

Integrating various views in Mind Mapping Tool

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Abstract— In this era, every person is burdened with a number of activities to be carried out. With this busy schedule, some tasks are bound to slip out which may be crucial. It would be easier to deal with tasks if their logical relationships could be recorded and explored by focusing exclusively on the relevant and hiding the irrelevant. Mind Mapping Software allows these relationships to be stored in a graphical format with the ability to fold away or unfold details at will. This project aims at integrating various views such as Priority and Temporal views in the FreeMind, Open-Source Mind Mapping Tool. This is essential because there may be some tasks whose deadline is prior to the others. Hence the user must be notified about the priority order in which the tasks need to be carried out according to their deadlines.

Keywords— Mind Map, logical view, temporal view, priority view

I. INTRODUCTION

Mind Mapping, which was brought out by English Scholar Tony Buzan, the chairman of Brain Foundation, is a method used to generate, visualize, structure and classify ideas helping human memorizing. A mind map is a diagram used to visually outline information. A mind map is often created around a single word or text, placed in the center, to which associated ideas, words and concepts are added. Major categories radiate from a central node, and lesser categories are sub-branches of larger branches. Categories can represent words, ideas, tasks, or other items related to a central key word or idea. Mind maps have many applications in personal, family, educational, and business situations, including note taking, brainstorming (wherein ideas are inserted into the map radially around the center node, without the implicit prioritization that comes from hierarchy or sequential arrangements, and wherein grouping and

organizing is reserved for later stages), summarizing, as a mnemonic technique, or to sort out a complicated idea. Mind mapping help to surface main ideas and explore ideas linking to them. They also help to build connections between main ideas and visually display this. Mind mapping can be used to summarise information or think through complex problems. A mind mapping is a highly effective way of getting information in and out of your brain – it is a creative and logical means of note-taking and note-making that literally “maps out” your ideas. All mind mapping have some things in common. They have a natural organizational structure that radiates from the center and use lines, symbols, words, color and images according to simple, brain-friendly concepts. A mind mapping converts a long list of monotonous information into a colorful, memorable and highly organized diagram that works in line with your brain's natural way of doing things.

II. MIND MAPPING

A. Evolution of Mind Maps

Hand drawn mind maps are easy to create and often more a personal kind of overview. You can make them anywhere you want and take them with you by simply folding it and putting it in your pocket. The disadvantage is that it is more 'challenging' to edit the map and to use it for presentations and it becomes clumsy with the increase in the size of the map. Digital Mind maps are very powerful when you have lots of information, when you want to share the map or work on it with others.

B. Integrating views in Mind Mapping Tool

There are more than a dozen Mind Mapping Tools available free of cost in the market. However they do not fulfill the main purpose of removing the stress completely from the user. The main aim of a Mind Map tool is to get rid

of remembering the various tasks that are to be performed by the user and not to miss out on any task. For this purpose, an idea of integrating 3 views simultaneously in the Mind Mapping Software has been proposed. The Mind Map software is introduced to consist of 3 views i.e. logical view, priority view and temporal view. The logical view gives a brief overview of a tree-like structure consisting of all the tasks that are to be performed by the user allowing the user to fold or unfold details at will. The temporal view will have the ability to assign deadlines to all these tasks in the map as they get entered in the map. Finally, all these priorities will get sorted and get arranged as per their severity of being performed in the priority view. These views will mutually coordinate with each other to notify the user of all the highest priority tasks. A basic concept can be represented by the figure below.

