

Folder: Admin

<i>Class</i>	<i>Requires</i>	<i>Function</i>
Questiondetails.php	Dbutils.php	Get details of questions from the database and display them. This includes displaying possible answers, both correct and incorrect
Questionlist.php	Dbutils.php	Displays list of questions. It calls questiondetails.php to display data
Remove_image.php	Dbutils.php	Deletes an image from the questions_images database

Folder: Classes

<i>Class</i>	<i>Requires...</i>	<i>Function</i>	
Dbutils.php	None	Class for setting up databases	
		<i>__construct</i>	Takes in database username, password, and name arguments. Class constructor to create a new database connection object
		<i>closeConnection</i>	Close the mysql connection
		<i>escapeMySqlString</i>	Takes special characters arguments. Escapes the special characters used in the MySQL statement
		<i>getDatasetWithParams</i>	Takes sql select query, data types, and parameters arguments. Creates a dataset based on an SQL Select query and a set of parameters for the WHERE clause. This method only works with SELECT queries
		<i>getDataset</i>	Takes a SQL SELECT query argument. Creates a dataset on an SQL SLECT query where the WHERE clause is concatenated
		<i>executeQuery</i>	Takes SQL SELECT query, types, and parameters arguments. Executes an INSERT, UPDATE, DELETE query with a set of parameters for the WHERE clause
		<i>getRecordsetAsJson</i>	Takes SQL Select query, types, and parameters arguments. Creates a JSON object form data returned by an SQL Select query and a set of parameters for the WHERE clause. This only works with SELECT queries

HtmlUtilities	None	Cannot find use in current code base.	
Image.php	None	Class for image object	
		<i>__construct</i>	Constructs image object
Levelsecurity.php	getaccess.php	Checks to make sure the user isn't jumping levels	
Question.php	Image.php	Class for question object	
		<i>__construct</i>	Constructor function for question object. Splits depending whether or not user is in practice mode.
		<i>logUsedQuestion</i>	Inserts a question that has been used into used_question_log database
		<i>loadDistractors</i>	Load distractor images for the questions
		<i>toJSON</i>	Converts image List to Json
Quiz.php (actually for Quiz Question)	None	Class for Quiz Question object	
		<i>__construct</i>	Takes database username, password, and name arguments. Constructor to create a new database connection object
		<i>closeConnection()</i>	Close SQL database connection
		<i>escapeMYSQLString</i>	Takes special character arguments. Creates an escape string for the sql database
		<i>getDatasetWithParams</i>	Takes SQL Select query, types, and parameters arguments. Creates a dataset based on a select query and a set of parameters for the WHERE clause. This method only works with SELECT queries
		<i>getDataset</i>	Take SQL SELECT query parameters. Creates a database on an SQL SELECT query where the WHERE clause is concatenated
		<i>executeQuery</i>	Takes SQL SELECT query, types, and parameters arguments. Executes an INSERT< UPDATE< DELETE query with a set of parameters for the WHERE clause

		<i>getRecordsetAsJson</i>	Takes SQL SELECT query, types, and parameters arguments. Creates a JSON object form data returned by an SQL SELECT query and a set of parameters for the WHERE clause. This method only works with SELECT queries
Quizquestion.php	None	Pretty sure this was abandoned	
security.php	None	Checks if user id in the session is blank or “invalid”. Redirects to authfailed.php	
stringutils.php	None	Replaces certain characters in strings	
		<i>cleanMySQLInsert</i>	Takes sql String argument, replaces characters that present potential danger for SQL Injections or can break SQL syntax

Folder: Rest

<u>Class</u>	<u>Requires...</u>	<u>Function</u>
getaccess.php	Dbutils.php	Checks if user ID is set in the session. Set accordingly. Files an SQL SELECT query for everything from page access database where the ID matches the session ID.
getDistractors.php	Dbutils.php	Gets distractor images for questions. Selects question ID, diagnosis name, hint, image ID, image folder, and image name from the distractor and questions databases where IDs match. Randomizes them, encodes in json, and displays the data.
getPracticeQuestions.php	Dbutils.php	Retrieves practices questions. Selects question ID, image ID, category name, diagnosis name, hint, number of images, image folder, and image name from categories and questions databases where IDs match. Loops number of times as the “limit” in the session
getscore.php	Dbutils.php	Sets the IDs from the session data. IF the user ID is “TOPFIVE”, retrieves the top five score, encodes them into JSON and displays them.

