    + #
36
    + updateAutomaticClockOffTime = (newDuration) ->
          return unless newDuration?
          $scope.automaticClockOffTime =
            moment().add($scope.duration.hours, 'hours')
40
41
    + # Watch duration to calculate the automaticClockOffTime
42
    + $scope.$watch 'duration.hours', updateAutomaticClockOffTime
43
44
    + # If we have a session, work out the automatic clock off time
45
    + if $scope.clockOffState
46
          $scope.automaticClockOffTime = moment(session.clock_off_time)
47
          updateTimeLeft = ->
48
           $scope.timeLeft = moment.duration($scope.automaticClockOffTime.diff())
49
          updateTimeLeft()
50
          updateTimeLeftInterval = $interval updateTimeLeft, 1000
          # Must explicitly destroy the time interval when the controller ends!
          $scope.$on '$destroy', ->
           $interval.cancel(updateTimeLeftInterval)
54
    + #
56
     + # Clocks on the session
58
     + $scope.clockOn = ->
         clockOnCallback = (error, success) ->
60
           if success
61
              $modalInstance.close(success)
62
              $rootScope.$broadcast('CurrentWorkingSession', success)
63
              alertService.add("success", "Clocked on successfully.", 2000)
64
           if error
65
              alertService.add("danger", "Error: #{error.data.error}", 6000)
66
          HelpdeskSession.clockOn(currentUser.id, $scope.duration.hours, clockOnCallback)
67
68
69
       # Clocks off the session
70
    + #
    + $scope.clockOff = ->
         clockOffCallback = (error, success) ->
           if success
74
              $modalInstance.close(success)
              $rootScope.$broadcast('CurrentWorkingSession', null)
              alertService.add("success", "You have been clocked off.", 2000)
78
              alertService.add("danger", "Error: #{error.data.error}", 6000)
79
          ConfirmationModal.show 'Clock off now', "You still have #{session.timeUntilFinish().humanize()} left to work. Are you
80
            session.clockOff(clockOffCallback)
81
    +)
```

```
62
        src/app/helpdesk/modals/session-modal/session-modal.tpl.html
                                                                                                        View 🔲
           @@ -0.0 +1.62 @@
        1
           +<div class="session-modal">
        2
           + <form class="form-horizontal" name="sessionForm" role="form">
                <div class="modal-header">
        4
                 <h3>Clock {{clockOnState ? 'on to' : 'off from'}} the helpdesk</h3>
        5
               </div><!--/new-ticket-header-->
               <div class="modal-body text-center clearfix">
                 <div class="col-sm-12" ng-if="clockOnState">
        8
                   <label>
        9
                    Please enter how long you are working at the helpdesk for.
       10
                   </label>
                   <div class="input-group duration-entry col-sm-4">
                     <input name="duration"</pre>
                           ng-model="duration.hours"
                           class="form-control input-lg"
                           type="number"
       16
                           placeholder="2"
                           step=".25"
       18
                           min="0.25"
       19
                           max="8"
       20
                           required>
                     <span class="input-group-addon">hours</span>
                   </div>
       23
                   24
                     Please enter duration as a decimal number. For example, 1 hour and
                     15 minutes would be represented as <code>1.25</code> hours.
       26
                   28
                    You must work for at least fifteen minutes.
                   You can't work more than eight hours.
                   34
                     You will be automatically clocked off at <strong>{{automaticClockOffTime.format('hh:mm a')}}</strong>,
                     but you can manually clock off at an earlier time.
       36
                   </n>
                 </div><!--/clock-on-state-->
                 <div class="col-sm-12" ng-if="clockOffState">
                   <label>
       40
                    You finish working at the helpdesk in
       41
                   </label>
       42
                   <div class="time-left">
       43
                    {{timeLeft.hours()}}h {{timeLeft.minutes()}}m {{timeLeft.seconds()}}s
       44
                   </div>
       45
                   46
                    (That's at {{automaticClockOffTime.format('hh:mm a')}})
       47
                   48
                 </div>
       49
                </div>
       50
                <div class="modal-footer text-right">
                 <button ng-click="$dismiss()" class="btn btn-primary">
```

