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# Introduction

Predictive Clustering Trees (PCTs) are decision trees that can be used for modeling of structured target variables. Decision trees in general, are hierarchical models, where each internal node contains a test on a descriptive variable (attribute) of an example and each branch leaving this node corresponds to an outcome of this test. Terminal nodes (leaves) of a tree contain models defining the values of the target (dependent) variable for all examples falling in a given leaf. Given a new example, for which the value of the target variable should be predicted, the tree is interpreted from the root. In each inner node, the prescribed test is performed, and according to the result, the corresponding sub-tree is selected. When the selected node is a leaf, the value of the target variable for the new example is predicted according to the model in this leaf. If the target variable is numeric, the models in the leaves are typically constant values (regression tree), if the target variable is categorical, the models are categorical values (classification tree). PCTs make it possible for the target variable to be a structured object such as a vector or a time-series. In the latter case, the tree predicts the whole time-series simultaneously. Once a decision tree is learned on the data we can use it for two purposes. First, we can use it for explaining the connections between the descriptive variables and time changes in the target variable, and determine the variables that are important for grouping (clustering) examples with similar time patterns. Second, we can use the tree for predicting the time patterns of the target variable.

The algorithm takes the following parameters:

* *Descriptive variables:* A set of descriptive variables, which are used within tests inside the decision tree that describe how the similar examples are clustered together. They can be numeric or categoric or mix of both types.
* *Target variables representing a time-series:* A set of more than one measurements of the same target variable (measured at predefined time points) for which we want to learn a predictive model that will describe the time-series pattern in terms of descriptive variables. The variables representing the time-series must be numeric.
* *Minimum number of examples in a decision tree leaf:* This parameter influences the size of the learned tree (post-pruning parameter), the larger the number, the smaller the learned tree.
* *Pruning (Yes/No):* The parameter defines whether a post-pruning procedure is applied after the initial decision tree learning. Pruning reduces the size of the tree and such a tree tends to overfit data less.

## Algorithm inputs

The algorithm supports time-series prediction where time points are numeric.

## Algorithm output

As needed by the MIP, our algorithm produces several outputs: a PFA and a VisJS visualization. Below we provide output for different output types.

### Time-series prediction

#### PFA

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| --- |
| {  "action": [  {  "else": {  "else": {  "else": {  "else": {  "else": {  "else": {  "new": {  "output1": 0.345,  "output2": 0.125,  "output3": 0.5700000000000001,  "output4": 1.1925  },  "type": "DependentVariables"  },  "if": {  ">": [  "input.input1",  0.08  ]  },  "then": {  "new": {  "output1": 1.9125,  "output2": 1.05,  "output3": 1.5375,  "output4": 1.165  },  "type": "DependentVariables"  }  },  "if": {  ">": [  "input.input2",  -0.32  ]  },  "then": {  "else": {  "new": {  "output1": 0.14999999999999997,  "output2": 1.9880000000000002,  "output3": 1.55,  "output4": 2.062  },  "type": "DependentVariables"  },  "if": {  ">": [  "input.input1",  -0.01  ]  },  "then": {  "else": {  "new": {  "output1": 1.15,  "output2": 1.29,  "output3": 1.0925,  "output4": 0.2675  },  "type": "DependentVariables"  },  "if": {  ">": [  "input.input2",  0.27  ]  },  "then": {  "new": {  "output1": 0.6,  "output2": 1.3116666666666665,  "output3": 2.085,  "output4": 1.5933333333333335  },  "type": "DependentVariables"  }  }  }  },  "if": {  ">": [  "input.input2",  0.51  ]  },  "then": {  "else": {  "else": {  "else": {  "new": {  "output1": 0.8025,  "output2": 0.815,  "output3": 1.6575,  "output4": 1.1075  },  "type": "DependentVariables"  },  "if": {  ">": [  "input.input1",  -0.59  ]  },  "then": {  "new": {  "output1": 1.512,  "output2": 0.9359999999999999,  "output3": 0.055999999999999994,  "output4": -0.9479999999999998  },  "type": "DependentVariables"  }  },  "if": {  ">": [  "input.input1",  -0.11  ]  },  "then": {  "else": {  "new": {  "output1": 1.4742857142857144,  "output2": -0.040000000000000015,  "output3": 1.2771428571428571,  "output4": 0.44000000000000006  },  "type": "DependentVariables"  },  "if": {  ">": [  "input.input2",  1.74  ]  },  "then": {  "new": {  "output1": 0.336,  "output2": 0.4,  "output3": 1.1239999999999999,  "output4": 1.684  },  "type": "DependentVariables"  }  }  },  "if": {  ">": [  "input.input1",  0.77  ]  },  "then": {  "else": {  "new": {  "output1": 1.7725,  "output2": 1.4249999999999998,  "output3": 0.26250000000000007,  "output4": 0.745  },  "type": "DependentVariables"  },  "if": {  ">": [  "input.input2",  0.99  ]  },  "then": {  "else": {  "else": {  "new": {  "output1": 0.017499999999999974,  "output2": 1.1275,  "output3": 0.7775,  "output4": 0.9925  },  "type": "DependentVariables"  },  "if": {  ">": [  "input.input2",  1.51  ]  },  "then": {  "new": {  "output1": 1.6025,  "output2": 0.7125000000000001,  "output3": 1.6800000000000002,  "output4": 1.3425  },  "type": "DependentVariables"  }  },  "if": {  ">": [  "input.input2",  2.34  ]  },  "then": {  "new": {  "output1": 0.8720000000000001,  "output2": 1.8719999999999999,  "output3": 0.568,  "output4": 1.2500000000000002  },  "type": "DependentVariables"  }  }  }  }  },  "if": {  ">": [  "input.input1",  1.18  ]  },  "then": {  "new": {  "output1": -1.05,  "output2": 1.1142857142857143,  "output3": 1.3657142857142854,  "output4": 0.2457142857142858  },  "type": "DependentVariables"  }  },  "if": {  ">": [  "input.input1",  1.36  ]  },  "then": {  "else": {  "new": {  "output1": 0.1433333333333334,  "output2": 0.4566666666666667,  "output3": 0.34833333333333333,  "output4": 0.6050000000000001  },  "type": "DependentVariables"  },  "if": {  ">": [  "input.input2",  0.87  ]  },  "then": {  "else": {  "new": {  "output1": 1.2,  "output2": 0.29,  "output3": -0.5625,  "output4": 0.83  },  "type": "DependentVariables"  },  "if": {  ">": [  "input.input1",  1.47  ]  },  "then": {  "else": {  "else": {  "new": {  "output1": 0.534,  "output2": 1.464,  "output3": 1.4439999999999997,  "output4": 1.16  },  "type": "DependentVariables"  },  "if": {  ">": [  "input.input1",  2.53  ]  },  "then": {  "new": {  "output1": 2.0275,  "output2": 1.71,  "output3": 0.9825,  "output4": 2.0125  },  "type": "DependentVariables"  }  },  "if": {  ">": [  "input.input2",  1.52  ]  },  "then": {  "else": {  "new": {  "output1": 1.6133333333333333,  "output2": 0.9016666666666667,  "output3": 0.46166666666666667,  "output4": 1.9816666666666667  },  "type": "DependentVariables"  },  "if": {  ">": [  "input.input1",  2.12  ]  },  "then": {  "new": {  "output1": 2.4875,  "output2": 1.12,  "output3": 0.32999999999999996,  "output4": 1.4049999999999998  },  "type": "DependentVariables"  }  }  }  }  }  },  "if": {  ">": [  "input.input1",  3.94  ]  },  "then": {  "new": {  "output1": 1.6875,  "output2": -0.4999999999999998,  "output3": 2.3925,  "output4": 0.625  },  "type": "DependentVariables"  }  }  ],  "begin": [],  "cells": {  "query": {  "init": {  "count": 101,  "covariables": [  "input1",  "input2"  ],  "sql": "SELECT",  "variables": [  "output1",  "output2",  "output3",  "output4"  ]  },  "type": {  "doc": "Definition of the query that has produced this model",  "fields": [  {  "doc": "List of dependent variables",  "name": "variables",  "type": {  "items": {  "type": "string"  },  "type": "array"  }  },  {  "doc": "List of explanatory variables",  "name": "covariables",  "type": {  "items": {  "type": "string"  },  "type": "array"  }  },  {  "doc": "SQL query",  "name": "sql",  "type": "string"  },  {  "doc": "Number of records selected by the query",  "name": "count",  "type": "int"  }  ],  "name": "Query",  "type": "record"  }  }  },  "doc": "This is the pct TS documentation.",  "end": [],  "fcns": {},  "input": {  "doc": "Input is the list of covariables and groups",  "fields": [  {  "name": "input1",  "type": "double"  },  {  "name": "input2",  "type": "double"  }  ],  "name": "IndependentVariables",  "type": "record"  },  "metadata": {  "accepts\_missing\_values": "false",  "docker\_image": ""  },  "method": "map",  "name": "PredictiveClusteringTreesForTS",  "output": {  "doc": "Output is the estimate of the variable",  "fields": [  {  "name": "output1",  "type": "double"  },  {  "name": "output2",  "type": "double"  },  {  "name": "output3",  "type": "double"  },  {  "name": "output4",  "type": "double"  }  ],  "name": "DependentVariables",  "type": "record"  },  "pools": {}  } |

