

WINDOW BASED PERSONALIZED TIME MANAGEMENT SYSTEM

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ABSTRACT

The time management system is being widely used to manage time effectively. This paper presents on how window-based personalized time management system will be developed according to user's need. Besides that, this paper will discuss on two (2) types of searching algorithm which are Binary Search Tree (BST) and Hashing Algorithm. The algorithms were tested and the one with better performance in terms of speed was implemented in this project. Through this system, users could manage their time in a simple and effective manner.

ABSTRAK

Sistem pengurusan masa digunakan secara meluas untuk mengurus masa dengan berkesan. Kertas kerja ini membentangkan bagaimana sistem pengurusan masa dibangunkan mengikut keperluan pengguna. Selain itu, kertas ini membincangkan dua (2) jenis algoritma iaitu Binary Search Tree algoritma (BST) dan Hashing algoritma. Algoritma yang mempunyai prestasi yang lebih baik dari segi kelajuan telah diaplikasikan dalam projek ini. Melalui system ini, pengguna dapat menguruskan masa dengan senang dan berkesan.

TABLE OF CONTENTS

CHAPTER	TITLE	PAGE
	SUPERVISOR DECLARATION	ii
	DECLARATION	iii
	DEDICATION	iv
	ACKNOWLEDGEMENT	v
	ABSTRACT	vi
	ABSTRAK	vii
	TABLE OF CONTENT	viii
	LIST OF TABLES	xi
	LIST OF FIGURES	xii
	LIST OF APPENDICES	xiii
1	INTRODUCTION	1
	1.1 Introduction	1
	1.2 Problem Statements	2
	1.3 Objectives	2
	1.4 Scopes	3
	1.5 Thesis Organization	3
2	LITERATURE REVIEW	4
	2.1 Development Tools & Languages	4
	2.2 Studies on Existing Time Management System	5

2.2.1	EFFEXIS Achieve Planner	5
2.2.2	MyLifeOrganized Getting Things Done (GTD) System	10
2.2.3	Efficient Calendar	13
2.2.4	Comparison between EFFEXIS Achieve Planner, MyLifeOrganized Getting Things Done (GTD) System and Efficient Calendar	16
2.3	Searching Algorithm	18
2.3.1	Binary Search Tree	18
2.3.2	Hashing	20
2.4	Summary	21
3	METHODOLOGY	22
3.1	System Development Life Cycle (SDLC)	22
3.2	The Justification Choosing System Development Life Cycle (SDLC)	23
3.3	The Steps of System Development Life Cycle (SDLC)	24
3.3.1	Planning	24
3.3.2	Requirement Analysis	24
	3.3.2.1 Hardware requirement	25
	3.3.2.2 Software requirement	26
3.3.3	Design	26
	3.3.3.1 Features and Functionalities	26
	3.3.3.2 Users	26
	3.3.3.3 Use Case Diagram	26
	3.3.3.4 Flowchart	27
	3.3.3.5 Data Tables	27
	3.3.3.6 Examples of interfaces	29

	3.3.4	Development	32
	3.3.5	Testing	32
	3.3.6	Implementation	32
	3.3.7	Operation and Maintenance	33
4		IMPLEMENTATION	34
	4.1	User Account	34
	4.2	Modules functions	35
	4.3	Searching functions	35
5		RESULTS AND DISCUSSIONS	36
	5.1	Results of the project	36
	5.2	Contributions and discussions	36
	5.3	Future research	37
6		CONCLUSION	38
	6.1	Conclusion	38
		REFERENCES	39
		APPENDICES	42

LIST OF TABLES

TABLE NO.	TITLE	PAGE
2.1	Advantages and Disadvantages of EFFEXIS Achieve Planner	7
2.2	Advantages and Disadvantages of MyLifeOrganized GTD System	10
2.3	Advantages and Disadvantages of Efficient Calendar	14
2.4	Comparison between EFFEXIS Achieve Planner, MyLifeOrganized Getting Things Done (GTD) System and Efficient Calendar	16
2.5	Comparison of advantages between EFFEXIS Achieve Planner, MyLifeOrganized Getting Things Done (GTD) System and Efficient Calendar	17
3.1	Hardware requirement	25
3.2	Software requirement	26
3.3	Data Tables for Assignments, Events and Activities, Entertainments, and Tasks Modules	28
3.4	Data Tables for Diary Modules	29
3.5	Diary Modules	29
3.6	Tasks Modules	30
3.7	Assignments Modules	30
3.8	Entertainments Modules	31
3.9	Activities and Events Modules	31

LIST OF FIGURES

FIGURE NO.	TITLE	PAGE
2.1	Achieve planner overview tab interface	8
2.2	Achieve planner outline tab interface	8
2.3	Achieve planner projects tab interface	9
2.4	Achieve planner tasks tab interface	9
2.5	Achieve planner weekly schedule tab interface	9
2.6	MyLifeOrganized Getting Things Done (GTD) System outline tab interface	11
2.7	MyLifeOrganized Getting Things Done (GTD) System to-do tab interface	11
2.8	MyLifeOrganized Getting Things Done (GTD) System task-project interface	12
2.9	MyLifeOrganized Getting Things Done (GTD) System goals interface	12
2.10	Efficient Calendar interface	15
2.11	Efficient Calendar search interface	15
3.1	Phases in SDLC	23
3.2	Use Case Diagrams for Window Based Personalized Time Management System	27
3.3	Flowchart for Window Based Personalized Time Management System	28

LIST OF APPENDICES

A	User Manual	41
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CHAPTER I

INTRODUCTION

An overview of Window-Based Personalized Time Management System was presented in this chapter. The contents of this chapter consist of background, problem statements, objectives, scopes and thesis organization of this project.