```
52
             Close
           </button>
54
           <button ng-disabled="!sessionForm.$valid" ng-click="clockOn()" class="btn btn-success" ng-if="clockOnState">
55
             <i class="fa fa-clock-o"></i> <i class="fa fa-sign-in"></i> Clock On
56
           </button>
57
           <button ng-click="clockOff()" class="btn btn-danger" ng-if="clockOffState">
58
             <i class="fa fa-clock-0"></i> <i class="fa fa-sign-out"></i> Clock Off Now
59
           </button>
60
         </div>
61
    + </form>
62
    +</div>
```

```
107
           src/app/helpdesk/modals/ticket-modal/ticket-modal.coffee
                                                                                                                          View
                                                                                                                                 aa -0.0 +1.107 aa
         1
             +# The helpdesk ticket modal is the modal by which students can submit
             +# new tickets to or review their ticket information
         5
             +angular.module('doubtfire.helpdesk.modals.ticket-modal', [])
         6
         7
             +.factory('HelpdeskTicketModal', ($modal) ->
         8
             + HelpdeskTicketModal = {}
         9
         10
             + # Pass in the user, project
             + HelpdeskTicketModal.show = (ticket) ->
         14
                  $modal.open
                    templateUrl: 'helpdesk/modals/ticket-modal/ticket-modal.tpl.html'
                    controller: 'HelpdeskTicketModal'
                    resolve:
        18
                     ticket: -> ticket
        19
        20
             + HelpdeskTicketModal
             +)
        23
             +.controller('HelpdeskTicketModal', ($scope, $state, $rootScope, $modalInstance, HelpdeskTicket, ConfirmationModal, aler
        24
             + $scope.isNew = !ticket?
             + $scope.ticket = ticket || new HelpdeskTicket()
        26
        28
             + # Callback when a task definition has changed
        29
         30
             + $scope.taskDefSelected = (taskDef) ->
                  $scope.ticket.task_definition = taskDef
             + # Use project service to get projects
         34
             + unless $scope.ticket.project?
                  projectService.getProjects (projects) ->
         36
                    $scope.projects = projects
                    $scope.ticket.project = projects[0] if projects.length == 1
        38
                    unless $scope.isNew
                      # Use the ticket information to find the correct project
        40
                      projectService.findProject $scope.ticket.project_id, (p) ->
        41
                        $scope.ticket.project = p
        42
        43
             + #
        44
             + # Watch when a project is changed to update the selected unit
        45
        46
             + $scope.$watch 'ticket.project.project_id', (newId) ->
        47
                  return unless newId?
        48
                  $scope.taskDefSelected null if $scope.isNew # reset which task selected
```

```
49
          unitService.getUnit $scope.ticket.project.unit_id, false, false, (response) ->
50
            $scope.ticket.unit = response
            # If ticket was provided, we need to look up the task def now from the
52
            # unit loaded if it has one
             if not $scope.isNew and $scope.ticket.task_definition_id?
54
               taskDef = $scope.ticket.unit.taskDef($scope.ticket.task_definition_id)
               $scope.taskDefSelected taskDef
56
     +
     +
       # Sends a HTTP request to open a ticket
     + #
        $scope.openTicket = ->
61
          openTicketCallback = (error, success) ->
62
            if success
63
              $modalInstance.close(success)
              $rootScope.$broadcast('CurrentOpenTicket', success)
65
              alertService.add("success", "Ticket created successfully.", 2000)
66
67
              alertService.add("danger", "Error: #{error.data.error}", 6000)
          HelpdeskTicket.submitTicket(
69
             $scope.ticket.project.project_id,
 70
             $scope.ticket.description,
            $scope.ticket.task_definition?.id,
             openTicketCallback
 74
 76
        # Sends a request to resolve the ticket
 78
     + $scope.resolveTicket = ->
 79
          # TODO: Resolved by whom?
          resolveTicketCallback = (error, success) ->
81
            if success
82
              $modalInstance.close(success)
83
              $rootScope.$broadcast('CurrentOpenTicket', null)
84
              alertService.add("success", "Ticket resolved!", 2000)
85
86
               alertService.add("danger", "Error: #{error.data.error}", 6000)
87
          $scope.ticket.resolve(resolveTicketCallback)
88
89
90
     + # Sends a request to close the ticket
91
     + #
92
        $scope.closeTicket = ->
93
          closeTicketCallback = (error, success) ->
            if success
95
               $modalInstance.close(success)
96
              $rootScope.$broadcast('CurrentOpenTicket', null)
              alertService.add("success", "Ticket closed.", 2000)
97
98
            if error
99
               alertService.add("danger", "Error: #{error.data.error}", 6000)
          ConfirmationModal.show 'Close Ticket', 'Are you sure you want to close the ticket without resolving the issue?', ->
101
             $scope.ticket.close(closeTicketCallback)
102
103
104
     + # Goes to the selected task
105
106
     + $scope.goToSelectedTask = $modalInstance.dismiss
107
     +)
```