#### VisJS

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| <!doctype html>  <html>  <head>  <style type="text/css">  body {  font: 11pt sans;  }  #visualization {  width: 1800px;  height: 1200px;  }  </style>  <script type="text/javascript" src="http://visjs.org/dist/vis.js"></script>  <script type="text/javascript">  var network = null;  function destroy() {  if (network !== null) {  network.destroy();  network = null;  }  }  function draw() {  destroy();    // ---- produced by java-jsi-clus-pct-ts  var nodes=[]; var edges=[];  nodes.push({id: 1, label: 'input1 > 3.94', color: 'orange', font: {'face': 'Monospace'}});  nodes.push({id: 2, label: 'output1: 1.6875\noutput2: -0.4999999999999998\noutput3: 2.3925\noutput4: 0.625', shape: 'box', font: {'face': 'Monospace', align: 'left'}});  nodes.push({id: 3, label: 'input1 > 1.36', color: 'orange', font: {'face': 'Monospace'}});  nodes.push({id: 4, label: 'input2 > 0.87', color: 'orange', font: {'face': 'Monospace'}});  nodes.push({id: 5, label: 'input1 > 1.47', color: 'orange', font: {'face': 'Monospace'}});  nodes.push({id: 6, label: 'input2 > 1.52', color: 'orange', font: {'face': 'Monospace'}});  nodes.push({id: 7, label: 'input1 > 2.12', color: 'orange', font: {'face': 'Monospace'}});  nodes.push({id: 8, label: 'output1: 2.4875\noutput2: 1.12\noutput3: 0.32999999999999996\noutput4: 1.4049999999999998', shape: 'box', font: {'face': 'Monospace', align: 'left'}});  nodes.push({id: 9, label: 'output1: 1.6133333333333333\noutput2: 0.9016666666666667\noutput3: 0.46166666666666667\noutput4: 1.9816666666666667', shape: 'box', font: {'face': 'Monospace', align: 'left'}});  nodes.push({id: 10, label: 'input1 > 2.53', color: 'orange', font: {'face': 'Monospace'}});  nodes.push({id: 11, label: 'output1: 2.0275\noutput2: 1.71\noutput3: 0.9825\noutput4: 2.0125', shape: 'box', font: {'face': 'Monospace', align: 'left'}});  nodes.push({id: 12, label: 'output1: 0.534\noutput2: 1.464\noutput3: 1.4439999999999997\noutput4: 1.16', shape: 'box', font: {'face': 'Monospace', align: 'left'}});  nodes.push({id: 13, label: 'output1: 1.2\noutput2: 0.29\noutput3: -0.5625\noutput4: 0.83', shape: 'box', font: {'face': 'Monospace', align: 'left'}});  nodes.push({id: 14, label: 'output1: 0.1433333333333334\noutput2: 0.4566666666666667\noutput3: 0.34833333333333333\noutput4: 0.6050000000000001', shape: 'box', font: {'face': 'Monospace', align: 'left'}});  nodes.push({id: 15, label: 'input1 > 1.18', color: 'orange', font: {'face': 'Monospace'}});  nodes.push({id: 16, label: 'output1: -1.05\noutput2: 1.1142857142857143\noutput3: 1.3657142857142854\noutput4: 0.2457142857142858', shape: 'box', font: {'face': 'Monospace', align: 'left'}});  nodes.push({id: 17, label: 'input2 > 0.51', color: 'orange', font: {'face': 'Monospace'}});  nodes.push({id: 18, label: 'input1 > 0.77', color: 'orange', font: {'face': 'Monospace'}});  nodes.push({id: 19, label: 'input2 > 0.99', color: 'orange', font: {'face': 'Monospace'}});  nodes.push({id: 20, label: 'input2 > 2.34', color: 'orange', font: {'face': 'Monospace'}});  nodes.push({id: 21, label: 'output1: 0.8720000000000001\noutput2: 1.8719999999999999\noutput3: 0.568\noutput4: 1.2500000000000002', shape: 'box', font: {'face': 'Monospace', align: 'left'}});  nodes.push({id: 22, label: 'input2 > 1.51', color: 'orange', font: {'face': 'Monospace'}});  nodes.push({id: 23, label: 'output1: 1.6025\noutput2: 0.7125000000000001\noutput3: 1.6800000000000002\noutput4: 1.3425', shape: 'box', font: {'face': 'Monospace', align: 'left'}});  nodes.push({id: 24, label: 'output1: 0.017499999999999974\noutput2: 1.1275\noutput3: 0.7775\noutput4: 0.9925', shape: 'box', font: {'face': 'Monospace', align: 'left'}});  nodes.push({id: 25, label: 'output1: 1.7725\noutput2: 1.4249999999999998\noutput3: 0.26250000000000007\noutput4: 0.745', shape: 'box', font: {'face': 'Monospace', align: 'left'}});  nodes.push({id: 26, label: 'input1 > -0.11', color: 'orange', font: {'face': 'Monospace'}});  nodes.push({id: 27, label: 'input2 > 1.74', color: 'orange', font: {'face': 'Monospace'}});  nodes.push({id: 28, label: 'output1: 0.336\noutput2: 0.4\noutput3: 1.1239999999999999\noutput4: 1.684', shape: 'box', font: {'face': 'Monospace', align: 'left'}});  nodes.push({id: 29, label: 'output1: 1.4742857142857144\noutput2: -0.040000000000000015\noutput3: 1.2771428571428571\noutput4: 0.44000000000000006', shape: 'box', font: {'face': 'Monospace', align: 'left'}});  nodes.push({id: 30, label: 'input1 > -0.59', color: 'orange', font: {'face': 'Monospace'}});  nodes.push({id: 31, label: 'output1: 1.512\noutput2: 0.9359999999999999\noutput3: 0.055999999999999994\noutput4: -0.9479999999999998', shape: 'box', font: {'face': 'Monospace', align: 'left'}});  nodes.push({id: 32, label: 'output1: 0.8025\noutput2: 0.815\noutput3: 1.6575\noutput4: 1.1075', shape: 'box', font: {'face': 'Monospace', align: 'left'}});  nodes.push({id: 33, label: 'input2 > -0.32', color: 'orange', font: {'face': 'Monospace'}});  nodes.push({id: 34, label: 'input1 > -0.01', color: 'orange', font: {'face': 'Monospace'}});  nodes.push({id: 35, label: 'input2 > 0.27', color: 'orange', font: {'face': 'Monospace'}});  nodes.push({id: 36, label: 'output1: 0.6\noutput2: 1.3116666666666665\noutput3: 2.085\noutput4: 1.5933333333333335', shape: 'box', font: {'face': 'Monospace', align: 'left'}});  nodes.push({id: 37, label: 'output1: 1.15\noutput2: 1.29\noutput3: 1.0925\noutput4: 0.2675', shape: 'box', font: {'face': 'Monospace', align: 'left'}});  nodes.push({id: 38, label: 'output1: 0.14999999999999997\noutput2: 1.9880000000000002\noutput3: 1.55\noutput4: 2.062', shape: 'box', font: {'face': 'Monospace', align: 'left'}});  nodes.push({id: 39, label: 'input1 > 0.08', color: 'orange', font: {'face': 'Monospace'}});  nodes.push({id: 40, label: 'output1: 1.9125\noutput2: 1.05\noutput3: 1.5375\noutput4: 1.165', shape: 'box', font: {'face': 'Monospace', align: 'left'}});  nodes.push({id: 41, label: 'output1: 0.345\noutput2: 0.125\noutput3: 0.5700000000000001\noutput4: 1.1925', shape: 'box', font: {'face': 'Monospace', align: 'left'}});  edges.push({from: 1, to: 2, label: 'No', font: {align: 'top'}});  edges.push({from: 1, to: 3, label: 'Yes', font: {align: 'top'}});  edges.push({from: 3, to: 4, label: 'No', font: {align: 'top'}});  edges.push({from: 4, to: 5, label: 'No', font: {align: 'top'}});  edges.push({from: 5, to: 6, label: 'No', font: {align: 'top'}});  edges.push({from: 6, to: 7, label: 'No', font: {align: 'top'}});  edges.push({from: 7, to: 8, label: 'No', font: {align: 'top'}});  edges.push({from: 7, to: 9, label: 'Yes', font: {align: 'top'}});  edges.push({from: 6, to: 10, label: 'Yes', font: {align: 'top'}});  edges.push({from: 10, to: 11, label: 'No', font: {align: 'top'}});  edges.push({from: 10, to: 12, label: 'Yes', font: {align: 'top'}});  edges.push({from: 5, to: 13, label: 'Yes', font: {align: 'top'}});  edges.push({from: 4, to: 14, label: 'Yes', font: {align: 'top'}});  edges.push({from: 3, to: 15, label: 'Yes', font: {align: 'top'}});  edges.push({from: 15, to: 16, label: 'No', font: {align: 'top'}});  edges.push({from: 15, to: 17, label: 'Yes', font: {align: 'top'}});  edges.push({from: 17, to: 18, label: 'No', font: {align: 'top'}});  edges.push({from: 18, to: 19, label: 'No', font: {align: 'top'}});  edges.push({from: 19, to: 20, label: 'No', font: {align: 'top'}});  edges.push({from: 20, to: 21, label: 'No', font: {align: 'top'}});  edges.push({from: 20, to: 22, label: 'Yes', font: {align: 'top'}});  edges.push({from: 22, to: 23, label: 'No', font: {align: 'top'}});  edges.push({from: 22, to: 24, label: 'Yes', font: {align: 'top'}});  edges.push({from: 19, to: 25, label: 'Yes', font: {align: 'top'}});  edges.push({from: 18, to: 26, label: 'Yes', font: {align: 'top'}});  edges.push({from: 26, to: 27, label: 'No', font: {align: 'top'}});  edges.push({from: 27, to: 28, label: 'No', font: {align: 'top'}});  edges.push({from: 27, to: 29, label: 'Yes', font: {align: 'top'}});  edges.push({from: 26, to: 30, label: 'Yes', font: {align: 'top'}});  edges.push({from: 30, to: 31, label: 'No', font: {align: 'top'}});  edges.push({from: 30, to: 32, label: 'Yes', font: {align: 'top'}});  edges.push({from: 17, to: 33, label: 'Yes', font: {align: 'top'}});  edges.push({from: 33, to: 34, label: 'No', font: {align: 'top'}});  edges.push({from: 34, to: 35, label: 'No', font: {align: 'top'}});  edges.push({from: 35, to: 36, label: 'No', font: {align: 'top'}});  edges.push({from: 35, to: 37, label: 'Yes', font: {align: 'top'}});  edges.push({from: 34, to: 38, label: 'Yes', font: {align: 'top'}});  edges.push({from: 33, to: 39, label: 'Yes', font: {align: 'top'}});  edges.push({from: 39, to: 40, label: 'No', font: {align: 'top'}});  edges.push({from: 39, to: 41, label: 'Yes', font: {align: 'top'}});  var container=document.getElementById('visualization');  var data={  nodes: nodes,  edges: edges  };  var options={  layout: {  hierarchical: {  direction: 'UD',  sortMethod: 'directed',  levelSeparation: 155,  nodeSpacing: 340,  edgeMinimization: false  }  },  edges: {  arrows: {  to: {  enabled: true  }  }  },  interaction: {  dragNodes: true  },  physics: {  enabled: false  }  };  network=new vis.Network(container,data,options);  // ----  }  </script>  </head>  <body onload="draw();">  <div id="visualization"></div>  </body>  </html> |