		<p>Otherwise, select the question ID, image ID, if there is a bonus, level ID, attempt ID, score received, date and time started, and date and time ended. Gets data from score database where IDs match.</p> <p>Then selects question ID, score date, score time, level ID, and attempt ID. Gets data from questioncomplete database where IDs match.</p> <p>Displays score and question data.</p>
getuserlist.php	Dbutils.php	<p>Gets ID from session.</p> <p>Select name from drupal_users where ID matches session ID.</p> <p>Sets database name, username, and password. Creates a new DbUtilities object from previous data, turns it into an array and encodes to Json</p>
Leaderboard_ws.php	Dbutils.php	<p>Retrieve the Leader board scores</p> <p>Selects user ID, level ID, and max level score From the dentalgame score log Where level is complete Group by user and level id Order by max level score Limit to 3 queries Encode to JSON</p> <p>Select user ID, level ID, and sum of Max Overall score From dental game score log Where the level is complete Group by ID Order by the max overall score Limit to 5 results Encode to Json</p>
levelsummary.php	Dbutils.php	<p>Displays the level summary, including score and answers</p> <p>Get the game attempt, level, and user IDs from the session data</p> <p>Select Max level attempt number From the score log Where the user and attempt ID matches</p>

		<p>Select the level attempt number, if the level is complete, final level score, number of questions answered, number of questions correct, and number of questions incorrect From Scorelog Where attempt, user, and level IDs match Save as score and encode in JSON</p> <p>Select question ID, image ID, diagnosis name, image Folder, image Name, and whether it is correct From answer_log, questions_images, questions, and images databases Where image, question, attempt, user, and level IDs match Save as answers</p> <p>Display scores and answers</p>		
Logquizanswer.php	Dbutils.php	<p>Set user ID, question ID, choice ID, and if item is correct from session data</p> <p>Insert data above into quizanswerlog database</p>		
Question_ws.php	Dbutils.php	<p>Gets question and distractor info from databases and display them</p> <p>If the level ID is set from the session Select question ID, diagnosis name, hint, image ID, image folder, and image name From questions and questions_levels databases Where IDs match Randomize</p> <p>Encode to JSon and save as questions</p> <p>Select question ID, diagnosis name, forQuestion ID, image ID, image folder, and image name From distractors and questions databases Where IDs match Randomize Encode to Json and save as distractors</p> <p>Display questions and distractors</p> <table><tr><td>Utf8ize</td><td><p>IF argument is an array, for each item, use recursion to call itself for each string</p><p>If string, encode it into utf8</p></td></tr></table>	Utf8ize	<p>IF argument is an array, for each item, use recursion to call itself for each string</p> <p>If string, encode it into utf8</p>
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Question_ws_obj.php	Dbutils.php Question.php	<p>Create new question object and encode in JSON. Question object depends on user's current level</p> <p>Get game attempt and level IDs from session Retrieve practice categories if any</p> <p>Display questions differently depending on level</p>
Quizquestion_ws.php	Dbutils.php	<p>Creates a QuizQuestion and QuizQuestionChoice object</p> <p>Selects question ID question stem, choice Id, choice text, and if item is correct From quizquestions and quizquestionchoices databases where IDs match and items are active Order by question ID Save as collection list</p> <p>Iterate through collection list and put questions in collection list into new array list called question list Also construct new questions based on data from sql query</p>
Quizscorecard_ws.php	Dbutils.php	<p>Displays user's scorecard</p> <p>Select date answered, if correct, and count From quizanswerlog Where IDs match Group by Date answered and if correct</p> <p>Save as collectionlist, encode in json and display</p>
Resultstojson.php	Dbutils.php	Convert entire sql database to JSON? (Actually not sure if this works)
Scorecard_ws.php	Dbutils.php	<p>Display user's scorecard (not sure how this differentiates from quizscorecard_ws.php)</p> <p>Select level ID, log time and date, level attempt, final level score, number of questions answered, number correct, and number incorrect From the scorelog Where user IDs match and the level is complete Order by log date time descending and level ID ascending Convert to json and display</p>
Session.php	None	Set name and value session data and display (not sure if this is used)
Updateaccess.php	None	<p>Insert new access data in page access database Depends if session data is already set</p>
Updateanswerlog.php	None	Update the answer log database