```
14 src/app/helpdesk/modals/ticket-modal.scss View ... @@ -0,0 +1,14 @@
```

```
+.ticket-modal {
2
    + .unit-selection .dropdown {
3
         width: 100%:
4
         button {
           text-align: right;
6
    +
7
    + }
8
       label {
9
    +
        margin-right: 1ex;
10
    + }
    + .unit-selection .dropdown-menu > li > a {
         padding: 1em;
13
    + }
14
    +}
```

```
103
                      src/app/helpdesk/modals/ticket-modal/ticket-modal.tpl.html
                                                                                                                                                                                                                                                                   View
                           @@ -0.0 +1.103 @@
                   1
                           +<div class="ticket-modal">
                   2
                           + <form class="form-horizontal" role="form">
                                     <div class="modal-header" ng-show="isNew">
                   3
                   4
                                         <h3>Submit a Ticket</h3>
                                         6
                                             Having trouble with something? Get help from a tutor at the programming
                                             helpdesk, located at ATC620.
                   8
                                         9
                                     </div><!--/new-ticket-header-->
                  10
                                     <div class="modal-header" ng-hide="isNew">
                                         <h3>Show Ticket</h3>
                                     </div><!--/existing-ticket-header-->
                                     <div class="modal-body">
                                         <div class="form-group unit-selection">
                                             <label class="col-sm-3 control-label">Unit</label>
                  16
                                             <div class="col-sm-7">
                                                 18
                                                     <label class="label label-info small">{{ticket.project.unit_code}}</label>
                  19
                                                     <span class="unit-name">{{ticket.project.unit_name}}</span>
                 20
                                                 \verb|-div class="btn-group dropdown" ng-if="projects.length > 1 \&\& isNew" dropdown is-open="status.isopen">- length | isNew dropdown is-open | isNew dropdown is-open | isNew dropdown is-open | isNew dropdown is-open | i
                                                     <button type="button" class="btn btn-default form-control dropdown-toggle" dropdown-toggle>
                                                         <span ng-show="ticket.project" class="pull-left">
                 24
                                                             <label class="label label-info small">{{ticket.project.unit_code}}</label>
                                                             <span class="unit-name">{{ticket.project.unit_name}}</span>
                 26
                                                         </span>
                                                         <span ng-hide="ticket.project" class="pull-left">
                  28
                                                             Select a Unit
                  29
                                                         </span>
                  30
                                                         <span class="caret"></span>
                                                     </button>
                                                     <a ng-click="ticket.project = project">
                                                                 <label class="label label-info small">{{project.unit_code}}</label>
                  36
                                                                 <span class="unit-name">{{project.unit_name}}</span>
                                                             </a>>
                  38
                                                         40
                                                 </div>
                 41
                                             </div>
                 42
                                         </div><!--/unit-selection-->
                 43
                                         <div class="form-group" ng-if="ticket.unit">
                 44
                                             <label class="col-sm-3 control-label">Task</label>
                 45
                                             <div class="col-sm-7" ng-if="isNew">
```