# Tests

We have also prepared an integration test of the algorithm. The tests run the algorithm on the datasets which are available in the algorithm-factory-demo database. To setup the testing environment, the following docker configuration was used:

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| ---  version: '2'  services:  db:  image: postgres:9.6.5-alpine  hostname: db  environment:  POSTGRES\_PASSWORD: test  wait\_dbs:  image: "waisbrot/wait"  restart: "no"  environment:  TARGETS: "db:5432"  TIMEOUT: 60  create\_dbs:  image: "hbpmip/create-databases:1.0.0"  restart: "no"  environment:  DB\_HOST: db  DB\_PORT: 5432  DB\_ADMIN\_USER: postgres  DB\_ADMIN\_PASSWORD: test  DB1: features  USER1: features  PASSWORD1: featurespwd  DB2: woken  USER2: woken  PASSWORD2: wokenpwd  depends\_on:  - db  sample\_data\_db\_setup:  image: "hbpmip/sample-data-db-setup:0.5.0"  container\_name: "data-db-setup"  restart: "no"  environment:  FLYWAY\_DBMS: postgresql  FLYWAY\_HOST: db  FLYWAY\_PORT: 5432  FLYWAY\_DATABASE\_NAME: features  FLYWAY\_USER: postgres  FLYWAY\_PASSWORD: test  depends\_on:  - db  woken\_db\_setup:  image: "hbpmip/woken-db-setup:latest"  container\_name: "woken-db-setup"  restart: "no"  environment:  FLYWAY\_DBMS: postgresql  FLYWAY\_HOST: db  FLYWAY\_PORT: 5432  FLYWAY\_DATABASE\_NAME: woken  FLYWAY\_USER: postgres  FLYWAY\_PASSWORD: test  depends\_on:  - db  clus-pct-ts:  image: "hbpmip/java-jsi-clus-pct-ts:latest"  container\_name: "clus-pct-ts"  restart: "no"  environment:  NODE: job\_test  JOB\_ID: 1  IN\_JDBC\_DRIVER: org.postgresql.Driver  IN\_JDBC\_URL: jdbc:postgresql://db:5432/features  IN\_JDBC\_USER: features  IN\_JDBC\_PASSWORD: featurespwd  OUT\_JDBC\_DRIVER: org.postgresql.Driver  OUT\_JDBC\_URL: jdbc:postgresql://db:5432/woken  OUT\_JDBC\_USER: woken  OUT\_JDBC\_PASSWORD: wokenpwd  PARAM\_variables: "score\_test1,stress\_before\_test1,score\_math\_course1,score\_math\_course2"  PARAM\_covariables: "iq,cognitive\_task2,practice\_task2,response\_time\_task2,college\_math"  PARAM\_query: "SELECT stress\_before\_test1,score\_test1,iq,cognitive\_task2,practice\_task2,response\_time\_task2,college\_math,score\_math\_course1,score\_math\_course2 FROM SAMPLE\_DATA"  FUNCTION: java-jsi-clus-pct-ts  MODEL\_PARAM\_pruned: "yes"  MODEL\_PARAM\_minobj: 4  links:  - "db:db"  pfa\_validator:  image: "hbpmip/pfa-validator:0.10.1"  container\_name: "pfa-validator"  environment:  INPUT\_METHOD: POSTGRESQL  JOB\_ID: 1  DB\_HOST: db  DB\_PORT: 5432  DB\_NAME: woken  DB\_USER: woken  DB\_PASSWORD: wokenpwd  DB\_TABLE: job\_result  DB\_COLUMN: data  FEATURES\_DB\_HOST: db  FEATURES\_DB\_PORT: 5432  FEATURES\_DB\_NAME: features  FEATURES\_DB\_USER: features  FEATURES\_DB\_PASSWORD: featurespwd  FEATURES\_DB\_TABLE: sample\_data  links:  - "db:db" |

