# TT-datamining

index.html

* Styles (needs work, extract to separate file styles.css)
* Display input buttons
  + Student data: calls *parseStudentData*
  + Log file: calls *parseCSV*
* Load javascript programs
  + parse-student-data.js
  + html-support.js
  + parse-file.js
  + utils.js
  + html-utils.js
  + analysis-tools.js
  + report-tools.js
  + PapaParse-4.1.2/papaparse.js
  + jquery.min.js (from Google)

parse-student-data.js

* *parseStudentData*: called by input button to read user-selected Student-anon data file (using *Papa.parse*) and load into ***studentDataObjs*** array

parse-file.js

* *parseCSV*: called by input button to read user-selected log file (using *Papa.parse*) and then:
  + load into ***rowObjs*** array of row objects
  + call *makeTeams* (in *utils.js*) to create ***teams*** array
  + call *analyze* (in *analysis-tools.js*) to create ***changes*** array
  + call *setupForm* to output table of choices for user

html-support.js

* *toggleSelectAll*(checkboxName) // insert check in all boxes if SelectAll chosen
* *setupForm*(teams) // create table for user to select teams, levels, actions, varRefs, summary reports, teacher reports, and then “submit query” to generate reports

utils.js

* *clearScreen* () // clears data and summary tables
* *initializeVarRefs* (level) // Initializes variable references for this level
* *scoreAction* (action) // scoring actions based on relevance (inclusion of varRefs)
* *highlightMessage* (act, text) // Highlights variable names/values in a message
* *getVarRefs* (action, text) // returns variable references contained in message
* *findVars* (act, numStr) // finds variables by matching their known values
* *makeTeams* (rowObjs) // parse logdata row objects looking for and populating teams
* *about* (num, target, tol) // compare number with known value
* *addTeam* (ro) // forming teams with students who join a group or pick username
* *addLevel* (myTeam, ro) // construct a new level from ro and add it to levels array.
* *addMember* (myTeam, ro) // add a new member to the array from ro
* *getLevel* (ro) // get Level of this ro
* *addLevelValues* (myLevel, ro) // update values from this ro
* *findTeam* (teams, ro) // Check to see whether the team in this ro is in the teams array
* *getMemberDataObj* (userID) // returns the studentData object for this userID
* *findMember* (id) // return a team member for some team, if he exists
* *unixTimeConversion* (uTime) // return a Date object based on the timestamp
* *arrayToObjects* (rows) // convert array of rows to array of objects
* *getAlphabeticLabel* (index) // returns A for level 2, B for level 3, and so forth
* *testScore* (varStr) // temp debugging routine
* *saveData* (data) // save a file to disk (called by downloadCSV)
* *downloadCSV* () // converts csvArray into lines in a csv file and saves it to Downloads

html-utils.js

* *makeTeamTable* (team, title, levelData, type) // returns a report table for a team, all levels
* *scoreActions* (level) // returns total number, score, and average score of messages at level

analysis-tools.js

* *analyze* (rowObjs) // identifying/tallying each row of logged data, calling the appropriate add function
* *addAction* (ro, type) // adding a new action of each type, saving common parameters
* *findRValues* (ro, oldR) // find resistance values from row; return resistance matrix.
* *findVValues* (E, R0, R) // returns V given E, R0 and current R values.
* *duplicate* (action) // detect duplicate actions, returns true/false
* *addJoinedGroup* (ro) // add to joined-group actions
* *addConnectLead* (ro) // add to connect-lead actions
* *addDisconnectLead* (ro) // add to disconnect-lead actions
* *addRChange* (ro) // add to resistorChange actions
* *addMessage* (ro) // add to message actions
* *addCalculation* (ro) // add to calculation actions
* *addMeasurement* (ro, i) // add to measurement actions
* *addSubmit* (ro) // add to submitClicked actions
* *addSubmitER* (ro) // add to submitER actions
* *addAttachProbe* (ro) // add to attach-probe actions
* *addDetachProbe* (ro, i) // // add to detach-probe actions
* *addMovedDial* (ro, i) // add to move-dial actions

report-tools.js

* *generateReport* (teams) // driving function called by “submit query” button to create reports for selected teams, actions, etc
* *reportResults* (teams) // extract and list actions selected by user
* *reportVarRefs* (teams) // extract and list varRefs selected by user
* *variableInVarRef* (vrStr, vrArray) // return true if vrStr found in vrArray
* *reportSummary* (teams) // report on resistor changes by category, team member, level.
* *reportActions* (teams, type) // create tables for each team summarizing message scores, calling makeTeamTable for 1) total scores, 2) number of mssgs, and 3) average score
* *teacherReport* (teams) // create table for selected teacher reporting the attainments or lack thereof by each team and level

PapaParse-4.1.2/papaparse.js

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