```
46
                <task-definition-selector button-style="default" unit="ticket.unit" ng-model="ticket.task_definition" on-sele
47
                48
                 Select a task that you want help with, or leave blank if you have a
49
                  general question.
                </div><!--/task-selector-if-new-->
              <div class="col-sm-7" ng-if="!isNew">
                <div ng-if="ticket.task_definition" class="selected-task-detail">
54
                 <label class="label label-info">{{ticket.task_definition.abbreviation}}</label>
                 {{ticket.task_definition.name}}
56
                </div>
                <div class="text-muted form-control-static" ng-hide="ticket.task_definition">
                 No task provided
                </div>
              </div>
61
            </div><!--/task-selection-->
62
            <div class="form-group">
63
              <label class="col-sm-3 control-label">Description</label>
              <div class="col-sm-7" ng-if="isNew">
                <markdown-editor ng-model="ticket.description" placeholder="Enter description" height="100"></markdown-editor</pre>
66
                67
                 Give the tutor some context to your issue by providing a description
68
                 of your question. {{description}}
69
                70
              </div>
              <div class="col-sm-7" ng-if="!isNew">
                <div ng-show="ticket.description" class"form-control-static" ng-bind-html="ticket.description | markdown"></d</pre>
                74
                 No description provided
                76
              </div>
            </div><!--/description-->
            <div class="form-group" ng-if="!isNew">
              <label class="col-sm-3 control-label">In Queue For</label>
              <div class="col-sm-7 form-control-static">
81
               {{ticket.lengthOfTimeOpen().humanize()}}
82
                <small class="text-muted">
83
                 ({{ticket.created_at | date:'shortTime'}})
84
                </small>
85
              </div>
86
            </div>
87
          </div>
88
          <div class="modal-footer text-right">
89
            <button ng-click="$dismiss()" class="btn btn-primary">
90
91
            </button>
92
            <button ng-disabled="ticket.project == null" ng-click="openTicket()" class="btn btn-success" ng-if="isNew">
93
             <i class="fa fa-ticket"></i> <i class="fa fa-plus"></i> Submit Ticket
            </button>
95
            <button ng-click="closeTicket()" class="btn btn-danger" ng-if="!isNew">
96
              <i class="fa fa-ticket"></i> <i class="fa fa-trash-o"></i> Close Ticket
97
            </button>
98
            <button ng-click="resolveTicket()" class="btn btn-success" ng-if="!isNew" if-role="Tutor Convenor Admin">
              <i class="fa fa-ticket"></i> <i class="fa fa-check"></i> Resolve Ticket
            </button>
101
          </div><!--/footer-->
102
     + </form>
103
     +</div>
```

```
166 src/app/helpdesk/states/dashboard/coffee

... | @@ -0,0 +1,166 @@ | +#
```

```
2
    +# The programming helpdesk dashboard
 3
    +#
4
    +angular.module('doubtfire.helpdesk.states.dashboard', [])
 5
    +.config((headerServiceProvider) ->
 6
    + helpdeskDashboardState =
         url: "/helpdesk"
 8
         views:
 9
           main:
10
             controller: "HelpdeskDashboardCtrl"
             templateUrl: "helpdesk/states/dashboard/dashboard.tpl.html"
         data:
            pageTitle: "_Programming Helpdesk_"
14
            roleWhitelist: ['Student', 'Tutor', 'Convenor', 'Admin']
    + headerServiceProvider.state 'helpdesk', helpdeskDashboardState
16
    +)
    +.controller("HelpdeskDashboardCtrl", ($scope, $timeout, $rootScope, $interval, $state, HelpdeskStats, HelpdeskTicket, H
18
    + # Internal poll interval
19
    + pollInterval = null
20
    + # How long the duration is between each poll, in seconds
21
    + intervalDuration = 30
24
    + # Returns true if the stats are already being polled
25
26
       isPolling = -> pollInterval isnt null
28
    + # Keep track of new stats|staff|tickets in these variable
29
    + $scope.data =
         tickets: []
         tutorsWorking: []
34
    + # This function is called when tickets have been updated
36
    + ticketsUpdated = (error, tickets) ->
          # Only update what we need to
          resolvedTickets = _.differenceBy($scope.data.tickets, tickets, 'id')
39
                        = _.differenceBy(tickets, $scope.data.tickets, 'id')
40
          # Remove resolved tickets + merge new tickets
41
          $scope.data.tickets =
42
            _.chain($scope.data.tickets)
43
           .filter((t) -> !_.find(resolvedTickets, { id: t.id })?)
44
           .concat(newTickets)
45
            .map((ticket, idx) ->
46
             # Add ticket's position
47
             ticket.position = idx + 1
48
             ticket
49
            .value()
    + #
53
    + # This function is called when stats have been updated
54
    + #
    + statsUpdated = (error, stats) ->
56
          statusColours = {'Quiet': 'primary', 'Available': 'warning', 'BUSY': 'danger'}
          statusEmojis = {'Quiet': '\earrow', 'Available': '\earrow', 'BUSY': '\widetilde{A}'}
58
          statsTimes = _.keys(stats)
59
          lastRecord = stats[_.last(statsTimes)]
60
          avgWaitTime = $scope.avgWaitTime = lastRecord.average_wait_time_in_mins
61
          numUnresolved = $scope.numUnresolved = lastRecord.number_of_unresolved_tickets
62
          # TODO: Work out the right values
63
          $scope.averageWaitTimeStatus =
64
           if avgWaitTime < 6</pre>
```