# Integration tests output

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| [java-jsi-clus-pct-ts] ./tests/test.sh [ 1:35AM]  Starting the databases...  Creating network "tests\_default" with the default driver  Creating tests\_db\_1 ...  Creating tests\_db\_1 ... done  Waiting for db:5432 .... up!  Everything is up  Starting tests\_db\_1 ... done  PLAY [localhost] \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  TASK [Create the new database(s)"] \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  changed: [localhost] => (item={'password': 'featurespwd', 'db': 'features', 'user': 'features'})  changed: [localhost] => (item={'password': 'wokenpwd', 'db': 'woken', 'user': 'woken'})  TASK [Create user(s)] \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  changed: [localhost] => (item={'password': 'featurespwd', 'db': 'features', 'user': 'features'})  changed: [localhost] => (item={'password': u'wokenpwd', 'db': u'woken', 'user': u'woken'})  PLAY RECAP \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  localhost : ok=2 changed=2 unreachable=0 failed=0  Initialise the databases...  Starting tests\_db\_1 ... done  2018/03/09 01:35:51 Waiting for: tcp://db:5432  2018/03/09 01:35:51 Connected to tcp://db:5432  Flyway 4.2.0 by Boxfuse  Database: jdbc:postgresql://db:5432/features (PostgreSQL 9.6)  Successfully validated 8 migrations (execution time 00:00.044s)  Creating Metadata table: "public"."schema\_version"  Current version of schema "public": << Empty Schema >>  Migrating schema "public" to version 1.0 - create  Migrating schema "public" to version 1.1 - churn  Migrating schema "public" to version 1.2 - iris  Migrating schema "public" to version 1.3 - dummy ldsm  Migrating schema "public" to version 1.4 - dummy federation  Migrating schema "public" to version 1.5 - synthetic datasets  Migrating schema "public" with repeatable migration Create view  Migrating schema "public" with repeatable migration Setup datasets linreg\_sample,churn,iris,desd\_synth,nida\_synth,qqni\_synth  Mar 09, 2018 1:35:52 AM eu.humanbrainproject.mip.migrations.R\_\_SetupValues migrate  INFO: Migrating dataset linreg\_sample...  Mar 09, 2018 1:35:52 AM eu.humanbrainproject.mip.migrations.R\_\_SetupValues migrate  INFO: Migrating dataset churn...  Mar 09, 2018 1:35:53 AM eu.humanbrainproject.mip.migrations.R\_\_SetupValues migrate  INFO: Migrating dataset iris...  Mar 09, 2018 1:35:53 AM eu.humanbrainproject.mip.migrations.R\_\_SetupValues migrate  INFO: Migrating dataset desd\_synth...  Mar 09, 2018 1:35:54 AM eu.humanbrainproject.mip.migrations.R\_\_SetupValues migrate  INFO: Migrating dataset nida\_synth...  Mar 09, 2018 1:35:54 AM eu.humanbrainproject.mip.migrations.R\_\_SetupValues migrate  INFO: Migrating dataset qqni\_synth...  Successfully applied 8 migrations to schema "public" (execution time 00:03.461s).  2018/03/09 01:35:55 Command finished successfully.  Starting tests\_db\_1 ... done  2018/03/09 01:35:57 Waiting for: tcp://db:5432  2018/03/09 01:35:57 Connected to tcp://db:5432  Flyway 4.2.0 by Boxfuse  Database: jdbc:postgresql://db:5432/woken (PostgreSQL 9.6)  Successfully validated 1 migration (execution time 00:00.013s)  Creating Metadata table: "public"."schema\_version"  Current version of schema "public": << Empty Schema >>  Migrating schema "public" to version 1.0 - create  Successfully applied 1 migration to schema "public" (execution time 00:00.085s).  2018/03/09 01:35:57 Command finished successfully.  Run the CLUS PCT TS algorithm...  Starting tests\_db\_1 ... done  Mar 09, 2018 1:35:59 AM eu.humanbrainproject.mip.algorithms.jsi.Main run  INFO: Starting experiment  Mar 09, 2018 1:36:00 AM com.github.fommil.netlib.ARPACK <clinit>  WARNING: Failed to load implementation from: com.github.fommil.netlib.NativeSystemARPACK  Mar 09, 2018 1:36:00 AM com.github.fommil.netlib.ARPACK <clinit>  WARNING: Failed to load implementation from: com.github.fommil.netlib.NativeRefARPACK  Clus v2.11 - Software for Predictive Clustering  Copyright (C) 2007, 2008, 2009, 2010  Katholieke Universiteit Leuven, Leuven, Belgium  Jozef Stefan Institute, Ljubljana, Slovenia  This program is free software and comes with ABSOLUTELY NO  WARRANTY. You are welcome to redistribute it under certain  conditions. Type 'clus -copying' for distribution details.  Clustering attributes check ==> #nominal: 0 #numeric: 4  Warning:  Static random has been called. This may not work in parallel setting.  There will be no additional warnings for this.  Output written to: experiment.out  Mar 09, 2018 1:36:01 AM eu.humanbrainproject.mip.algorithms.jsi.Main run  INFO: Reading visualization  Run PFA validator...  Starting tests\_db\_1 ... done  SELECT "data"  FROM "job\_result"  WHERE "job\_id" = '1'  LIMIT 1    Executing PFA...  Input data: {'iq': 73.585647035899996, 'practice\_task2': 5.3073579707, 'college\_math': 10.895056626900001, 'cognitive\_task2': 47.255081449000002, 'response\_time\_task2': 2151.5243553072}  Result: {u'stress\_before\_test1': 52.1621764571, u'score\_test1': 975.097286714, u'score\_math\_course1': 15.4616946857, u'score\_math\_course2': 19.8800084571}  Input data: {'iq': 73.618145634499996, 'practice\_task2': 13.4702238116, 'college\_math': 95.351382551300006, 'cognitive\_task2': 43.928150802700003, 'response\_time\_task2': 2409.1032165984002}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 73.789732071100005, 'practice\_task2': 6.4622042560999997, 'college\_math': 82.485762921100005, 'cognitive\_task2': 43.2017809317, 'response\_time\_task2': 2023.8269941875001}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 73.8623274925, 'practice\_task2': 8.1555704426000002, 'college\_math': 19.101598745, 'cognitive\_task2': 48.043075980799998, 'response\_time\_task2': 1254.9241166505001}  Result: {u'stress\_before\_test1': 52.1621764571, u'score\_test1': 975.097286714, u'score\_math\_course1': 15.4616946857, u'score\_math\_course2': 19.8800084571}  Input data: {'iq': 73.989422819300003, 'practice\_task2': 9.2848973877999992, 'college\_math': 30.4334044384, 'cognitive\_task2': 42.796394101799997, 'response\_time\_task2': 1443.4700339927001}  Result: {u'stress\_before\_test1': 52.1621764571, u'score\_test1': 975.097286714, u'score\_math\_course1': 15.4616946857, u'score\_math\_course2': 19.8800084571}  Input data: {'iq': 74.444177803800002, 'practice\_task2': 7.8004567748999998, 'college\_math': 48.774138623200002, 'cognitive\_task2': 47.689818124799999, 'response\_time\_task2': 1438.847856912}  Result: {u'stress\_before\_test1': 48.6295578438, u'score\_test1': 1001.68887903, u'score\_math\_course1': 38.2880158438, u'score\_math\_course2': 43.3447493125}  Input data: {'iq': 74.8920051435, 'practice\_task2': 9.7150099980999993, 'college\_math': 0.66286561509999997, 'cognitive\_task2': 41.121884534099998, 'response\_time\_task2': 1539.8832544408001}  Result: {u'stress\_before\_test1': 52.1621764571, u'score\_test1': 975.097286714, u'score\_math\_course1': 15.4616946857, u'score\_math\_course2': 19.8800084571}  Input data: {'iq': 74.929945708600002, 'practice\_task2': 9.9356752125999996, 'college\_math': 46.841779189500002, 'cognitive\_task2': 42.799063386, 'response\_time\_task2': 1180.2504636220999}  Result: {u'stress\_before\_test1': 48.6295578438, u'score\_test1': 1001.68887903, u'score\_math\_course1': 38.2880158438, u'score\_math\_course2': 43.3447493125}  Input data: {'iq': 75.047114623799999, 'practice\_task2': 15.486330524, 'college\_math': 31.1422822999, 'cognitive\_task2': 35.384805183300003, 'response\_time\_task2': 2194.0760181686001}  Result: {u'stress\_before\_test1': 48.6295578438, u'score\_test1': 1001.68887903, u'score\_math\_course1': 38.2880158438, u'score\_math\_course2': 43.3447493125}  Input data: {'iq': 75.086311773000006, 'practice\_task2': 6.9202171450999996, 'college\_math': 0.037583544900000002, 'cognitive\_task2': 42.674837006099999, 'response\_time\_task2': 1617.2585553711001}  Result: {u'stress\_before\_test1': 52.1621764571, u'score\_test1': 975.097286714, u'score\_math\_course1': 15.4616946857, u'score\_math\_course2': 19.8800084571}  Input data: {'iq': 76.291176545799999, 'practice\_task2': 9.6916887802999998, 'college\_math': 8.3375337264000002, 'cognitive\_task2': 42.159510489200002, 'response\_time\_task2': 2753.5089378435}  Result: {u'stress\_before\_test1': 52.1621764571, u'score\_test1': 975.097286714, u'score\_math\_course1': 15.4616946857, u'score\_math\_course2': 19.8800084571}  Input data: {'iq': 77.272878756899999, 'practice\_task2': 1.5938004639000001, 'college\_math': 91.730320344500001, 'cognitive\_task2': 47.481765872399997, 'response\_time\_task2': 2308.4407785694002}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 77.913365754799997, 'practice\_task2': 7.2527766208999997, 'college\_math': 17.019095057299999, 'cognitive\_task2': 39.324527744299999, 'response\_time\_task2': 2188.2460281906001}  Result: {u'stress\_before\_test1': 52.1621764571, u'score\_test1': 975.097286714, u'score\_math\_course1': 15.4616946857, u'score\_math\_course2': 19.8800084571}  Input data: {'iq': 78.097244201300001, 