1.1 Introduction

Time management is the process of control over the time spent on specific activities or events to increase productivity and efficiency. A window-based application runs straight from the operating system, so it generally improves the speed at which they run. The use of window-based application is simple and less complex [1]. Therefore, Window Based Personalized Time Management System is designed with the combination of tools, processes, techniques, and methods to provide a simple and better solution for the users.

Window Based Personalized Time Management System provides the modules such as Diary, Tasks, Assignments, Entertainments, and Activities and Events to organize personal time management for different users according to needs. The system was protected with user id and password.

Searching algorithm is an algorithm used for finding an item with specified properties among a collection of items. Two (2) types of searching algorithm were being tested which were Binary Search Tree (BST) and Hashing before implementing the algorithm with better performance in terms of speed into this system. The suitable searching algorithm should be able to provide an optimization to the accuracy information with fastest time. This system eventually is user-friendly, paper-free, cost-saving, and time-saving.

1.2 Problem Statements

Time management always complicated since it involves complicated processes such as arranging the schedule according to the priority and organized the upcoming events. There are four issues exist in this project. The first issue is difficulties. The users are having difficulties in arranging their schedule manually because redundancy can occurs. The next issue is time and paper consuming. The users need more time and more papers to produce an organized schedule. Besides that, the effectiveness of updating and searching is also an issue in this project. The users could not update, cannot search the previous records or check the current work status. Security is one of the issue exist in this project. Diary is important and is consider as privacy of a person. However, it is less secure to write it manually on papers since the contents can easily read by other parties.

The motivation of this project is to develop Window Based Personalized Time Management System because it provides fast, efficient and accuracy to check out workloads especially for a student. Users can add, search, update or retrieve back the previous information. Besides that, this system is environmental friendly since it is paper-free. This system is able to guide the younger generation to practice the time management effectively. Furthermore, the diary feature can provide a better secure environment to the users compare to the paper-based.

1.3 Objectives

The objectives of this project are:

- i. To develop a personalized time management system.
- ii. To implement the most suitable searching algorithm with better performance in terms of speed into the system.
- iii. To provide update regarding the tasks status to the users.

1.4 Scopes

The scopes of this project are:

- (i) Users - Students in Faculty of Computer System and Software Engineering in University Malaysia Pahang (UMP).
- (ii) Tool - Microsoft Visual Basic/ Microsoft Visual Studio 2010.
- (iii) Limitation – Update and display of information can only be display on the single PC or laptop where the system is being installed.

1.5 Thesis Organization

This thesis consists of six (6) chapters and each chapter discusses different issues in the project. Chapter I is the Introduction which briefly describes and provides background information about the project which includes problem statements, objectives and scopes. Chapter II is the Literature Review where the literature and research that related to this project will be reviewed and discussed in this chapter. Chapter III is the Methodology that discusses about the implementation of the system using searching techniques, method and the procedure of this project development. Chapter IV is the Implementation that will explain the implementation of the system. Chapter V is the Results and Discussion. The results and future researches will be discuss in this chapter. Chapter VI is the Conclusion where a complete summary of the project will be presented in this chapter.

CHAPTER II

LITERATURE REVIEW

This chapter discuss about the literature review of Window Based Personalized Time Management System. This chapter is divided into 3 sections and each section discussing different issue in this project. The first issue is the development languages and tools that will be used during the developing of this project. The next issue is the review of existing similar time management system. The last issue will be the techniques used and papers review for this project.

2.1 Development Tools & Languages

In this project development, the language that had been chosen is object-oriented programming. Object-oriented programming is a type of programming languages that define a set of concepts related to interactive incremental program development, includes functions and data, explicit hierarchy of classification, run-time binding of operation names, and interactive browsing. Object-oriented is a programming that uses inheritance. The basic elements of object-oriented programming are objects, methods, and messages. Object-oriented language enables programmers to create modules that do not need to be changed when a new type of objects is create where a programmer can simply create a new object that inherits many of its features from existing objects which make object-oriented programs easier to modify [2,3,4].

The use of window-based application is simple and less complex. Besides that, it is the best interaction between graphical interfaces and user cognition to provide easy illusion to read and edit to the users. Users can interact with multiple sources of information. Window technique allows relatively rapid access to more information while combining of multiple sources of information. It has independent control of multiple programs, reminding feature, command context and also multiple representations [1].

Microsoft Visual Basic is a programming environment used to create graphical user interface (GUI) applications for the Microsoft Windows family of operating systems. Visual Basic applies the use of object oriented software architecture (OOP), event-driven programming language and integrated development environment (IDE). Visual basic allows programmers to create simple GUI applications and develop complex applications. Visual Basic can create ActiveX controls, DLL files and executables (EXE files) even though it was primarily used to develop Windows application and to interface database systems. The language is based on garbage collected using reference counting, has basic object oriented support, and has a large library of utility objects [5, 6].

For Microsoft Visual Basic.Net, it is designed to be more productive in development work. It had the features of visual basic and needs information in database or creates solutions for the Internet. Microsoft Visual Basic.Net share the same development environment with Visual C++.Net. It is actually the enhancement of Visual Basic development system [7].