```
65
              'Quiet'
66
             else if 6 <= avgWaitTime < 9</pre>
67
               'Available'
68
             else if avgWaitTime > 9
69
               'BUSY'
 70
           numberUnresolvedStatus =
             if numUnresolved < 6
             else if 6 <= numUnresolved < 9
 74
               'Available'
             else if numUnresolved > 9
 76
               'BUSY'
           $scope.averageWaitTimeEmoji = statusEmojis[$scope.averageWaitTimeStatus]
 78
           $scope.averageWaitTimeColor = statusColours[$scope.averageWaitTimeStatus]
           $scope.numberUnresolvedColor = statusColours[numberUnresolvedStatus]
 80
           # Angular nvd3 accepts milliseconds not seconds for unix time
81
           $scope.graphData = stats
82
83
     + #
84
     + # This function is called when staff have been updated
85
86
     + tutorsUpdated = (error, sessions) ->
87
           # Same concept as ticketsUpdated
88
           sessionsFinished = _.differenceBy($scope.data.tutorsWorking, sessions, 'id')
89
           sessionsStarted = _.differenceBy(sessions, $scope.data.tutorsWorking, 'id')
90
           $scope.data.tutorsWorking =
91
             _.chain($scope.data.tutorsWorking)
 92
             .filter((s) -> !_.find(sessionsFinished, { id: s.id })?)
 93
             .concat(sessionsStarted)
             .map((s) ->
 95
              finishIn = s.timeUntilFinish()
96
              s.minuteDisplay = Math.round(finishIn.minutes() + (finishIn.seconds() * 0.01))
97
               s.hourDisplay = finishIn.hours()
98
              if s.minuteDisplay == 60
                s.minuteDisplay = 0
100
                s.hourDisplay += 1
101
              s.showHour = s.hourDisplay > 0
102
103
104
             .value()
105
           $scope.helpdeskClosed = $scope.data.tutorsWorking.length is 0
106
           $scope.helpdeskOpen = not $scope.helpdeskClosed
107
108
109
     + # If clock on event, refresh immediately
110
     + $rootScope.$on 'CurrentWorkingSession', (event, session) ->
           $scope.pollNow()
114
     + #
     + # Begins polling for stats
116
     + #
     + startPolling = (interval = intervalDuration) ->
118
           return if isPolling()
119
           pollForStats = ->
120
             # We know if it's the first poll if we are not polling yet!
             isFirstInterval = not isPolling()
             # First poll we want to get the last hour's worth
             subtractValue = if isFirstInterval then 1 * 60 * 60 else interval
124
             useInterval = if isFirstInterval then null else interval
125
             from = moment().subtract(subtractValue, 'seconds').format()
126
             to = moment().format()
             HelpdeskStats.get from, to, useInterval, (error, response) ->
```

```
128
               $scope.lastUpdated = moment()
129
               statsUpdated(error, response)
130
           pollForTickets = ->
            HelpdeskTicket.getUnresolvedTickets null, (error, response) ->
               $scope.lastUpdated = moment()
               ticketsUpdated(error, response)
134
           pollForTutors = ->
            HelpdeskSession.tutorsWorkingNow (error, response) ->
136
               $scope.lastUpdated = moment()
               tutorsUpdated(error, response)
138
           pollFunction = ->
            pollForTickets()
140
            pollForTutors()
141
            pollForStats()
142
           $scope.pollNow = ->
143
            pollFunction()
144
           # Call poll at least once to start now
145
           $scope.pollNow()
146
           pollInterval = $interval pollFunction, interval * 1000 # milliseconds
147
148
     + #
149
     + # Stops helpdesk statistics from polling
150
        stopPolling = ->
           return unless isPolling()
           $interval.cancel(pollInterval)
           pollInterval = null
     + #
158
     + # Opens the session modal
     + #
160
     + $scope.openHelpdeskSessionModal = HelpdeskSessionModal.show
     + # When we load, start polling at intervalDuration seconds
163
     + startPolling(intervalDuration)
164
     + # When we unload, stop polling
     + $scope.$on '$destroy', stopPolling
166
```