		Retrieve session data and display Then insert into answer log database with SQL
Updatescore.php	Dbutils.php	Update the score database Retrieve session data and display Then insert into score database with SQL
Updatescorelog.php	Dbutils.php	Update the scorelog database Retrieve session data Insert data into score log database with SQL

Folder: Main

<u>Class</u>	<u>Requires</u>	<u>Functions</u>
Auth.php	Dbutils.php	Sets default database name, username, and password. Authenticate user Retrieve list of users from drupal_users Where ID matches Drupal_users has one entry already, set it to session Otherwise, authentication failed
Authfailed.php	Header.php Footer.php	Page for failed authentication
Caught_cheating.php	Security.php Dbutils.php Question.php Header.php Footer.php	Page to tell user they were cheating
Completedlevelsummary.php	Security.php Header.php levelSummary.php	Display completed level summary Once document has been loaded into browser Set all session info Iterate through all answers and say whether it was answered correctly or not If level is completed, redirect to next level Otherwise, offer to repeat level

		<i>setupTimerBar</i>	Set up timer for the level
		<i>updateTimerBar</i>	Change timer appearance upon completion of level (unsure if actually used)
Footer.php	None	Footer for page	
Gameattempt.php	Security.php Dbutils.php Updateaccess.php	If level ID is already set, redirect to incorrect_level.php Otherwise, send user to level 1 tutorial	
Game-level-example.php	Dbutils.php Question.php	Show an example of the game level When document is loaded, set button to each image and say whether each answer is right or wrong	
		<i>updateScoreData</i>	Takes user ID, selected image id, and if image is correct arguments Set score data variables from arguments, JSON and send score to updatescore.php
Header.php	None	Header to be displayed on top of most pages	
Homepage.php	Header.php	Display homepage for game. Includes links to each mode	
Leaderboard.php	Header.php Footer.php Security.php Dbutils.php Question.php	Display the leaderboard for the game	
Level1.php	Security.php Header.php Footer.php Question_ws_obj.php	Page for level 1 of game	
		<i>initQuestion</i>	Get question from question_ws_obj.php and initialize
		<i>selectDxImage</i>	Take button object argument. Check if user's answer is correct or not.