'practice\_task2': 11.722806653799999, 'college\_math': 30.1656292917, 'cognitive\_task2': 43.766517095799998, 'response\_time\_task2': 2395.6755333843998}  Result: {u'stress\_before\_test1': 52.1621764571, u'score\_test1': 975.097286714, u'score\_math\_course1': 15.4616946857, u'score\_math\_course2': 19.8800084571}  Input data: {'iq': 79.175371158499999, 'practice\_task2': 10.8729936989, 'college\_math': 42.641877984300002, 'cognitive\_task2': 42.105547404399999, 'response\_time\_task2': 2250.2192410897001}  Result: {u'stress\_before\_test1': 48.6295578438, u'score\_test1': 1001.68887903, u'score\_math\_course1': 38.2880158438, u'score\_math\_course2': 43.3447493125}  Input data: {'iq': 80.311757784799994, 'practice\_task2': 6.1142919180000002, 'college\_math': 71.197164686199997, 'cognitive\_task2': 46.345245879899998, 'response\_time\_task2': 2227.4959122322002}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 80.764962034299998, 'practice\_task2': 10.6622731826, 'college\_math': 66.276256396899996, 'cognitive\_task2': 40.8102670269, 'response\_time\_task2': 2192.2807659998998}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 81.010087349399996, 'practice\_task2': 11.704105349200001, 'college\_math': 77.512249280600003, 'cognitive\_task2': 36.718206806700003, 'response\_time\_task2': 1836.4236446991999}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 81.119488619600006, 'practice\_task2': 8.1997926691000007, 'college\_math': 11.3424617553, 'cognitive\_task2': 41.756111468900002, 'response\_time\_task2': 2271.3592989550998}  Result: {u'stress\_before\_test1': 52.1621764571, u'score\_test1': 975.097286714, u'score\_math\_course1': 15.4616946857, u'score\_math\_course2': 19.8800084571}  Input data: {'iq': 81.709843130699994, 'practice\_task2': 8.0666427879999993, 'college\_math': -0.9802150006, 'cognitive\_task2': 39.322045139799997, 'response\_time\_task2': 2061.0373072353}  Result: {u'stress\_before\_test1': 52.1621764571, u'score\_test1': 975.097286714, u'score\_math\_course1': 15.4616946857, u'score\_math\_course2': 19.8800084571}  Input data: {'iq': 81.896689105500002, 'practice\_task2': 10.0900177108, 'college\_math': 6.1959829985999999, 'cognitive\_task2': 44.925540940600001, 'response\_time\_task2': 2551.1033657756002}  Result: {u'stress\_before\_test1': 52.1621764571, u'score\_test1': 975.097286714, u'score\_math\_course1': 15.4616946857, u'score\_math\_course2': 19.8800084571}  Input data: {'iq': 81.967424705100001, 'practice\_task2': 7.9436524257999999, 'college\_math': 84.412260901899998, 'cognitive\_task2': 43.645240403499997, 'response\_time\_task2': 2106.6659721059}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 82.326678458200007, 'practice\_task2': 9.9938705656, 'college\_math': 89.867855127200002, 'cognitive\_task2': 43.099640692800001, 'response\_time\_task2': 1568.0389666219}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 82.4690966836, 'practice\_task2': 10.696863545299999, 'college\_math': 77.538161054100001, 'cognitive\_task2': 40.299440329299998, 'response\_time\_task2': 1905.4699366325001}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 82.510612702900005, 'practice\_task2': 11.078300409200001, 'college\_math': 13.8231304581, 'cognitive\_task2': 42.495572861799999, 'response\_time\_task2': 2220.2062452521}  Result: {u'stress\_before\_test1': 52.1621764571, u'score\_test1': 975.097286714, u'score\_math\_course1': 15.4616946857, u'score\_math\_course2': 19.8800084571}  Input data: {'iq': 82.802300751800004, 'practice\_task2': 10.4196644413, 'college\_math': 66.396955548600005, 'cognitive\_task2': 41.009351628600001, 'response\_time\_task2': 1701.1919788765999}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 82.948830079800004, 'practice\_task2': 7.3345171245999996, 'college\_math': 76.743658375899997, 'cognitive\_task2': 41.458648930800003, 'response\_time\_task2': 1814.6259027369999}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 83.280164525800004, 'practice\_task2': 10.0099016367, 'college\_math': 83.721630087999998, 'cognitive\_task2': 41.368331752400003, 'response\_time\_task2': 1359.3175941978}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 83.823715700600005, 'practice\_task2': 7.7532150682000003, 'college\_math': 63.651582743699997, 'cognitive\_task2': 46.627162978800001, 'response\_time\_task2': 1629.9786000874999}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 83.916838576900005, 'practice\_task2': 8.1247293935999991, 'college\_math': 38.913900165400001, 'cognitive\_task2': 41.197709139099999, 'response\_time\_task2': 1986.4897680660999}  Result: {u'stress\_before\_test1': 48.6295578438, u'score\_test1': 1001.68887903, u'score\_math\_course1': 38.2880158438, u'score\_math\_course2': 43.3447493125}  Input data: {'iq': 84.163729951099995, 'practice\_task2': 11.378652732300001, 'college\_math': 63.3139980925, 'cognitive\_task2': 42.673494806900003, 'response\_time\_task2': 1907.8850747865999}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 85.227777189099996, 'practice\_task2': 9.9351654289999995, 'college\_math': 42.4855638696, 'cognitive\_task2': 38.256775993200002, 'response\_time\_task2': 2257.4023412366}  Result: {u'stress\_before\_test1': 48.6295578438, u'score\_test1': 1001.68887903, u'score\_math\_course1': 38.2880158438, u'score\_math\_course2': 43.3447493125}  Input data: {'iq': 85.324733025200004, 'practice\_task2': 11.806426284500001, 'college\_math': 105.43834666710001, 'cognitive\_task2': 37.866554650499999, 'response\_time\_task2': 1974.0947612144}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 85.520012159199993, 'practice\_task2': 6.9641589897999996, 'college\_math': 47.858722805200003, 'cognitive\_task2': 37.354811874100001, 'response\_time\_task2': 2528.6583302693002}  Result: {u'stress\_before\_test1': 48.6295578438, u'score\_test1': 1001.68887903, u'score\_math\_course1': 38.2880158438, u'score\_math\_course2': 43.3447493125}  Input data: {'iq': 85.926529828200003, 'practice\_task2': 16.092489049200001, 'college\_math': 32.663332230599998, 'cognitive\_task2': 49.225484111299998, 'response\_time\_task2': 1690.6161424351999}  Result: {u'stress\_before\_test1': 48.6295578438, u'score\_test1': 1001.68887903, u'score\_math\_course1': 38.2880158438, u'score\_math\_course2': 43.3447493125}  Input data: {'iq': 86.047178302800006, 'practice\_task2': 10.1573126995, 'college\_math': 62.965001457900001, 'cognitive\_task2': 42.715177710200003, 'response\_time\_task2': 2219.2132717295999}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 86.335505750600007, 'practice\_task2': 14.1889378416, 'college\_math': 16.053829733699999, 'cognitive\_task2': 40.535453803099998, 'response\_time\_task2': 2409.3199149453999}  Result: {u'stress\_before\_test1': 52.1621764571, u'score\_test1': 975.097286714, u'score\_math\_course1': 15.4616946857, u'score\_math\_course2': 19.8800084571}  Input data: {'iq': 86.661681072899995, 'practice\_task2': 6.1239721105999996, 'college\_math': 70.927332997199997, 'cognitive\_task2': 38.828825521100001, 'response\_time\_task2': 2087.2090691753001}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 87.240073274699995, 'practice\_task2': 11.491907341399999, 'college\_math': 58.381529102899997, 'cognitive\_task2': 42.131649805599999, 'response\_time\_task2': 2119.4969453080998}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 87.504868222499994, 'practice\_task2': 7.5781565725000002, 'college\_math': 46.157509986599997, 'cognitive\_task2': 44.350965833399997, 'response\_time\_task2': 1823.4368318216}  Result: {u'stress\_before\_test1': 48.6295578438, u'score\_test1': 1001.68887903, u'score\_math\_course1': 38.2880158438, u'score\_math\_course2': 43.3447493125}  Input data: {'iq': 87.564989880699997, 'practice\_task2': 13.365333159, 'college\_math': 84.051547565099995, 'cognitive\_task2': 51.029218960800002, 'response\_time\_task2': 1998.3269951046}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 87.585749115400006, 'practice\_task2': 12.885559649699999, 'college\_math': 10.972918009300001, 'cognitive\_task2': 44.3603185853, 'response\_time\_task2': 2627.5972605789002}  Result: {u'stress\_before\_test1': 52.1621764571, u'score\_test1': 975.097286714, u'score\_math\_course1': 15.4616946857, u'score\_math\_course2': 19.8800084571}  Input data: {'iq': 87.760640967399993, 'practice\_task2': 7.5741822920999997, 'college\_math': 37.105586822699998, 'cognitive\_task2': 40.014585898699998, 'response\_time\_task2': 1426.0538461138001}  Result: {u'stress\_before\_test1': 48.6295578438, u'score\_test1': 1001.68887903, u'score\_math\_course1': 38.2880158438, u'score\_math\_course2': 43.3447493125}  Input data: {'iq': 87.889894377700003, 'practice\_task2': 12.7433223767, 'college\_math': 50.9683550162, 'cognitive\_task2': 49.626132249199998, 'response\_time\_task2': 2439.8053130721}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 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Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 91.632439182799999, 'practice\_task2': 14.942348382500001, 'college\_math': 