

Abstract

The project aims to make the To-Do list management easier in a different way. There are a lot of Task managers, To-Do list managers out there which provides a lot of crude functionalities such as priority assignment, alarms, automated removal, email integration etc. I have thought of adding a few of the aforementioned features in the current project.

But, along with that, I have tried to introduce a new idea - The Method of Loci. This is a method which focuses on the creation of "Mind Palace" which are considered highly useful in the process of remembering seemingly long or random lists of numbers, items - anything. I have tried to approach this method by introducing Automated Story telling techniques. The idea is in a really crude form, but it is promising.

The project manages To-Do lists of each user and upon request, dynamically creates an interesting story which is easy to remember. So, input your To-Do list, create a story, and you never have to look at your list again.

Introduction

loci Notes introduces a new concept of Artificial Intelligence into a daily requirement. In currently available applications, one has to keep an eye on the list. One has to scroll through the To-Do list again and again. loci Notes makes it easy to "remember" your To-Do list.

A story is something every human being enjoys and it is something that comes natural and need not be remembered. Here, I try to convert the To-Do list into a story which has elements arranged in such an order that is easy to be recalled.

To make up a story dynamically, there are several approaches possible. I chose Method of loci because it is useful for small as well as large To-Do lists. It creates a "Mind Palace" - an imaginary palace - which is having a certain prefixed layout. There are certain points - loci - where one can put objects which are to be remembered. After defining a complete layout, a visualization is done. The brain remembers it very easily, with exact details. As the user practices it, it becomes natural.

The use of this method has several benefits - it is interesting, provides ease by removing the need to go back to the list and it improves the individual's memory. The more one uses it, the more used-to he gets to it. The more comfortable one gets, remembering larger lists gets easier. And then one can also try to apply the same method to other areas that one may fancy.

Previous Work

Method of Loci:

The Method of loci also called the memory palace, is a mnemonic device introduced in ancient Roman and Greek rhetorical treatises. It is a method of memory enhancement which uses visualization to organize and recall information. Many memory contest champions claim to use this technique to recall faces, digits, and lists of words. It is also sometimes referred to by "Mind Palace Method".

Interactive Story Telling:

Interactive Storytelling (IS) is a form of digital entertainment in which users create or influence a dramatic storyline through actions, either by issuing commands to the story's protagonist, or acting as a general director of events in the narrative. Interactive storytelling is a medium where the narrative, and its evolution, can be influenced in real-time by a user. We use data-driven strategies that have a library of "story components" which are sufficiently general that they can be combined smoothly in response to a user's actions. Further, we can also add Natural Language Processing to make the storytelling efficient and precise.

To-Do Lists:

People working in different industry, job criteria tends to have different To-Do lists. A programmer might probably have a list which involves removal of bugs, implementing several features etc. while a user working as a news reporter might write a list the has meetings, site visits, blog posts, documentations etc. as his list.

Based on this separations, a separate Mind Palace can be devised. In this project, I have tried to propose a crude functioning structure for a Web Developer.

Development

Tools/Languages used:

- PHP
- MySQL
- Twitter Bootstrap - CSS framework
- JavaScript

Functionalities of the Application:

- User management
- Task List Management
 - Add Task
 - Remove Task
- Create a Mind Palace based on current To-Do list

User Management:

Registration: Registration form requires a valid email ID, a user name and a password with at least one number and a combination of Capital and lower case letters. The validation is done by JavaScript - forms.js. A user cannot register with previously existing email ID.

Upon successful registration, a database entry is made for the user along with a unique ID number. The user can now login.

Login: Login is possible from the home page as well as a separate login page. Login form requires email ID and password. Session remains alive until the user signs off.

Security:

JavaScript: Validation of email ID. Validation of password as mentioned above. Every URL is filtered. All the inputs are sanitized. Passing the password in sha512 hash with JavaScript.

PHP: Secure sessions by restricting cookie access from user scripts. Refreshing session IDs upon every refresh to avoid session hijacking.

MySQL: Using mysqli. Checking user authentication before executing any statements. Adding sha512 pseudo random 16bytes salt with password which is also stored as sha512 hash value. Minimum user rights on the database.

User cannot remove other user's notes. If one tries, instant logout is made.

Task List Management:

PHP: Provide with an input area which is used to input new notes. Every note has individual option to remove it. Note removal is URL based. The possibility to construct a URL which could possibly manipulate the data of other users has been removed by aforementioned measures.

MySQL: Every task is attached with unique user ID. Task is also assigned a unique ID. Upon removal, all the references of that task are removed.

Mind Palace construction:

PHP: Fetch all the keywords from the dictionary which appear in the user's list. Then fetch sentences associated with every keyword and arrange it in proper order.

MySQL: A table containing all the keywords supported with every keyword having unique ID. Another table having sentences associated with the unique IDs of the supported keywords.

Further Work

I have been repetitively stating that the project is in its crudest form and hence it has vast possibilities of expansion and improvement. Below I will state drawbacks and my thoughts on what can be improved and possible ways to do it.

Not implemented:

- Sub tasks
- Ability to assign tasks to other users
- About Us page
- Contact Us page
- Privacy
- Terms and conditions

User Management:

- Better hierarchy is required to implement the ability to assign task to other users.
- email confirmation
- Personal Details to provide with better Mind Palaces

Mind Palace:

- Currently supporting only 5 keywords with sentences.
- Proper ordering of sentences has not been implemented
- Better algorithms can be implemented
- Better database design
- Improve database of keywords, sentences, stories, scenarios etc.
- Further research has to be done

Conclusions

Concepts of Artificial Intelligence can be applied to daily routine works. loci Notes has successfully proven it to be true.

loci Notes is a secure and easy way to organize simple To-Do lists, take notes and a fun way to remember them.

References

PHP Manual: <http://www.php.net/manual/en/index.php>

WikiHow on Mind Palace: <http://www.wikihow.com/Build-a-Memory-Palace>

MySQL Reference: <http://dev.mysql.com/doc/refman/5.6/en/>

CMU on NLP: <http://www.cs.cmu.edu/afs/cs/project/ai-repository/ai/areas/nlp/0.html>

Twitter Bootstrap: <https://github.com/twbs/bootstrap>

And our dear Wikipedia and Google at all the times.