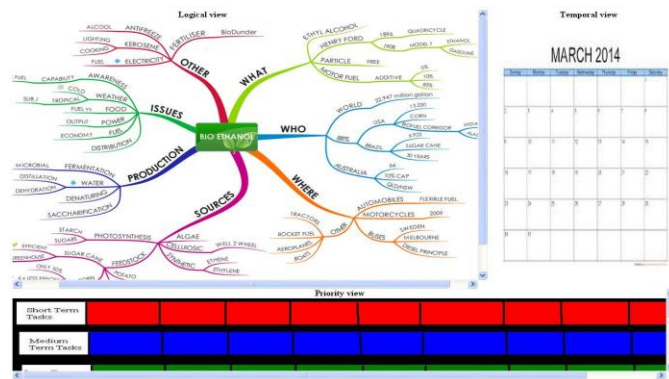


Fig: Proposed integrated Mind Mapping Tool

III. ADDITIONAL FEATURES

The most noteworthy feature in this tool is the integration of the 3 views and the mutual coordination between them. Because of this coordination, any change made in any of the view gets reflected in the remaining views. The separation of the temporal view provides a bit of ease to the user. This allows the user to simply click on a respective date in the temporal view and get the list of all the activities to be carried out on that particular date. This also means that you can simply click on any node in the map and get all the details relevant to that activity such as its deadline, priority, task status and other information. The main benefit of this is the convenience that gets provided to the user who doesn't need to remember any activity but will simply receive a notification at the appropriate deadline of the highest priority task (that is present in the short term queue of tasks in the priority view) to be executed. Some of the proposed features of this tool are described below:

A. Various classification of priority stacks

The priority view comprises of a number of priority stack which contain the different activities sorted on the basis of their priorities. These stacks can vary as per the user requirements. In this proposed model, we have introduced 5 stacks namely,

- Short term stack of activities which hold all the tasks that are to be completed within a week from the entry of the task.
- Medium term stack of activities which hold all the tasks whose deadline extends upto a month of completion from the entry of the task in the map.
- Long term stack of activities may hold all those activities whose deadlines extend more than 1 month.
- Pending list of activities which holds all those activities which have not been completed before their due date. These may have been kept on hold due to unavailability of some resource or may be assigned a later deadline. This will assign a new priority to these tasks accordingly.
- You may optionally keep a dead list of activities that have been completed. This may be helpful if you wish to renew any completed task by assigning a new deadline to it.

B. Notifications for the tasks

The task whose deadline has approached will be termed as the most crucial task because it must be completed before its due date. Hence such a task must be notified to the user for completion urgently. In such a case, the user receives a pop-up reminding him of the activity. If the user responds with a completion of the task then the activity gets discarded or could get added to the dead list of tasks (for renewal at later stage). However, the user is provided with another option of reassigning a new deadline to that task and accordingly, it gets added again to the respective priority queue again.

C. Templates

In-built templates could be provided for providing layout of the map in the logical view with respect to the application of the tool. Suppose the mind map is being used in the industries, then the figure depicts a sample template.

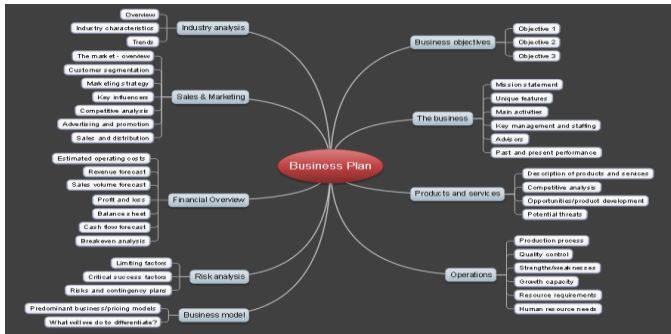


Fig: Business Plan Template

Source: Mind Maple (Mind Mapping Tool)

Another application could be in describing the course of a particular subject. This may be represented as:

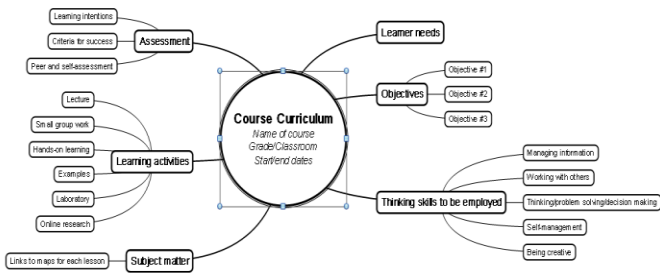


Fig: Course Curriculum Template

Source: Mind Maple (Mind Mapping Tool)

These templates will facilitate in saving time for the user in adding nodes and they provide an idea to the user in depicting their ideas. Hence they add a great deal of convenience to the mind maps.