2.2 Studies on Existing Time Management System

There is similar existing time management systems can be found from the Internet. However, there are only three of the most suitable existing time management system being chosen to be reviewed in this chapter.

2.2.1 EFFEXIS Achieve Planner

Achieve Planner (AP) is a practical Windows time management software that help the users to get organized, focused and manage time. This software contains automatic scheduling based on priorities and computes the expected start/ end date of projects and plans. Besides that, Achieve Planner has two-way sync with Microsoft Outlook. Furthermore, this system enables the users to manage deadlines, meetings and appointments. This software is easily use and for keeping track of all tasks of the users [8, 9].

This Achieve Planner (AP) consists of 5 main tabs which are overview, outline, projects, tasks and weekly schedule. However, the desired tab functionalities can be added by using the task chooser. The overview tab provides users to see the productivity process behind Achieve Planner and provides efficient links to the different parts of the software. For the outline tab,

Achieve Planner uses tree-like outlines which enable users to break down large items into smaller steps using as many levels as needed. Projects tab displays a list of all projects sorted by priority. Tasks tab displays a list of all tasks sorted by priority. For weekly schedule tab, it provides a multi-day calendar view where the users can schedule project blocks, appointments, and all-day events [8, 9].

Next, the concepts used in Achieve Planner (AP) are result area, project, task, priorities, time chart, project block, appointment, all-day event, and task chooser. The result area represents a role in user's life. For the project and task, it is included with action steps associated with a project. Next, the priorities of projects and tasks are determined by ABCD with optional rank (1-2499) in Achieve Planner. These priorities help the users to categorize and focus time based on importance of the works. Time chart allows the users to designate times in weekly schedule for different type of activities. Project block is a time block that the users committed to a specific project. Appointment represents time in user's weekly schedule that allocated for a specific purpose. For all day-event, it is a special type of appointment that occurs on a given date. The task chooser displays the user's top-task across all projects using combination of priority and other factors to sort the items [9].

The advantages of this Achieve Planner (AP) are supporting split tab groups, rearrange the tabs using drag and drop, and maximized state of the current tab group. The terminologies used in Achieve Planner (AP) are grid, parent/ child, and menus. Grid refers to the spreadsheet-like interface used throughout AP to display information using rows and columns. For parent/ child, AP supports tree-like (hierarchical) outline. The main task is called the parent and the sub-tasks are called the children. Menus are extensively used in AP [9].

Table 2.1: Advantages and Disadvantages of EFFEXIS Achieve Planner

EFFEXIS Achieve Planner	
Advantages	Disadvantages
Two-way sync with Microsoft Outlook	A complicated management tool
Implemented searching function and notes	No alerts and reminder available
Supporting split tab groups	Money-charging software
Rearrange the tabs using drag and drop	No security functions implemented
Maximized state of the current tab group	