```
105
           src/app/helpdesk/states/dashboard.scss
                                                                                                                        View __
             @@ -0,0 +1,105 @@
             +// This mixin is used to hide on mobile devices specific rows
             +@mixin hide-on-mobile {
             + @extend .hidden-xs;
             + @extend .hidden-sm;
         5
             +}
         6
         7
             +#helpdesk-dashboard {
         8
             + // Fix layout for medium
         9
             + @media (min-width: $screen-md) {
        10
                  height: calc(100vh - #{$navbar-height});
                  min-height: 600px;
                  display: flex;
        13
                  flex-direction: column;
        14
                  .row {
                    display: flex;
        16
        17
                  .status.row {
        18
                    flex: 1;
        19
        20
                  .graph.row {
```

```
flex: 2;
          .ticket.row {
24
           flex: 1.5;
25
26
    + }
28
    + // Hide all rows on mobile except the tickets row
29
    + .row:not([class^="ticket"]) {
30
         @include hide-on-mobile;
    + }
    + // Give rows some space between eachother
    + .row {
34
         margin: 15px auto 0 auto;
35
    + }
36
37
    + // Help Header
38
    + h3.help {
39
         @extend .text-muted;
40
         margin-top: 0;
41
         text-transform: uppercase;
42
         font-weight: bold;
43
          font-size: 1.2em;
44
    + }
45
46
    + // Status Row
47
       .status.row {
48
          font-size: 2em;
49
          text-align: center;
50
          .number {
           display: block;
           font-size: 4em;
           line-height: 1;
54
    + }
56
    + // Tutor panel
57
    + .tutors-working {
58
          align-self: center;
59
          .list-group {
60
           max-height: 300px;
61
           overflow-y: scroll;
62
63
          .list-group-item-heading {
64
           font-size: 1.5em;
65
           .name {
66
             font-weight: bold;
67
68
69
          .list-group-item-text {
70
           margin: 0.7em auto 1em auto;
           font-size: 1.2em;
           display: flex;
           flex-wrap: wrap;
74
           .label:not(:last-of-type) {
             margin-right: 1ex;
76
              margin-bottom: 1ex;
78
79
    + }
80
    + // Ticket Row
81
       .ticket.row {
82
         justify-content: center;
83
    + }
```

```
84
     + // Helpdesk Closed
85
        .helpdesk-closed {
86
           height: 100%;
87
           margin-top: 2em;
           display: flex;
89
           align-items: center;
90
           text-align: center;
91
           font-size: 1.5em;
92
           .message {
93
             margin: 0 auto;
94
             button {
95
               margin-top: 1em;
96
             }
97
             .title {
               font-weight: bold;
99
               display: block;
100
               margin-top: 1em;
101
               font-size: 1.5em;
102
103
           }
104
        }
105
     +}
```

```
74
                                                                                                                           View
          src/app/helpdesk/states/dashboard/dashboard.tpl.html
                                                                                                                                  @@ -0,0 +1,74 @@
             +<div id="helpdesk-dashboard" class="clearfix">
             + <div class="helpdesk-closed">
         3
                  <div class="message" ng-if="helpdeskClosed">
         4
                    <i class='fa fa-hourglass-end fa-4x'></i>
                    <span class="title"> Helpdesk Closed </span>
         6
                    No tutors are working right now<br>
                    <button ng-click="openHelpdeskSessionModal()" if-role="Tutor Convenor Admin" class="btn btn-lg btn-success">
         8
                      <i class="fa fa-clock-o"></i> <i class="fa fa-sign-in"></i> Clock On
         9
                    </button>
         10
                  </div>
                  <div class="message" ng-if="helpdeskClosed == null && helpdeskOpen == null">
                    <i class="fa fa-spinner fa-pulse fa-4x"></i>
                  </div>
        14
             + </div><!--/helpdesk-closed-->
                <div ng-if="helpdesk0pen">
         16
                  <div class="status row">
                    <div class="people-in-queue col-sm-4 text-{{numberUnresolvedColor}}">
         18
                      <span class="number">
         19
                        {{numUnresolved}}
         20
                      </span>
                      people in queue
                    </div><!--/people-in-queue-->
                    <div class="emoji-face col-sm-4">
        24
                      <span class="number">{{averageWaitTimeEmoji}}</span> {{averageWaitTimeStatus}}
                    </div><!--/emoji-face-->
                    <div class="average-wait-time col-sm-4 text-{{averageWaitTimeColor}}">
                      <span class="number">
        28
                        {{avgWaitTime}}m
        29
                      </span>
         30
                      average wait time
                    </div><!--/average-wait-time-->
                  </div><!--/status-row-->
                  <div class="graph row">
        34
                    <div class="tutors-working col-sm-4">
        35
                      <h3 class="help">
         36
                        {{ tutorCount = data.tutorsWorking.length }}
                        tutor{{tutorCount > 1 ? 's' : ''}} working right now
```

16/10/16, 11:51 am