76.497754882899997, 'cognitive\_task2': 40.085179623800002, 'response\_time\_task2': 1155.5527080673}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 91.7995811766, 'practice\_task2': 12.657450128200001, 'college\_math': 12.245274051799999, 'cognitive\_task2': 40.982144551200001, 'response\_time\_task2': 1889.8025097155}  Result: {u'stress\_before\_test1': 52.1621764571, u'score\_test1': 975.097286714, u'score\_math\_course1': 15.4616946857, u'score\_math\_course2': 19.8800084571}  Input data: {'iq': 92.116872631000007, 'practice\_task2': 14.234614798999999, 'college\_math': 58.894617007299999, 'cognitive\_task2': 45.929714530600002, 'response\_time\_task2': 1545.3014823236001}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 92.358613492100005, 'practice\_task2': 8.8413834151999993, 'college\_math': 82.891446760299999, 'cognitive\_task2': 43.034100346999999, 'response\_time\_task2': 2382.3084067681002}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 92.406596800399996, 'practice\_task2': 11.166201151099999, 'college\_math': 72.513147802899994, 'cognitive\_task2': 41.853217134200001, 'response\_time\_task2': 1432.9525533814999}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 93.255074812700002, 'practice\_task2': 15.5532854904, 'college\_math': 74.880593464300006, 'cognitive\_task2': 45.1183516997, 'response\_time\_task2': 2210.6063389917999}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 93.7417739359, 'practice\_task2': 12.7213206983, 'college\_math': 60.480389769299997, 'cognitive\_task2': 37.650167395399997, 'response\_time\_task2': 1688.5135169086}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 93.987752962000002, 'practice\_task2': 12.906964331299999, 'college\_math': 67.471197344199993, 'cognitive\_task2': 46.358473736100002, 'response\_time\_task2': 2535.6092983957001}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 94.673049379800005, 'practice\_task2': 8.6673135924999993, 'college\_math': 83.299228572100006, 'cognitive\_task2': 45.983996944600001, 'response\_time\_task2': 1820.1847182124}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 95.203618199800005, 'practice\_task2': 10.9999562879, 'college\_math': 44.355622551800003, 'cognitive\_task2': 43.096413611300001, 'response\_time\_task2': 2195.5235319264998}  Result: {u'stress\_before\_test1': 48.6295578438, u'score\_test1': 1001.68887903, u'score\_math\_course1': 38.2880158438, u'score\_math\_course2': 43.3447493125}  Input data: {'iq': 95.898229687400004, 'practice\_task2': 6.9390968478000001, 'college\_math': 100.9815270803, 'cognitive\_task2': 40.0638098246, 'response\_time\_task2': 1929.0458785133001}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 96.401082038499993, 'practice\_task2': 16.004557124400002, 'college\_math': 54.536370246799997, 'cognitive\_task2': 45.7053249597, 'response\_time\_task2': 1269.7313958367999}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 97.035682180400002, 'practice\_task2': 7.4194677648000003, 'college\_math': 66.030062125399994, 'cognitive\_task2': 43.191527857099999, 'response\_time\_task2': 2033.7395035083}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 97.586412545300007, 'practice\_task2': 9.5048925002000004, 'college\_math': 91.585929221900003, 'cognitive\_task2': 45.752246678299997, 'response\_time\_task2': 1732.806181659}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 97.953585165099994, 'practice\_task2': 10.589496089400001, 'college\_math': 56.175443038399997, 'cognitive\_task2': 47.253492637199997, 'response\_time\_task2': 1853.2428011684001}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 98.489826683000004, 'practice\_task2': 10.406095008899999, 'college\_math': 53.285151620100002, 'cognitive\_task2': 46.584235343300001, 'response\_time\_task2': 2408.4177800755001}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 98.516055671399997, 'practice\_task2': 7.9002483539000004, 'college\_math': 77.078506130700006, 'cognitive\_task2': 45.334907705699997, 'response\_time\_task2': 2703.4708746046999}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 99.470156873600004, 'practice\_task2': 7.9325992739000002, 'college\_math': 66.148572344599998, 'cognitive\_task2': 40.860186834700002, 'response\_time\_task2': 2011.0369275865}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 99.535026254300007, 'practice\_task2': 13.4108676729, 'college\_math': 52.300134794199998, 'cognitive\_task2': 46.611769541599998, 'response\_time\_task2': 2608.8810361142}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 99.551292857299998, 'practice\_task2': 13.0256675934, 'college\_math': 102.8067493705, 'cognitive\_task2': 36.691592802899997, 'response\_time\_task2': 2314.5311297926}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 100.40000349749999, 'practice\_task2': 11.8295202773, 'college\_math': 45.1221180406, 'cognitive\_task2': 39.415009815600001, 'response\_time\_task2': 1845.1769190130001}  Result: {u'stress\_before\_test1': 48.6295578438, u'score\_test1': 1001.68887903, u'score\_math\_course1': 38.2880158438, u'score\_math\_course2': 43.3447493125}  Input data: {'iq': 100.5392932668, 'practice\_task2': 5.5598215096999999, 'college\_math': 46.997033733199999, 'cognitive\_task2': 44.401103628999998, 'response\_time\_task2': 2373.4333077786}  Result: {u'stress\_before\_test1': 48.6295578438, u'score\_test1': 1001.68887903, u'score\_math\_course1': 38.2880158438, u'score\_math\_course2': 43.3447493125}  Input data: {'iq': 100.6362832626, 'practice\_task2': 10.0848102217, 'college\_math': 46.080488379499997, 'cognitive\_task2': 51.173201216800003, 'response\_time\_task2': 1416.3390065269}  Result: {u'stress\_before\_test1': 48.6295578438, u'score\_test1': 1001.68887903, u'score\_math\_course1': 38.2880158438, u'score\_math\_course2': 43.3447493125}  Input data: {'iq': 100.6497506035, 'practice\_task2': 10.5247939405, 'college\_math': 87.735698616299999, 'cognitive\_task2': 47.903390758500002, 'response\_time\_task2': 2698.6896854339002}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 100.74595152080001, 'practice\_task2': 8.7439826764999999, 'college\_math': 39.849328575000001, 'cognitive\_task2': 43.341275868399997, 'response\_time\_task2': 2018.8671208179001}  Result: {u'stress\_before\_test1': 48.6295578438, u'score\_test1': 1001.68887903, u'score\_math\_course1': 38.2880158438, u'score\_math\_course2': 43.3447493125}  Input data: {'iq': 101.0524432047, 'practice\_task2': 6.7302305496999999, 'college\_math': 81.703299233799996, 'cognitive\_task2': 51.424276196199997, 'response\_time\_task2': 2262.2734176049998}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 101.0786520624, 'practice\_task2': 13.2926521847, 'college\_math': 60.671391400300003, 'cognitive\_task2': 46.785033262900001, 'response\_time\_task2': 2309.3614312152999}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 101.2733460634, 'practice\_task2': 10.558257383400001, 'college\_math': 93.909557013200001, 'cognitive\_task2': 42.022984405700001, 'response\_time\_task2': 2758.1901538002999}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 101.397950732, 'practice\_task2': 11.3824547787, 'college\_math': 52.564386023899999, 'cognitive\_task2': 39.599986200799997, 'response\_time\_task2': 2300.6536965902001}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 102.0405568361, 'practice\_task2': 7.4089815672999997, 'college\_math': 32.684045857199997, 'cognitive\_task2': 47.459194393600001, 'response\_time\_task2': 1894.3866521794}  Result: {u'stress\_before\_test1': 48.6295578438, u'score\_test1': 1001.68887903, u'score\_math\_course1': 38.2880158438, u'score\_math\_course2': 43.3447493125}  Input data: {'iq': 102.23647185980001, 'practice\_task2': 4.6113635246999998, 'college\_math': -10.0614573109, 'cognitive\_task2': 46.978788763700003, 'response\_time\_task2': 1602.7425001626}  Result: {u'stress\_before\_test1': 52.1621764571, u'score\_test1': 975.097286714, u'score\_math\_course1': 15.4616946857, u'score\_math\_course2': 19.8800084571}  Input data: {'iq': 102.3435947806, 'practice\_task2': 4.5571008398000004, 'college\_math': 101.81373651129999, 'cognitive\_task2': 51.347208865600003, 'response\_time\_task2': 2358.8105323897998}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 103.8299963489, 'practice\_task2': 6.5308735988000004, 'college\_math': 63.781880748399999, 'cognitive\_task2': 45.6374759833, 'response\_time\_task2': 1428.7743751569999}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 104.4791112874, 'practice\_task2': 6.1926805080999996, 'college\_math': 104.8236728432, 'cognitive\_task2': 48.857469665499998, 'response\_time\_task2': 2600.6907178228998}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 104.53786755669999, 'practice\_task2': 8.4819467944000007, 'college\_math': 30.545628382299999, 'cognitive\_task2': 48.428864522399998, 'response\_time\_task2': 1563.3790038133}  Result: {u'stress\_before\_test1': 48.6295578438, u'score\_test1': 1001.68887903, u'score\_math\_course1': 38.2880158438, u'score\_math\_course2': 43.3447493125}  Input data: {'iq': 