			<div>If user has reached 5 correct, level is passed</div> <div>If user missed 2, game over</div>										
Level1a.php	Security.php Dbutils.php Levelsecurity.php Question.php Header.php Footer.php	<div>Determines if the selected image is correct or not. If it is correct, send info to update score as true and bring up new question. IF false, send info to updatescore data and upload new question</div> <table><tr><td>getScore</td><td>Take amount argument. Calculate score</td></tr><tr><td>hintPointDeduction</td><td>Formula for deducting points for hints</td></tr></table>	getScore	Take amount argument. Calculate score	hintPointDeduction	Formula for deducting points for hints							
getScore	Take amount argument. Calculate score												
hintPointDeduction	Formula for deducting points for hints												
Level1tutorial.php	Security.php Dbutils.php Question.php Header.php Footer.php	Display the tutorial for level 1											
Level2.php	Header.php Footer.php	<div>Page for level 2 of the game</div> <table><tr><td>initQuestion</td><td>Initialize question</td></tr><tr><td>selectDxImage</td><td>Determine if user's answer was right</td></tr><tr><td>SubmitLevel2answers</td><td>Submit answers for level 2</td></tr><tr><td>processAnswersChoices</td><td>Increase score if answer was right. If user wins or loses the level, send them to the correct page</td></tr><tr><td>getNumberAvailableCorrect</td><td>Function to get number</td></tr></table>	initQuestion	Initialize question	selectDxImage	Determine if user's answer was right	SubmitLevel2answers	Submit answers for level 2	processAnswersChoices	Increase score if answer was right. If user wins or loses the level, send them to the correct page	getNumberAvailableCorrect	Function to get number	
initQuestion	Initialize question												
selectDxImage	Determine if user's answer was right												
SubmitLevel2answers	Submit answers for level 2												
processAnswersChoices	Increase score if answer was right. If user wins or loses the level, send them to the correct page												
getNumberAvailableCorrect	Function to get number												

			available correct
Level2a.php	Security.php Dbutils.php Question.php Header.php Footer.php	Determines if the selected image is correct or not. If it is correct, send info to update score as true and bring up new question. IF false, send info to updatescore data and upload new question	
		<i>getScore</i>	Takes amount variable, calculates score
Level2tutorial	Security.php Dbutils.php Question.php Header.php Footer.php	Display tutorial for level 2	
Level3.php	Security.php Header.php Footer.php	Page for level 3 of the game	
		<i>initQuestion</i>	Initialize question
		<i>loadLevel3Question</i>	Take data argument, load level 3 questions
		<i>getImageDataFromSelection</i>	Iterate through images and get data
		<i>randomizeSelectableTerms</i>	Randomize choices for question
		<i>submitLevel3Answers</i>	Submit answers for level 3, redirect depending on amount right or wrong
Level3a.php	Security.php Dbutils.php Question.php Header.php Footer.php	Determines if the selected image is correct or not. If it is correct, send info to update score as true and bring up new question. IF false, send info to updatescore data and upload new question	

		<i>saveSelectedPairs</i>	Save image matches to be scored
		<i>selectDiagnosisMatch</i>	Function to store the diagnosis selection
		<i>selectImageMatch</i>	Function to store the image selection
		<i>calculateScore</i>	Calculate score
		<i>getScore</i>	Function to calculate score
Level3tutorial.php	Security.php Dbutils.php Question.php Header.php Footer.php	Tutorial for level 3	
Logout.php	None	Reset session data	
Practice.php	Security.php Dbutils.php Question.php Header.php Footer.php	Load up practice page for game	
Practicemenu.php	Security.php Dbutils.php Question.php Header.php Footer.php	Display the practice menu	
practiceQuestion.php	Security.php Dbutils.php Levelsecurity.php Question.php Header.php Footer.php	Display a practice question	
Quiz.php	Security.php Header.php Footer.php logquizanswer	Page for quiz	
		<i>loadQuestion()</i>	Load quiz question
		<i>submitQuestion</i>	Submit answer
		<i>getCorrectQuestionChoice</i>	Function to get correct question choice
Quizscorecard.php	Security.php Dbutils.php	Page to display quiz score card	

	Question.php Header.php Footer.php Quizscorecard.php	
Scorecard.php	Security.php Dbutils.php Question.php Header.php Footer.php	Page for the game score card
Tutorial.php	Security.php Dbutils.php Question.php Header.php Footer.php	Page to display quiz tutorial
Win.php	Security.php Dbutils.php Levelsecurity.php Question.php Header.php Footer.php	Win page for game