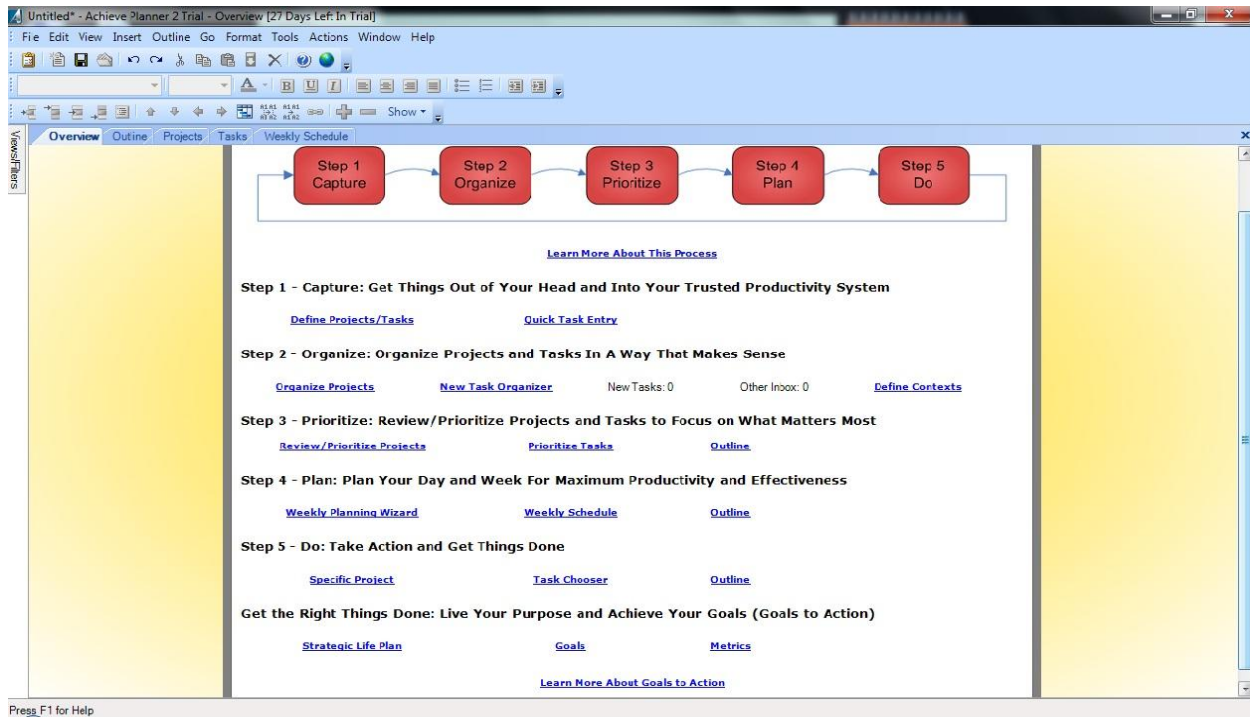


Figure 2.1: Achieve planner overview tab interface

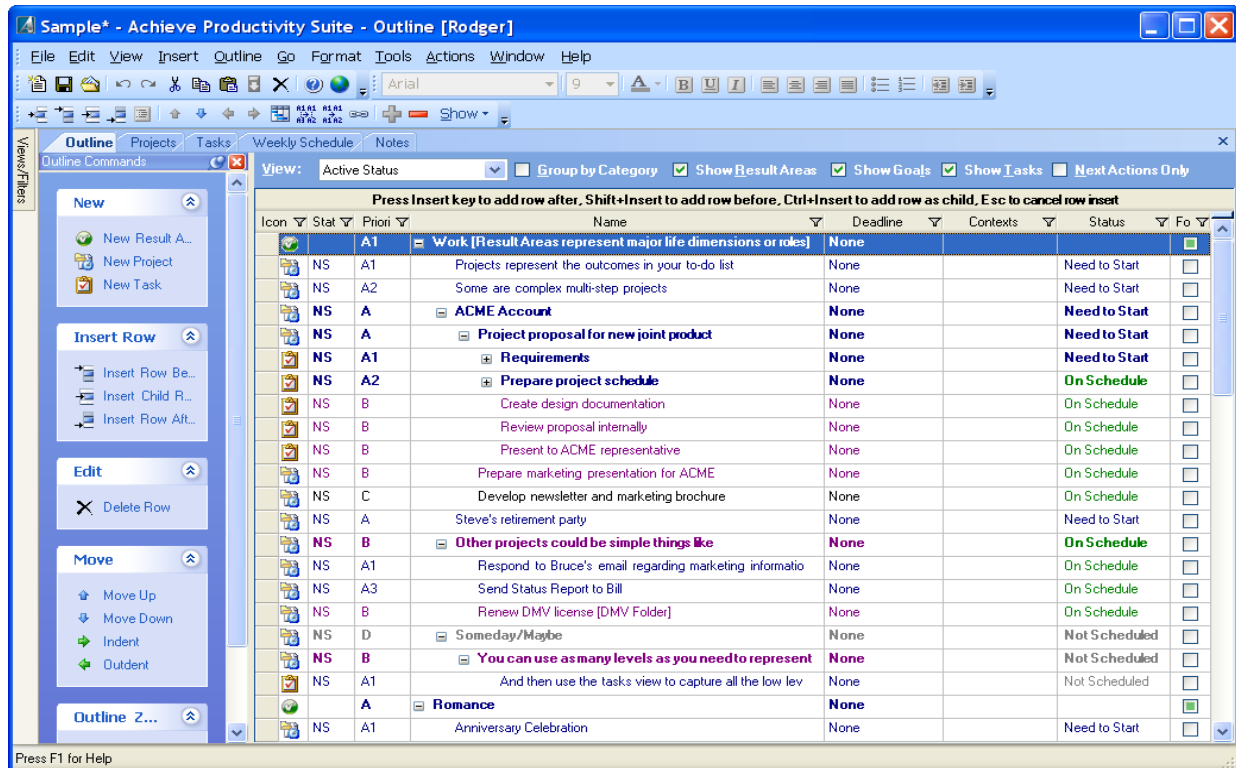


Figure 2.2: Achieve planner outline tab interface

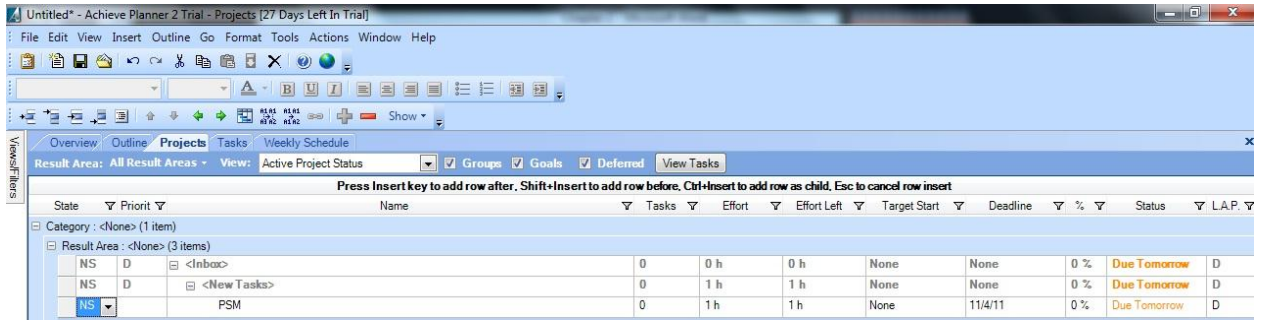


Figure 2.3: Achieve planner projects tab interface

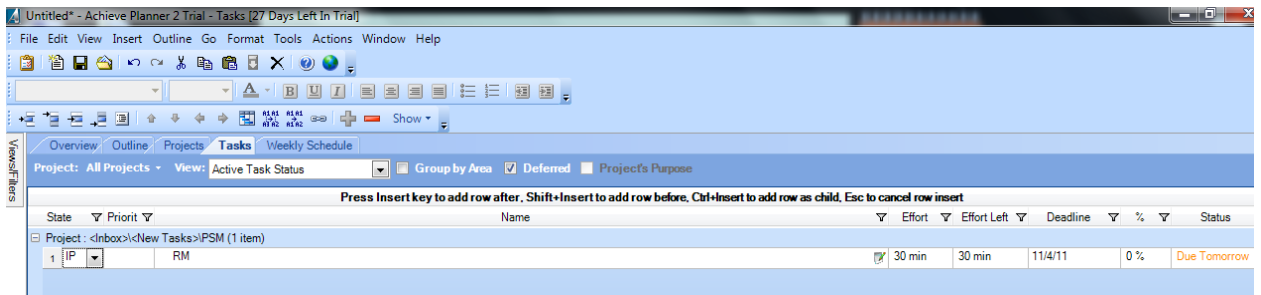


Figure 2.4: Achieve planner tasks tab interface

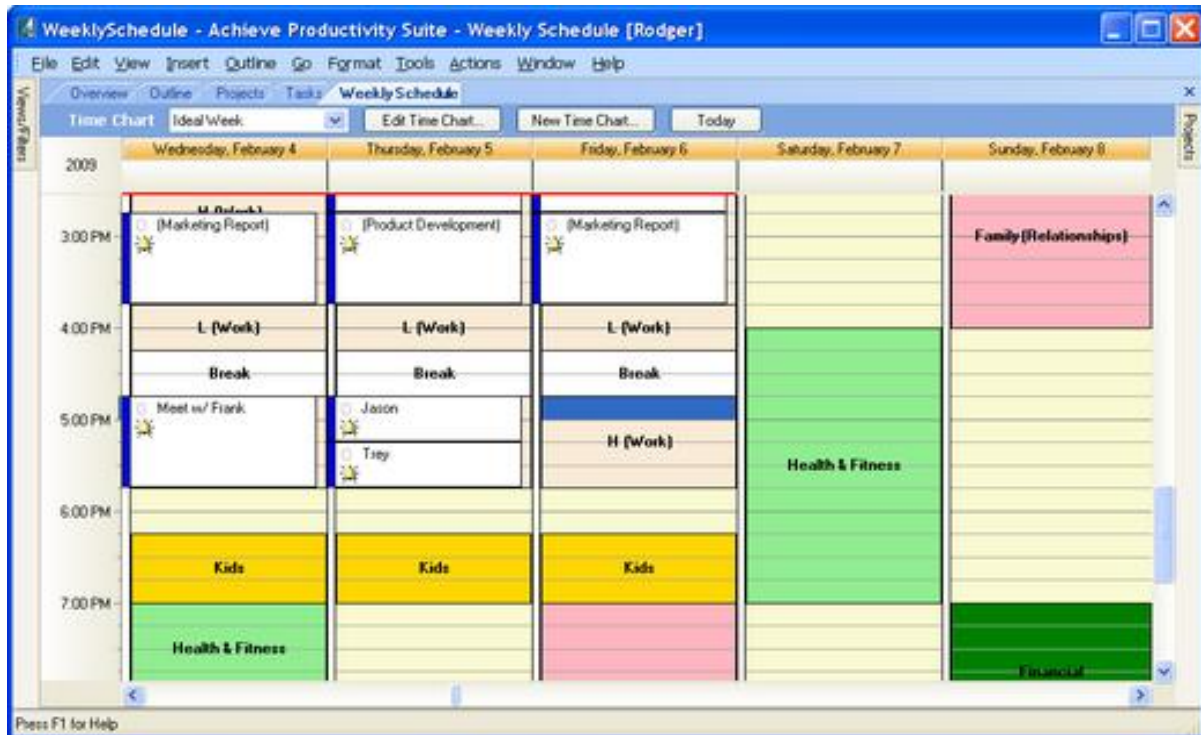


Figure 2.5: Achieve planner weekly schedule tab interface

2.2.2 MyLifeOrganized Getting Things Done (GTD) System

MyLifeOrganized GTD system is fast, lightweight and uses minimum memory. Besides that, this system can generate ordered To-Do list according to hierarchical priority and computer-score priority. This system implements advanced reminders and alerts grouped by tasks statuses and easy to be reviewed. Furthermore, the system can import or export templates while synchronization with MS Outlook, PDAs, and mobile editions of MyLifeOrganized [10].

For the task's properties, it is implemented with general, timing & reminder, project, effort, dependencies, format and task statistics setting with implemented notes for each different task. General setting included the urgency and the type of goal. For the timing and reminder, it can be set to different types of reminders such as windows reminder, email reminder, and desktop alert. In project setting, it is designed with the status and completion. For effort setting, it is implemented with task effort from minimum to maximum. Then, for the dependencies, it needs to complete all tasks listed for current branch to appear on To-Do in Active Actions view. For format and task statistics, users select and implement the types of fonts and statistics desired [10].