105.6478678948, 'practice\_task2': 10.4965279869, 'college\_math': 73.614991076600006, 'cognitive\_task2': 48.848193953299997, 'response\_time\_task2': 1717.2447738011001}  Result: {u'stress\_before\_test1': 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'response\_time\_task2': 1363.2148486645001}  Result: {u'stress\_before\_test1': 48.6295578438, u'score\_test1': 1001.68887903, u'score\_math\_course1': 38.2880158438, u'score\_math\_course2': 43.3447493125}  Input data: {'iq': 106.34123570840001, 'practice\_task2': 14.132213119499999, 'college\_math': 56.6330780073, 'cognitive\_task2': 49.323230179200003, 'response\_time\_task2': 2158.1901646624001}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 106.5434524878, 'practice\_task2': 6.8271923528, 'college\_math': 11.617422900599999, 'cognitive\_task2': 46.173611088400001, 'response\_time\_task2': 2546.2792619915999}  Result: {u'stress\_before\_test1': 52.1621764571, u'score\_test1': 975.097286714, u'score\_math\_course1': 15.4616946857, u'score\_math\_course2': 19.8800084571}  Input data: {'iq': 106.8061195423, 'practice\_task2': 12.097383537700001, 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78.337511012}  Input data: {'iq': 107.3494407748, 'practice\_task2': 8.9671431649999995, 'college\_math': 37.157728095899998, 'cognitive\_task2': 51.376125569599999, 'response\_time\_task2': 2194.4962050293998}  Result: {u'stress\_before\_test1': 48.6295578438, u'score\_test1': 1001.68887903, u'score\_math\_course1': 38.2880158438, u'score\_math\_course2': 43.3447493125}  Input data: {'iq': 107.73459838620001, 'practice\_task2': 13.1073320108, 'college\_math': 70.359452699399995, 'cognitive\_task2': 47.412532514600002, 'response\_time\_task2': 2613.2187459277002}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 107.86129998059999, 'practice\_task2': 12.377164066900001, 'college\_math': 65.694675550100001, 'cognitive\_task2': 52.780330614500002, 'response\_time\_task2': 1124.9066323925999}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 107.95845305979999, 'practice\_task2': 10.3718415848, 'college\_math': 34.2082117908, 'cognitive\_task2': 45.657559666300003, 'response\_time\_task2': 1506.7664718031999}  Result: {u'stress\_before\_test1': 48.6295578438, u'score\_test1': 1001.68887903, u'score\_math\_course1': 38.2880158438, u'score\_math\_course2': 43.3447493125}  Input data: {'iq': 108.1509064167, 'practice\_task2': 14.2088160634, 'college\_math': 93.370690453099996, 'cognitive\_task2': 44.949774143799999, 'response\_time\_task2': 1426.995598539}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 108.25532928, 'practice\_task2': 5.8763901931999998, 'college\_math': 2.0442583095, 'cognitive\_task2': 47.071863495300001, 'response\_time\_task2': 2244.7280508014001}  Result: {u'stress\_before\_test1': 52.1621764571, u'score\_test1': 975.097286714, u'score\_math\_course1': 15.4616946857, u'score\_math\_course2': 19.8800084571}  Input data: {'iq': 108.2820076105, 'practice\_task2': 9.1104236050999994, 'college\_math': 94.196886830799997, 'cognitive\_task2': 52.352099084099997, 'response\_time\_task2': 1773.1389404617}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 109.0333262299, 'practice\_task2': 11.893628714, 'college\_math': -11.256949566399999, 'cognitive\_task2': 50.127544616900003, 'response\_time\_task2': 1373.0131763529}  Result: {u'stress\_before\_test1': 52.1621764571, u'score\_test1': 975.097286714, u'score\_math\_course1': 15.4616946857, u'score\_math\_course2': 19.8800084571}  Input data: {'iq': 110.5575565549, 'practice\_task2': 10.011510984999999, 'college\_math': 45.2664631516, 'cognitive\_task2': 51.899142481200002, 'response\_time\_task2': 2435.2576767278001}  Result: {u'stress\_before\_test1': 48.6295578438, u'score\_test1': 1001.68887903, u'score\_math\_course1': 38.2880158438, u'score\_math\_course2': 43.3447493125}  Input data: {'iq': 110.8079701529, 'practice\_task2': 10.8772618325, 'college\_math': 75.412641379999997, 'cognitive\_task2': 51.701155042800004, 'response\_time\_task2': 1864.5955479711999}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 111.345545727, 'practice\_task2': 5.7090699388999999, 'college\_math': 65.668360828399997, 'cognitive\_task2': 46.509686994299997, 'response\_time\_task2': 1732.9883987374999}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 111.72956219060001, 'practice\_task2': 8.5765894917000001, 'college\_math': 12.0631355655, 'cognitive\_task2': 50.334055120000002, 'response\_time\_task2': 1709.1197000940999}  Result: {u'stress\_before\_test1': 52.1621764571, u'score\_test1': 975.097286714, u'score\_math\_course1': 15.4616946857, u'score\_math\_course2': 19.8800084571}  Input data: {'iq': 113.0796193847, 'practice\_task2': 10.953887121999999, 'college\_math': 75.435871778500001, 'cognitive\_task2': 57.270772919999999, 'response\_time\_task2': 2238.3452597835999}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 113.21292603800001, 'practice\_task2': 14.331870948600001, 'college\_math': 71.306712316399995, 'cognitive\_task2': 46.0180626832, 'response\_time\_task2': 2615.4985931591}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 113.2886725435, 'practice\_task2': 14.6436380786, 'college\_math': 41.621583540700001, 'cognitive\_task2': 53.107357708199999, 'response\_time\_task2': 1416.6634772673999}  Result: {u'stress\_before\_test1': 48.6295578438, u'score\_test1': 1001.68887903, u'score\_math\_course1': 38.2880158438, u'score\_math\_course2': 43.3447493125}  Input data: {'iq': 113.3386821023, 'practice\_task2': 5.3463165123999996, 'college\_math': 98.839263406800001, 'cognitive\_task2': 52.9207546787, 'response\_time\_task2': 2278.9979858920001}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 113.3412530595, 'practice\_task2': 13.306053845699999, 'college\_math': 54.348685017400001, 'cognitive\_task2': 58.943385810700001, 'response\_time\_task2': 1607.6759698323999}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 113.4614308009, 'practice\_task2': 10.8212306069, 'college\_math': 14.0136597458, 'cognitive\_task2': 55.348238740600003, 'response\_time\_task2': 2676.2827377798999}  Result: {u'stress\_before\_test1': 52.1621764571, u'score\_test1': 975.097286714, u'score\_math\_course1': 15.4616946857, u'score\_math\_course2': 19.8800084571}  Input data: {'iq': 113.4698738901, 'practice\_task2': 4.1992565165000002, 'college\_math': -7.2789636947999998, 'cognitive\_task2': 52.8268625559, 'response\_time\_task2': 1765.4269289192}  Result: {u'stress\_before\_test1': 52.1621764571, u'score\_test1': 975.097286714, u'score\_math\_course1': 15.4616946857, u'score\_math\_course2': 19.8800084571}  Input data: {'iq': 113.54188073909999, 'practice\_task2': 5.8178458542999998, 'college\_math': -9.0362012507999996, 'cognitive\_task2': 57.848692934100001, 'response\_time\_task2': 2366.6077316236001}  Result: {u'stress\_before\_test1': 52.1621764571, u'score\_test1': 975.097286714, u'score\_math\_course1': 15.4616946857, u'score\_math\_course2': 19.8800084571}  Input data: {'iq': 113.787211578, 'practice\_task2': 8.2248211366999993, 'college\_math': 40.611769039499997, 'cognitive\_task2': 59.458032396999997, 'response\_time\_task2': 1970.4912600917}  Result: {u'stress\_before\_test1': 48.6295578438, u'score\_test1': 1001.68887903, u'score\_math\_course1': 38.2880158438, u'score\_math\_course2': 43.3447493125}  Input data: {'iq': 114.6022342831, 'practice\_task2': 11.056869151500001, 'college\_math': 76.303139881299998, 'cognitive\_task2': 51.288289248799998, 'response\_time\_task2': 1445.2558735575999}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 114.60759575039999, 'practice\_task2': 8.6075633314999997, 'college\_math': 45.882327536699997, 'cognitive\_task2': 63.599520510200001, 'response\_time\_task2': 1665.1447160547}  Result: {u'stress\_before\_test1': 48.6295578438, u'score\_test1': 1001.68887903, u'score\_math\_course1': 38.2880158438, u'score\_math\_course2': 43.3447493125}  Input data: {'iq': 115.130278933, 'practice\_task2': 14.6303708643, 'college\_math': 108.2142859164, 'cognitive\_task2': 61.456836180400003, 'response\_time\_task2': 1555.5421303887999}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 115.1565110075, 'practice\_task2': 6.2230462699000002, 'college\_math': 71.993816216200003, 'cognitive\_task2': 54.047656422499998, 'response\_time\_task2': 1594.440447442}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 115.16173860390001, 'practice\_task2': 6.4725401722999996, 'college\_math': 95.988670399, 'cognitive\_task2': 53.487175739000001, 'response\_time\_task2': 1923.7719630122999}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 115.3955227518, 'practice\_task2': 6.2249531150999999, 'college\_math': 65.921324390799995, 'cognitive\_task2': 50.833640121800002, 'response\_time\_task2': 2356.1257960470998}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 115.44802113119999, 'practice\_task2': 11.839887616, 'college\_math': 97.364419414400004, 'cognitive\_task2': 56.430155171999999, 'response\_time\_task2': 2194.2896770532002}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 