Database Accesses

<u>Class</u>	<u>Access Which Databases</u>
Admin Folder	
<i>Questiondetails.php</i>	Questions Categories Questions_images Distractors
<i>Questionlist.php</i>	Questions
<i>Remove_image.php</i>	Questions_images
<i>Question.php</i>	Questions Questions_levels Questions_images Images Used_question_log Distractors
Rest Folder	
<i>Getaccess.php</i>	Pageaccess
<i>getDistractors</i>	Distractors Questions
<i>getPracticeQuestions</i>	Categories Questions
<i>Getscore.php</i>	Score Questioncomplete
<i>Getuserlist.php</i>	Drupal101.drupal_users

<i>Leaderboard_ws.php</i>	Dentalgame.scorelog
<i>Levelsummary.php</i>	Scorelog Answerlog
<i>Logquizanswer.php</i>	Quizanswerlog
<i>Question_ws.php</i>	Questions Questions_images Images Distractors Questions_levels
<i>Quizquestion_ws.php</i>	Quizquestions Quizquestionchoices
<i>Quizscorecard_ws.php</i>	Quizanswerlog
<i>Scorecard_ws.php</i>	Scorelog
<i>Updateaccess.php</i>	Pageaccess
<i>Updateanswerlog.php</i>	Answerlog
<i>Updatescore.php</i>	Score
<i>Updatescorelog.php</i>	Scorelog
Main Folder	
<i>Auth.php</i>	Drupal101.drupal_users

Databases (Primary Key is Bolded) – Double Check with db_07_30_2017_2.sql

Table	Key	Constraint	References
<u>answerlog</u>			
ScoreID			
userID			
Fk_questionID	Fk_answerlog_questions_idx	Fk_answerlog_questions	questions (question ID)
Fk_imageID	Fk_answerlog_images_idx	Fk_answerlog_images	Images (imageID)
isCorrect			
attemptID			
levelID			
levelAttemptNumber			
dateTimeSelected			
<u>Categories</u>			
categoryID			
categoryName			
<u>Distractors</u>			
distractorID			
Fk_forQuestionID	Fk_distractors_questions_idx	Fk_distractors_questions_forQuestionID	Questions (questionID)
Fk_distractorQuestionID	Fk_distractor_questions_distractorQuestionID_idx	Fk_distractor_questions_distractorQuestionID	Questions (questionID)
<u>Images</u>			
imageID			
imageFolder			
imageName			
<u>Pageaccess</u>			

pageaccessID			
userID			
AttemptID			
levelAccess			
accessDateTime			
<u>Questions</u>			
questionID			
diagnosisName	Idx_diagnosisName		
Fk_categoryID	Fk_questions_categories_idx	Fk_questions_categories	Categories (categoryID)
Hint			
numberOfImages			
<u>Questions images</u>			
Fk_questionID		Fk_questions_images_questions	Questions (questionID)
Fk_imageID	Fk_questions_images_images_idx	Fk_questions_images_images	Images (imageID)
<u>Questions levels</u>			
Fk_questionID		Fk_questions_levels_questions	Questions (questionID)
levelID			
<u>Quizanswerlog</u>			
logID			
userID			
Fk_quizQuestionID	Fk_quizanswerlog_questions_questionID_idx	Fk_quizanswerlog_questions_questionID	Quizquestions (questionID)
Fk_quizChoiceID	Fk_quizanswerlog_questionchoices_questionID_idx	Fk_quizanswerlog_questionchoices_questionID	Quizquestionchoices (choiceID)
isCorrect			
dateTimeAnswered			
<u>Quizquestionchoices</u>			
choiceID			
Fk_questionID			
choiceText			
isCorrect			
<u>Quizquestions</u>			
questionID			
questionStem			
isActive			
<u>Scorelog</u>			
autoID			
attemptID			
levelID			
Fk_userID			
logDateTime			
levelAttemptNumber			
isLevelComplete			
finalLevelScore			
numberQuestionsAnswered			
numberCorrect			
numberIncorrect			
<u>Subclassifications</u>			
Fk_questionID			
Fk_categoryID			

Used_question_log			
attemptID			
questionID	Fk_used_question_log	Fk_used_question_log_questions	Questions (questionID)
levelID			