Table 2.2: Advantages and Disadvantages of MyLifeOrganized GTD System

MyLifeOrganized Getting Things Done (GTD) System	
Advantages	Disadvantages
Compatibility with Microsoft Outlook and PDAs	Money-charging software
Implemented searching function and notes	No security functions implemented
Alerts and reminders available	A complicated management tool
Fast, Lightweight, minimum memory used	

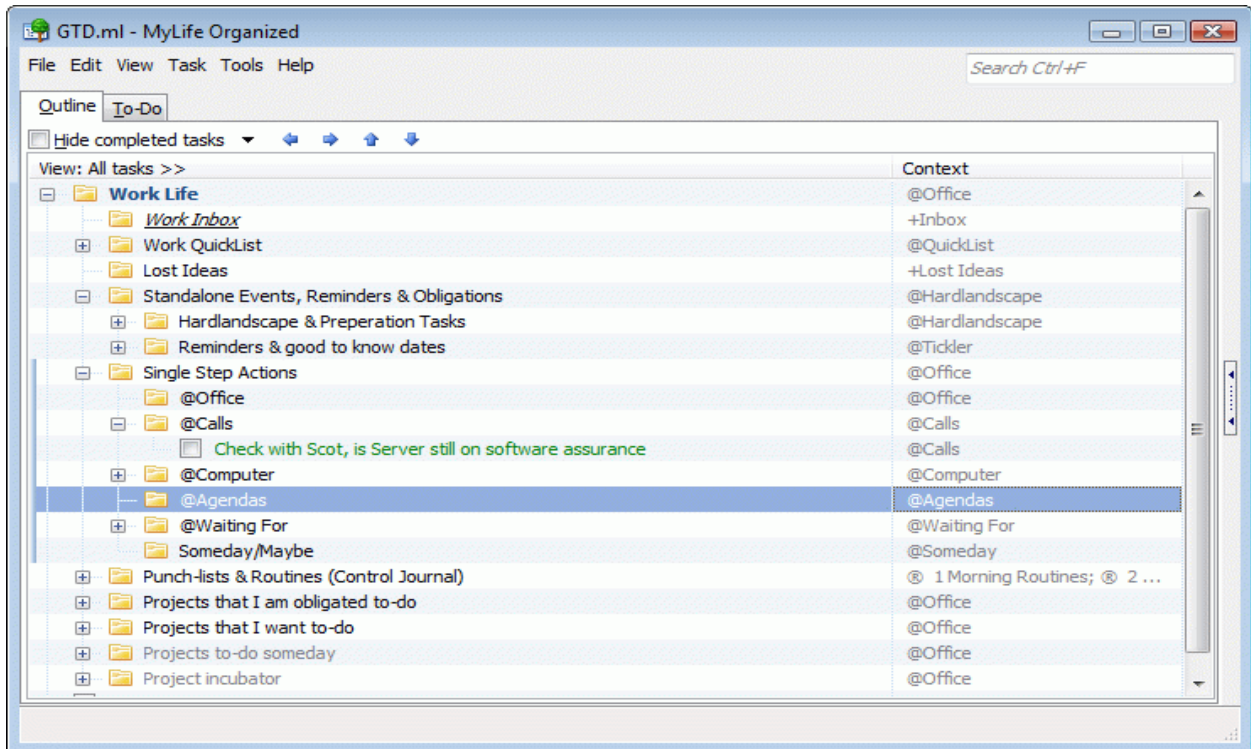


Figure 2.6: MyLifeOrganized Getting Things Done (GTD) System outline tab interface