```
38
                       </h3>
         39
                       <div class="list-group">
         40
                         <div ng-repeat="session in data.tutorsWorking" class="list-group-item">
         41
                           <div class="list-group-item-heading">
         42
                             <span class="name">
         43
                               {{finishIn = session.timeUntilFinish(); session.user.name}}
         44
                             </span><!--/tutor-name-->
         45
                             <div class="finish-in pull-right text-muted pointer" tooltip="Finishes at {{session.clock_off_time | date</pre>
         46
                               <span ng-if="session.showHour">
         47
                                 {{session.hourDisplay}}h
         48
                               </span>
         49
                               {{session.minuteDisplay}}m
                             </div><!--/finish-in-->
         51
                           </div>
                           <label ng-repeat="unit in session.user.units_taught" class="label label-info pointer" tooltip="{{unit.nam</pre>
                               {{unit.code}}
         55
                             </label>
                           <!--/unit-labels-->
                         </div>
         58
                       </div><!--/tutors-working-list-->
         59
                     </div><!--/tutors-working-->
                     <div class="graph col-sm-8">
        61
                       <h3 class="help">
        62
                        Tickets unresolved and wait times today
        63
        64
                       <helpdesk-dashboard-timeline data="graphData" height="400">
         65
                       </helpdesk-dashboard-timeline>
         66
                    </div>
         67
                   </div><!--/graph-row-->
        68
                   <div class="ticket row">
        69
                    <div class="ticket-wrapper col-sm-3" ng-repeat="ticket in data.tickets">
                       <helpdesk-ticket ticket="ticket"></helpdesk-ticket>
                     </div>
                   </div><!--/ticket-row-->
         73
              + </div><!--/helpdesk-open-->
         74
              +</div>
3
         src/app/helpdesk/states/states.coffee
                                                                                                                           View
             @@ -0,0 +1,3 @@
              +angular.module('doubtfire.helpdesk.states', [
             + 'doubtfire.helpdesk.states.dashboard'
          3
             +])
2
         src/app/tasks/task-definition-selector/task-definition-selector.coffee
                                                                                                                           View
    $
              @@ -11,6 +11,8 @@ angular.module('doubtfire.tasks.task-definition-selector',[])
                scope:
                   # Unit required
                   unit: "="
         14
                   # Model
                   selectedDefinition: '=ngModel'
  14
         16
                   # What to do when definition is changed
                   onSelectDefinition: "="
  16
         18
                   # Provide a btn-style to force the colour to change
    #
96
          src/app/visualisations/helpdesk-dashboard-timeline.coffee
                                                                                                                           View
             @@ -0,0 +1,96 @@
              +angular.module('doubtfire.visualisations.helpdesk-dashboard-timeline', [])
              +.directive 'helpdeskDashboardTimeline', ->
```