115.49539638429999, 'practice\_task2': 8.7569526660000001, 'college\_math': 41.499814074100001, 'cognitive\_task2': 58.935809120099997, 'response\_time\_task2': 1972.4376423971}  Result: {u'stress\_before\_test1': 48.6295578438, u'score\_test1': 1001.68887903, u'score\_math\_course1': 38.2880158438, u'score\_math\_course2': 43.3447493125}  Input data: {'iq': 115.5005155411, 'practice\_task2': 11.1381525188, 'college\_math': 23.0040088091, 'cognitive\_task2': 54.563191884299997, 'response\_time\_task2': 1314.5546939407}  Result: {u'stress\_before\_test1': 52.1621764571, u'score\_test1': 975.097286714, u'score\_math\_course1': 15.4616946857, u'score\_math\_course2': 19.8800084571}  Input data: {'iq': 115.6447802778, 'practice\_task2': 11.3836923279, 'college\_math': 53.259462521899998, 'cognitive\_task2': 51.836614489600002, 'response\_time\_task2': 2142.8601388090001}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 116.4967901964, 'practice\_task2': 10.2148758022, 'college\_math': 7.1367033596000002, 'cognitive\_task2': 54.160520067100002, 'response\_time\_task2': 2180.8253342758999}  Result: {u'stress\_before\_test1': 52.1621764571, u'score\_test1': 975.097286714, u'score\_math\_course1': 15.4616946857, u'score\_math\_course2': 19.8800084571}  Input data: {'iq': 116.8687691404, 'practice\_task2': 8.4939366213999996, 'college\_math': 29.007326156200001, 'cognitive\_task2': 60.003439360900003, 'response\_time\_task2': 2293.4118254894001}  Result: {u'stress\_before\_test1': 52.1621764571, u'score\_test1': 975.097286714, u'score\_math\_course1': 15.4616946857, u'score\_math\_course2': 19.8800084571}  Input data: {'iq': 116.9997352971, 'practice\_task2': 4.1023390622999996, 'college\_math': 31.457076184799998, 'cognitive\_task2': 66.664670789499993, 'response\_time\_task2': 1973.5223612934999}  Result: {u'stress\_before\_test1': 48.6295578438, u'score\_test1': 1001.68887903, u'score\_math\_course1': 38.2880158438, u'score\_math\_course2': 43.3447493125}  Input data: {'iq': 117.2336979591, 'practice\_task2': 15.7199258601, 'college\_math': 66.819796543300001, 'cognitive\_task2': 64.970170332999999, 'response\_time\_task2': 2212.439236574}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 117.6362307398, 'practice\_task2': 15.7572016244, 'college\_math': 21.642410139799999, 'cognitive\_task2': 62.888502653800003, 'response\_time\_task2': 1661.6229183774001}  Result: {u'stress\_before\_test1': 52.1621764571, u'score\_test1': 975.097286714, u'score\_math\_course1': 15.4616946857, u'score\_math\_course2': 19.8800084571}  Input data: {'iq': 118.1598860029, 'practice\_task2': 8.1989166186000002, 'college\_math': 101.4455556512, 'cognitive\_task2': 60.891919438199999, 'response\_time\_task2': 1782.9536990798999}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 118.37743645899999, 'practice\_task2': 13.0782745369, 'college\_math': 96.0793710019, 'cognitive\_task2': 62.228269728199997, 'response\_time\_task2': 1799.0756584696001}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 119.26657094869999, 'practice\_task2': 13.185685187000001, 'college\_math': 72.273788936700001, 'cognitive\_task2': 68.256988205400006, 'response\_time\_task2': 2212.7611342547998}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 119.4692293784, 'practice\_task2': 11.043373001699999, 'college\_math': 72.6776264951, 'cognitive\_task2': 61.691438529899997, 'response\_time\_task2': 1710.1017158426}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 119.5694890278, 'practice\_task2': 13.767664251799999, 'college\_math': 30.154978414399999, 'cognitive\_task2': 62.804897373000003, 'response\_time\_task2': 2081.0193162486999}  Result: {u'stress\_before\_test1': 52.1621764571, u'score\_test1': 975.097286714, u'score\_math\_course1': 15.4616946857, u'score\_math\_course2': 19.8800084571}  Input data: {'iq': 119.6378979478, 'practice\_task2': 9.1335935474000003, 'college\_math': 84.068846118300002, 'cognitive\_task2': 64.940385918399997, 'response\_time\_task2': 1889.9831266826}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 120.2167378426, 'practice\_task2': 10.1433803326, 'college\_math': 53.540428730099997, 'cognitive\_task2': 61.967540763800002, 'response\_time\_task2': 2084.5273235354998}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 120.3436561277, 'practice\_task2': 6.1203463677999999, 'college\_math': 105.4754835653, 'cognitive\_task2': 72.821210962199999, 'response\_time\_task2': 2140.4743040696999}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 120.5365604051, 'practice\_task2': 14.3331244989, 'college\_math': 18.4602673847, 'cognitive\_task2': 63.999045204200002, 'response\_time\_task2': 1419.6192773621001}  Result: {u'stress\_before\_test1': 52.1621764571, u'score\_test1': 975.097286714, u'score\_math\_course1': 15.4616946857, u'score\_math\_course2': 19.8800084571}  Input data: {'iq': 120.6687514953, 'practice\_task2': 12.4875648964, 'college\_math': 74.344601944600001, 'cognitive\_task2': 63.476056034400003, 'response\_time\_task2': 1780.9972918271999}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 120.7003343887, 'practice\_task2': 10.923177091399999, 'college\_math': 28.8766235483, 'cognitive\_task2': 76.395167809900002, 'response\_time\_task2': 2404.8966826361002}  Result: {u'stress\_before\_test1': 52.1621764571, u'score\_test1': 975.097286714, u'score\_math\_course1': 15.4616946857, u'score\_math\_course2': 19.8800084571}  Input data: {'iq': 121.85093676060001, 'practice\_task2': 12.9642541673, 'college\_math': 30.145025881799999, 'cognitive\_task2': 77.6690429298, 'response\_time\_task2': 2007.3473387040001}  Result: {u'stress\_before\_test1': 52.1621764571, u'score\_test1': 975.097286714, u'score\_math\_course1': 15.4616946857, u'score\_math\_course2': 19.8800084571}  Input data: {'iq': 122.1995690218, 'practice\_task2': 6.8541644134000004, 'college\_math': 39.862828184199998, 'cognitive\_task2': 69.057972727899994, 'response\_time\_task2': 2954.0765635478001}  Result: {u'stress\_before\_test1': 48.6295578438, u'score\_test1': 1001.68887903, u'score\_math\_course1': 38.2880158438, u'score\_math\_course2': 43.3447493125}  Input data: {'iq': 122.2194700222, 'practice\_task2': 9.2959593126000009, 'college\_math': 36.632244356800001, 'cognitive\_task2': 74.382925612799994, 'response\_time\_task2': 1905.2233043783001}  Result: {u'stress\_before\_test1': 48.6295578438, u'score\_test1': 1001.68887903, u'score\_math\_course1': 38.2880158438, u'score\_math\_course2': 43.3447493125}  Input data: {'iq': 123.0909691512, 'practice\_task2': 12.1426777456, 'college\_math': 30.786670648299999, 'cognitive\_task2': 71.153587959999996, 'response\_time\_task2': 2349.5720313400998}  Result: {u'stress\_before\_test1': 48.6295578438, u'score\_test1': 1001.68887903, u'score\_math\_course1': 38.2880158438, u'score\_math\_course2': 43.3447493125}  Input data: {'iq': 123.1380582986, 'practice\_task2': 5.6618364633000002, 'college\_math': 8.6505122009999997, 'cognitive\_task2': 75.739591821399998, 'response\_time\_task2': 2005.8201820859999}  Result: {u'stress\_before\_test1': 52.1621764571, u'score\_test1': 975.097286714, u'score\_math\_course1': 15.4616946857, u'score\_math\_course2': 19.8800084571}  Input data: {'iq': 123.1492121408, 'practice\_task2': 10.522956320700001, 'college\_math': 82.192925911299994, 'cognitive\_task2': 76.757647629100006, 'response\_time\_task2': 2628.3770537491}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 123.4015863084, 'practice\_task2': 3.7108700112999999, 'college\_math': 22.314076826600001, 'cognitive\_task2': 72.385478450199997, 'response\_time\_task2': 2057.7449751384002}  Result: {u'stress\_before\_test1': 52.1621764571, u'score\_test1': 975.097286714, u'score\_math\_course1': 15.4616946857, u'score\_math\_course2': 19.8800084571}  Input data: {'iq': 123.7599344865, 'practice\_task2': 10.576348126599999, 'college\_math': 81.277035403599996, 'cognitive\_task2': 80.473899662700006, 'response\_time\_task2': 2007.0248383851001}  Result: {u'stress\_before\_test1': 49.6166020482, u'score\_test1': 1009.85001005, u'score\_math\_course1': 73.0314115181, u'score\_math\_course2': 78.337511012}  Input data: {'iq': 123.8504042102, 'practice\_task2': 14.300676794399999, 'college\_math': 40.246878753200001, 'cognitive\_task2': 75.195289043200006, 'response\_time\_task2': 1910.9994730101}  Result: {u'stress\_before\_test1': 48.6295578438, u'score\_test1': 1001.68887903, u'score\_math\_course1': 38.2880158438, u'score\_math\_course2': 43.3447493125}  [ OK ] - This is a valid PFA document!  Stopping the containers...  Stopping tests\_db\_1 ... done  Removing tests\_pfa\_validator\_run\_1 ... done  Removing tests\_clus-pct-ts\_run\_1 ... done  Removing tests\_woken\_db\_setup\_run\_1 ... done  Removing tests\_sample\_data\_db\_setup\_run\_1 ... done  Removing tests\_create\_dbs\_run\_1 ... done  Removing tests\_wait\_dbs\_run\_1 ... done  Removing tests\_db\_1 ... done  Removing network tests\_default  Stopping the containers...  Removing network tests\_default  WARNING: Network tests\_default not found. |