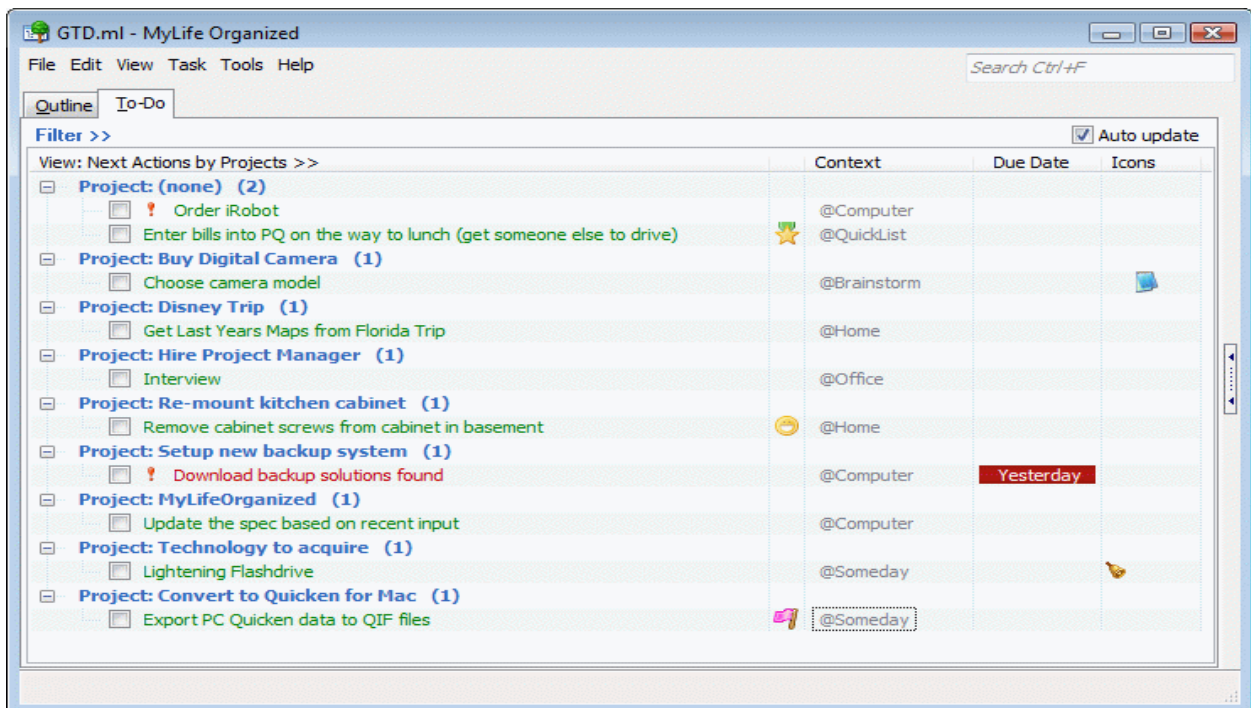


Figure 2.7: MyLifeOrganized Getting Things Done (GTD) System to-do tab interface

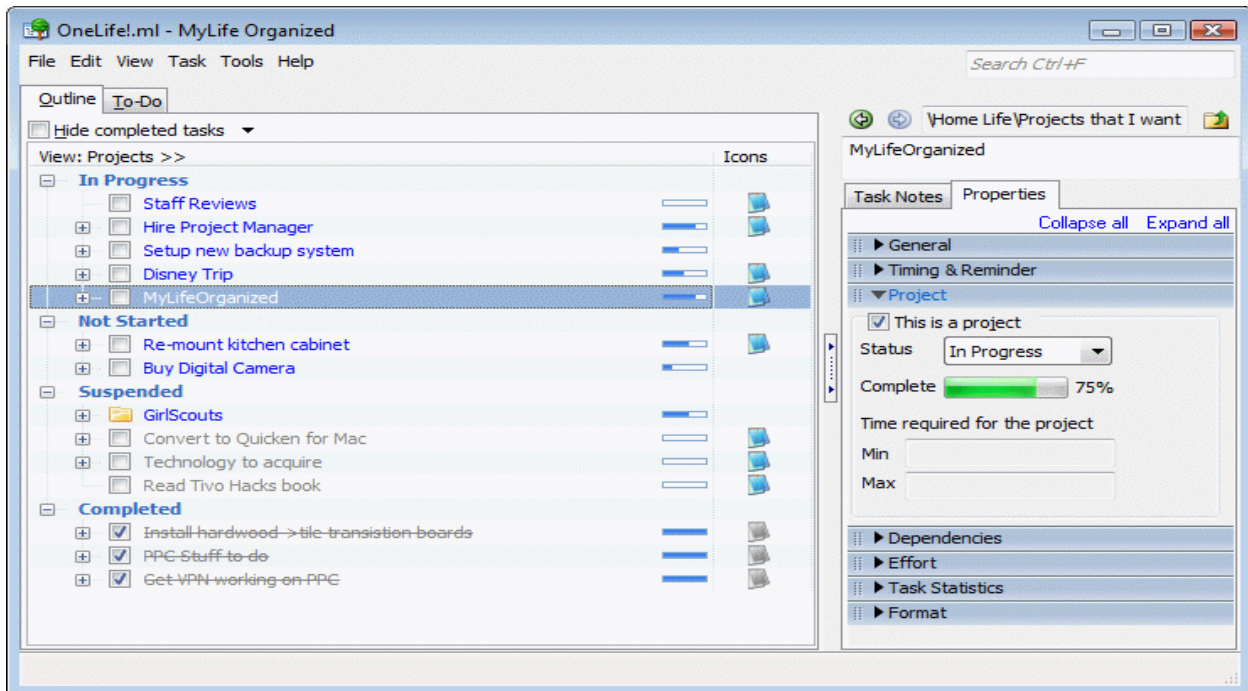


Figure 2.8: MyLifeOrganized Getting Things Done (GTD) System task-project interface