```
3
    + replace: true
 4
     + restrict: 'E'
 5
     + templateUrl: 'visualisations/visualisation.tpl.html'
 6
         rawData: '=data'
 8
         height: '=?'
 9
     + controller: ($scope, $timeout, taskService, projectService, Visualisation) ->
10
          updateData = (rawData) ->
            # Function to fix time as nvd3 needs a unix time in ms, not s
           correctTime = (t) \rightarrow t * 1000
            $scope.times = _.chain(rawData).keys().map(correctTime).value()
14
            $scope.data = [
             {
                key: 'Average Wait Time',
                bar: false,
18
                values: _.map rawData, (data, time) ->
19
20
                    x: correctTime(time),
                    y: data.average_wait_time_in_mins
23
              },
24
                key: 'People In Queue',
26
                bar: true,
                values: _.map rawData, (data, time) ->
28
                    x: correctTime(time),
30
                    y: data.number_of_unresolved_tickets
              }
            1
34
            # Update forceY to be the max num
35
            barMax =
36
             _.chain(rawData)
             .map((data) -> data.number_of_unresolved_tickets)
39
            barMax = if barMax > 10 then barMax else 10
40
            lineMax =
              _.chain(rawData)
41
42
             .map((data) -> data.average_wait_time_in_mins)
43
44
            lineMax = if lineMax > 10 then lineMax else 10
45
            $scope.options.chart.bars.forceY =
46
            $scope.options.chart.bars2.forceY =
47
              [0, barMax]
48
            $scope.options.chart.lines.forceY =
49
            $scope.options.chart.lines2.forceY =
50
              [0, lineMax]
            $timeout ->
              $scope.api.refresh() if $scope.api?.refresh?
54
          $scope.$watch (-> _.keys($scope.rawData)[0]), ->
            return unless $scope.rawData?
56
            updateData $scope.rawData
58
          [$scope.options, $scope.config] = Visualisation 'linePlusBarChart', 'Helpdesk Dashboard Timeline', {
59
           showLabels: no
60
            margin:
61
              top: 30,
62
              riaht: 30.
63
              bottom: 50,
64
              left: 70
65
            height: $scope.height
```

```
66
                     bars:
         67
                       forceY: [0]
         68
                     hars2:
         69
                       forceY: [0]
         70
                     lines:
                       forceY: [0]
                     lines2:
                       forceY: [0]
         74
                     color: [
                       'darkred',
         76
                       '#2ca02c'
                     1
                     x: (d, i) -> i
                     xAxis:
                       axisLabel: 'Time'
         81
                       tickFormat: (d) -> moment($scope.times[d]).format('hh:mm a')
         82
                     x2Axis:
         83
                       showMaxMin: true
         84
                       tickFormat: (d) -> moment($scope.times[d]).format('hh:mm a')
         85
                     v1Axis:
         86
                       axisLabel: 'people waiting'
         87
                       tickFormat: (d) -> d
         88
                       axisLabelDistance: -12
         89
                     y2Axis:
         90
                       axisLabel: null
         91
                       tickFormat: (d) -> "#{d}m"
         92
                     y3Axis:
         93
                       tickFormat: (d) -> 'l'
         94
                     y4Axis:
         95
                       tickFormat: (d) -> 'x'
         96
                   }, {}
1
         src/app/visualisations/visualisations.coffee
                                                                                                                            View
                                                                                                                                   $
              @@ -9,6 +9,7 @@ angular.module('doubtfire.visualisations', [
   9
          9
                 'doubtfire.visualisations.task-completion-box-plot'
  10
         10
                 'doubtfire.visualisations.achievement-box-plot'
                 'doubtfire.visualisations.achievement-custom-bar-chart'
              + 'doubtfire.visualisations.helpdesk-dashboard-timeline'
               1)
         14
  14
               .factory('Visualisation', ($interval, analyticsService) ->
    *
7
         src/styles/common/alerts.scss
                                                                                                                            View
                                                                                                                                    #
              @@ -49,3 +49,10 @@
  49
         49
                 .alert.alert-warning i.fa:before { content: $fa-var-exclamation-triangle; }
 50
         50
                 .alert.alert-success i.fa:before { content: $fa-var-check-circle; }
  51
         51
              }
         52
             +// Push down the alert past the header if it has content
         54
              +@media (min-width: $screen-sm) {
              + div[ui-view="header"]:not(:empty) ~ .alert-top {
         56
                   top: 66px;
         57
              + }
         58
              +}
8
         src/styles/common/overrides/modal-overrides.scss
                                                                                                                            View
                                                                                                                                    @@ -0,0 +1,8 @@
              +// Mobile responsive fixes
              +@media (max-width: $screen-md) {
```

```
3  + .modal-footer button {
4  + width: 100%;
5  + margin-bottom: 1em !important;
6  + margin-left: 0 !important;
7  + }
8  +}
```