

Vocabulary Puzzle

By Devarai 2011

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This is an educational game with which one can improve his/her language skills. It presents words/phrases out of which you have to combine new valid words/phrases. For every correct expression you find in the questioned language you can earn score points. The longer the word is you find the more points you get. Time of play is measured and can be limited if desired. Out-of-the-box there are two dictionaries included that allow you to play in English and German. The English dictionary has a vast 180 000 different words and the German one 90 000. Custom dictionaries are supported. For custom dictionaries there is an administration application included. During the game words can be entered through the keyboard or by clicking on the letters shown with the mouse. Various statistics are recorded and can be submitted after a game including the player's email address, the date of play, the number of unique words found and the time of play.

This game requires PHP 4+ and a MySQL database to function well. Communication with the backend includes some encryption mechanisms to prevent abuse or cheating.

A game is set up through an easily to understand and documented XML file.

XML Example

This XML file contains everything needed for the Flash app to create and let play a vocabulary puzzle.

Example of a puzzle XML file:

```
<?xml version="1.0" encoding="UTF-8"?>
<vocabularyPuzzle submitResults="true" timeLimit="120"
randomWordSelection="true">

<id>My Demo Puzzle No.1</id>

<php>http://localhost/</php>

<word language="English">THEMEFOREST</word>
<word language="English">AUDIOJUNGLE</word>
<word language="English">CODECANYON</word>
<word language="German">OKTOBERFEST</word>

</vocabularyPuzzle>
```

The root element of a vocabulary puzzle XML file is "vocabularyPuzzle". It has various attributes:

- If you have the backend set up and want to acquire the players' results you have to set "submitResults" to "true" otherwise to "false".
- "timeLimit" is "0" if you don't want to have a limit of time to solve the puzzle. Otherwise timeLimit is the time allowed for solving the puzzle in seconds (1800 means i.e. 30 minutes of time).
- "randomWordSelection": if this is set to "true" the words that follow are picked out randomly in the game to be played. If it is false the words are played in the listed order.

The children tag "**id**". This is very important and every puzzle file must have this tag. Furthermore this "id" has to be unique among all your puzzles. It should be readable too because it is eventually written to the database to differentiate between different puzzles.

The children tag "**php**" identifies the absolute/relative path to the php scripts that are used to write the results to and search the data base

The children tags "**word**" defined base words. With the letters of these "words" the player has to find new words. The attribute "**language**" sets the language that is valid. Out-of-the box the languages "English" and "German" are included.

Setting it up on your server

This components needs a PHP/MySQL backend. How to set this up is described in the following.

You need a MySQL database and PHP4 +. If that is okay you have to copy the PHP files (in the PHP sub-folder) in a directory on your web server. You have to edit the "config.inc.php" file so the database password and username are correct (standard is "root" and "root"). With e.g. PHPMYAdmin you create within your MySQL a db name "vocabularypuzzle" (default name you can change here if you like). After that you call on your server (e.g.: <http://localhost:80/.../install.php>) the install script which sets up the tables on you database. This script you should delete after usage.

After this the only thing that is missing is the dictionaries. The install script created two tables : "English" and "German". These tables have to be populated now. In the "dictionaries" sub-folder you find a file "dictionaries.sql". If you have PHPMYAdmin on your servers you just upload this file and call the "Import" functionality of PHPMYAdmin. Otherwise use the mysql.exe file which is included in every MySQL installation (in the "bin" sub-folder).

Call

```
mysql -u #username# -p #database# < dictionaries.sql
```

#username# is your username of course. #database# is the database (e.g. "vocabularyPuzzle").

After this everything should work fine. The dictionaries work and if a user submits his/her data in the results dialog window after a play the results should be written into the appropriate table on the database. (You can check this with PHPMyAdmin e.g.). However the player does only have the possibility to submit if this is enabled in the puzzle.xml file (attribute submitResults="true").

Specifying a puzzle file location in the HTML page

The puzzle Flash component supports FlashVars. With this you can pass over from the HTML file to the Flash component a parameter. To enforce a puzzle file other than the default one you have to provide a "puzzleUrl" parameter.

E.g.:

```
<object classid="clsid:d27cdb6e-ae6d-11cf-96b8-444553540000"
codebase="http://download.macromedia.com/pub/shockwave/cabs/flash/swflash.c
ab#version=10,0,0,0" width="590" height="300" id="vocabularyPuzzle"
align="left">
    <param name="allowScriptAccess" value="sameDomain" />
    <param name="allowFullScreen" value="false" />
    <param name="movie" value="vocabularyPuzzle.swf" />
    <param name="quality" value="high" />
    <param name="scale" value="noscale" />
    <param name="salign" value="lt" />
    <param name="bgcolor" value="#ffffff" />
    <param name="flashvars" value="puzzleUrl=demopuzzle.xml" />
    <embed flashVars="puzzleUrl=demopuzzle.xml"
src="vocabularyPuzzle.swf" quality="high" scale="noscale" salign="lt"
bgcolor="#ffffff" width="590" height="300" name="vocabularyPuzzle"
align="left" allowScriptAccess="sameDomain" allowFullScreen="false"
type="application/x-shockwave-flash"
pluginspage="http://www.adobe.com/go/getflashplayer" />
</object>
```

Custom Dictionaries

The component allows for custom dictionaries. In the above mentioned XML file you can chose for the word tags an attribute "language" (e.g.: <word language="German">OKTOBERFEST</word>). If you have a custom dictionary with the name "Football" and you'd like it to be used, just set the language attribute to this language).

There is a custom dictionaries administration application included. It's the "admin.swc" movie. It needs a configuration XML file "admin.xml" to set up the path to the php files. Furthermore you have to set the password for this application in the "config.inc.php". The variable is called "\$custom_password". With this application you can have an overview of your custom dictionaries, create new ones, delete old ones, insert words into a dictionary and search for words in a dictionary.

The screenshot shows a web application titled "Vocabulary Puzzle - Custom Dictionaries". It features a sidebar on the left with a "Custom Dictionaries" section containing a list of five dictionaries: "1. Football", "2. Presidents" (which is highlighted), "3. Computers", "4. Drugs", and "5. Food". Below this list is a "Selected Dictionary Description" box showing "U.S. presidents". To the right of the sidebar, there are input fields for "Dict. name" (containing "Presidents") and "Description" (containing "U.S. presidents"). Below these fields are three buttons: "Clear", "Delete", and "Create new" (with a right-pointing arrow). Further right is a "Search for a word" section with a text input containing "Obama" and a magnifying glass icon. Below that is an "Insert a new word" section with an empty text input and a magnifying glass icon. At the bottom of the interface is a "Status:" label.

Fig 1. The included custom dictionaries admin application

Credits

- The sound effects are from the Free Sound Project (www.freesound.org)
- Flag icons are from <http://www.icondrawer.com>
- The included dictionaries are derived from the GNU GCIDE project and from freedict.org. License: GNU GPL 1

Thank you for purchasing this product and enjoy.

Henning