D. Task Status

At any point of time, the user may assign labels to the nodes according to the nodes as per his needs like completed or waiting for some resources. This means that you have noted the complete information of a particular activity like whether it is on hold or has been completed.

E. Widget for quicker access

For quicker access, it would be highly efficient to provide a desktop widget of this application which will start running in the background as soon as the machine is turned on. This will help in quick review of the map and the short term tasks.

F. Additional information to a node

Each node can be accompanied by some additional information like some links, files or notes where you can

store some description of the node or some image or some link.

G. Weekly View of Tasks

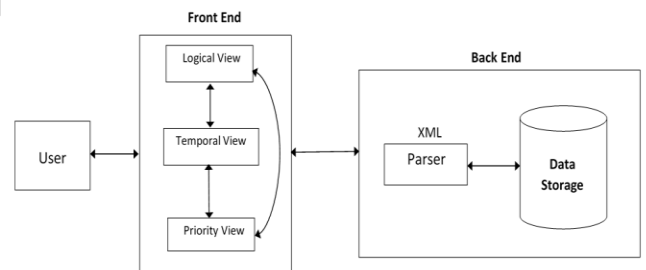
A weekly view of the tasks in their order of precedence could be provided for increasing efficiency. A sample can be represented as:



Source: Mind Maple (Mind Mapping Tool)

IV. SYSTEM ARCHITECTURE

The system architecture for this proposed system has been proposed as shown in the diagram below.



SYSTEM ARCHITECTURE

The front end of the system as described comprises of the basic layout which has been partitioned into 3 views: logical, priority and temporal view which mutually coordinate with each other and help in providing interactivity to the user. On the other hand, all the information regarding the map will get stored in the database in XML format. Each node will have its own structure which is described in next section. This values will be entered in the respective XML tag of that particular node whenever it is filled in by the user. Hence looking at the architecture of this proposed system we can get a clear understanding.

V. DATA STRUCTURE

For this model of mind map to be developed, a varying type of data structure is required. This data structure is used for each node which will be stored as XML in the database with the attributes acting as the tags of each node. A node will have a respective tag only when some information is present in it. Each node in the map must contain the following fields:

Field Name	Value
Id	Unique id for each node
Status	Node status – character string
Description	Name of the task
Date	Deadline for completion
Leaf	Boolean Value true for leaf node
Parent	Pointer to parent node
Priority	The priority stack where the node lies
Links	Additional information
Notes	Additional Information
Files	Additional Information
VisAttr	Visual Attributes of node

Traditional mindmap is in essence a tree structure of data nodes. The number of nodes is often limited, so we can use a simplified model to represent this structure. Each node has a unique id to identify itself, and a parent field to indicate its hierarchy level. The id may be assigned using hierarchical numbering so that it becomes easy to trace out the hierarchy in the map. The description field contains (mostly) text data; this is also the visible text shown in the mindmap. VisAttr determines the node's display format such as location, color, font, icon etc. However, our proposed model needs additional fields to describe the relationships between the three views. Status is a text string to describe the current status of the specified node: e.g., a tag like "completed" or "on hold: waiting for some resource", etc. The date and time field indicates the exact deadline of the task before which it must be completed. The priority field gets updated when the node is added to one of the priority stacks in the priority view. Some additional information of a node can be stored in fields like links, notes or files. These are optional fields that must be represented only when the respective information is added to that node. Above listed are the main attributes that fulfill the requirements of this type of Mind Mapping Tool.

VI. CONCLUSION AND FUTURE SCOPE

Mind mapping is a popular graphical technique tool among users because of its high efficiency and low cost. This

major function provides great useful way of keeping track of all the user's daily work load. This is a major advancement in the field of Mind Mapping. This can be further extended by:

- This model is a static implementation of the system i.e. it will work only if the machine on which the application is installed runs. This can be extended to sending mobile SMS or emails or notifications of the tasks. This will provide a ease of portability because you will be able to check your tasks anytime, anywhere.
- Extend this model to 3-D view of map which will make it extremely convenient.
- Allow accepting audio input or input in the form of English statements for the construction of the map.
- Facilitate searching a node based only on the text of the node i.e. a keyword.
- Facilitate combining two or more mind maps dealing with same aspect automatically.

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