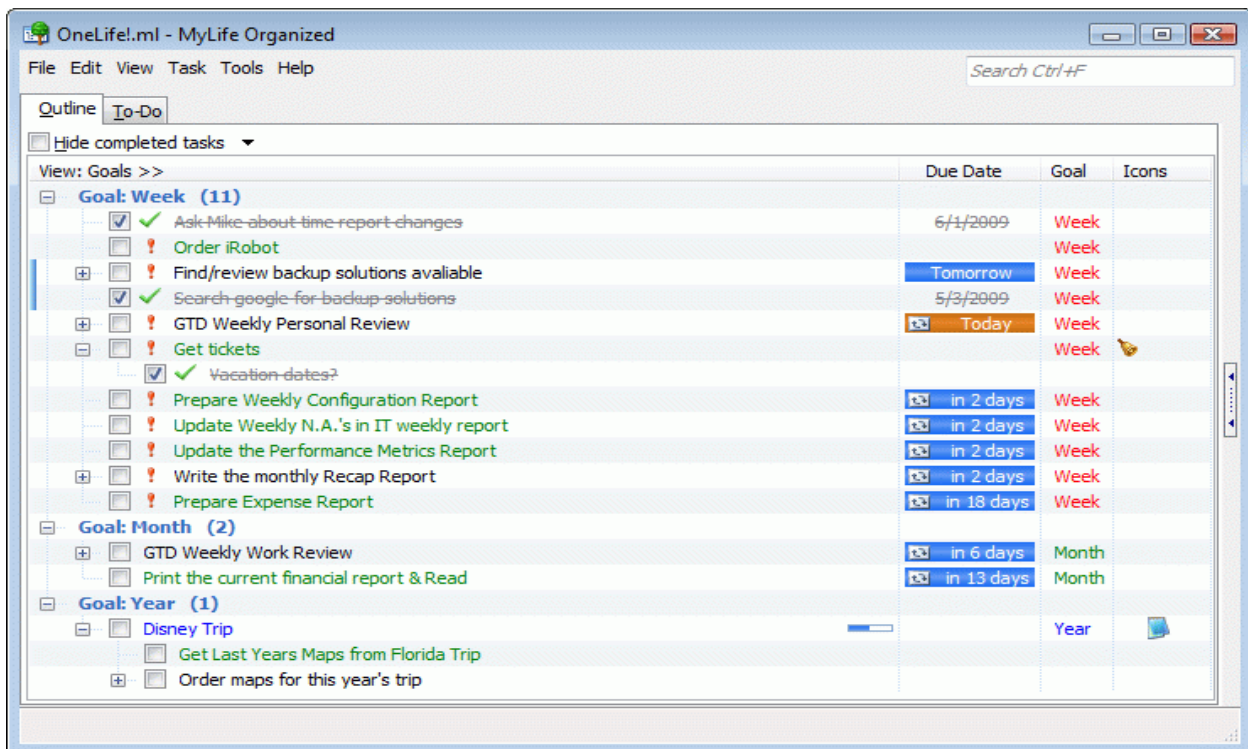


Figure 2.9: MyLifeOrganized Getting Things Done (GTD) System goals interface

2.2.3 Efficient Calendar

Efficient calendar save time by allowing multiple calendar views to be viewed as list view so that the users can arrange and track appointments and events better. The events and tasks can be managed by grouping and differentiate by colours. Besides that, the users can set importance and priorities for events and tasks. All the appointments, events, meeting, tasks can be reminded recurrence as configured. The comments of events and tasks can also be updated easily [11, 12].

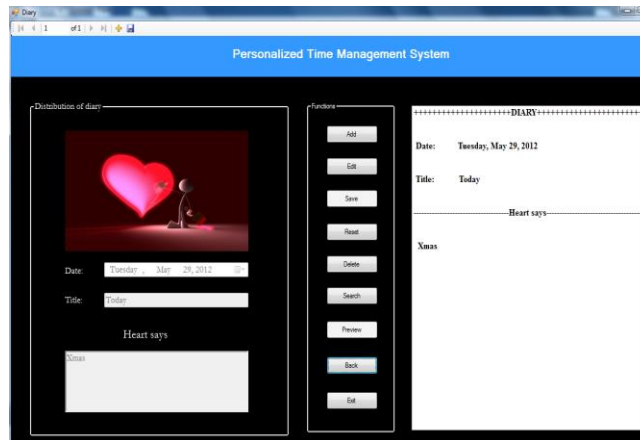
The advantages of this Efficient Calendar are all in one calendar function, multiple interface styles, easy to search, powerful document editor and information safety safeguards. This software is a calendar, planner, reminder, task and time manager and scheduler. Different interfaces are designed to meet different individual's needs. It is also implemented with various tones of colour. Then, it is easy to search information. Furthermore, Efficient Calendar has embedded a document editor that enables the users to write comments for events and tasks. There is a recycle bin in this software with backup and restore function available to save and migrate data [11, 12].

Efficient calendar is implemented with alarms and reminders. It can snooze for certain time period and repeat the same tasks reminder. The search function is fast and efficient. Furthermore, it is designed to show the tasks and events on the same interface so that users can easily manage their time well [12, 13].

Table 2.3: Advantages and Disadvantages of Efficient Calendar

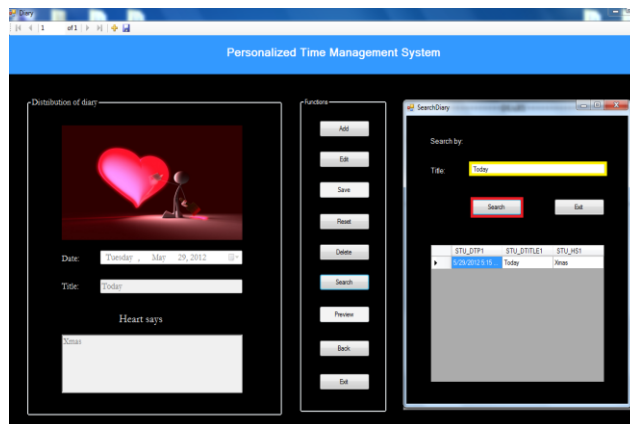
Efficient Calendar	
Advantages	Disadvantages
Free software with limited functions	No sorting functions implemented
Alerts and reminders available	A complicated management tool
Information safety safeguards	
Backup and restore function available	
Implemented searching function and notes	
Fast, Lightweight, minimum memory used	

ii.



- ii. Click on the add button to add a new record to your system.
(Example shown is diary module)
- iii. The titles are **UNIQUE** in each modules to prevent redundancy.
- iv. Key in every information needed and click on “Save” when done.
Click on “Preview” button to display the record.

iii.



- v. Click on the previous/ next icon for checking records or you can click on the “Search” button to find your information. Type in the related search information and click on search button when done.
- vi. Click on “Edit” button if you wish to update your information.
Click on “Update” when done.
- vii. Simply click on “Delete” button if you wish to delete a record.
- viii. Click on “Exit” button if you wish to exit the application.