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# Introduction

The purpose of this document is to provide a detailed report on the system prototype I have designed for a “Task Manager System”. Everyone has goals, events, achievements, or Tasks they need to complete every day but somehow, they fail to complete these goals because they either get distracted, are forgetful, or suffer from poor planning. The purpose of the system is to help its users complete these goals effectively by having a virtual assistant to help users organize their everyday activities; including work, school, events, deadlines, and free time. The system achieves these by utilizing a hierarchy to organize tasks the users will want to complete and present them in a meaningful and memorable manner for them to plan out their day and achieve these goals. The system will also make use of reminders and notifications to remind users of approaching deadlines. This system can be used by anyone with basic computer knowledge but will be most beneficial to students and working individuals.

This documentation will also include information about the system, and heuristic usability methods and will then lead to a summary of the system’s most prevalent issues from the heuristic evaluation.

User requirements:

1. Users can register their account
2. Users can login to their account
3. Users can access profile information
4. Users can see daily tasks
5. Users can manage daily tasks
6. Users can see past and future tasks on a calendar
7. Users can see important events/schedules
8. Easy to use/understand

# Prototype Functionality

The list of features the prototype will have will be directly connected to the user requirements mentioned in the introduction.

## Settings and Prof

The system will make an effort to focus on the “task management” features but will also have some versatility to give users customization options and accessibility to the system’s settings to change its presentation and design enough to improve user performance or the likeability of the system. The systems setting page will have options to change the systems font size, text color, background color, or overall color theme of the system within the appearance tab. The profile tab will show basic information about the user such as email, username, and password; the tab will also offer a change to the user’s profile picture and password. This is a static feature in the system that supports the testing of the accessibility and usability functions. It is a key requirement that users will use to make customization changes to the system.

## Login and Registration

A simi-functioning login and registration page for the user to access their customized tasks, event manager, and personalized settings. This function is not fully complete as it does not check the user credentials and will only check if the username and password fields are filled in before allowing them access. This will provide and visual example of how the login and registration pages will look and respond once fully functional but do not check for specific users. Once this feature is fully implemented after the landing(index.html) page a login page with the option to create an account is presented. Once the correct login information is entered the user will be taken to their personalized task manager. This is a horizontal approach to presenting this feature in the prototype to help developers and stakeholders, end-users and clients test how easy it is for the users to gain access to the system and create accounts. This is very important because users leave a site within the first 15 seconds upon entering it. Having this feature shown statically will allow the developers to receive feedback from end-users on its visual design and how convenient it is for new users.

## Task Manager

The task manager will be fully developed to give a full grasp of its capabilities to the user as that specific webpage is being accessed. This will have multiple smaller features implemented to make up for the bigger feature of managing tasks for its users. One of these tasks is adding a task name, starting time, optional ending time, and date. These tasks will then be shown to the user in the task window in the home tab; this will be presented clearly and be easy to understand in the order they were added to the list. Within this task window, the user is given the option of editing the information of this task’s name, starting time, ending time, and date. Finally, the user can then complete the task by marking it off/deleting it once it has been completed a task should be presented to the user as completed with a strike through and dimed text color. This is one of the most important features in the system and needed to be completed to present the end-users with a good grasp of many features necessary to create a fully working task manager. Knowing this feature is still faced with many bugs and issues that can be noticed once tested to its extreme such as overloading the number of tasks on the list and switching between web pages.

## Event/Important tasks

Important tasks will be placed above all tasks on the main page because these will be the first thing the user should see. They will be easy to reach small windows with a customized picture and once the user selects one of these windowed tasks they will be taken to an expanded customized webpage that has thee extended information about that event/important task. The feature is important to allow the user to enter important information for tasks that will last much longer than one day. It gives users versatility and customization with starting a bigger project or scheduling something they do frequently in their task manager which is something most if not all users will make use of. These extended windows will be static and only hold information prepopulated by the developer however it will be presented in its finished form to allow clients and end-users to test and review their possible functionality in the system. This is important because the required features needed a hierarchy system for the tasks being managed in the system even if not fully implemented.

## Navigation

Navigation within the system will be presented on every and all web pages of the system. Starting from the landing(index.html) page we enter the site with the “Begin Design” button which takes us to the login page with its “Login” button and then the home page with its navigation bar and the top right of the page. The home page has a navigation bar with the option to travel to multiple web pages, these pages are home, calendar, settings, and logout. The calendar.html and settings.html pages will also have the same navigation bar layout at the top right corner of the screen. Users need a clear and easy way to navigate through the application as requested in the user requirements. I believe this navigation bar allows this and will be available for full use by end-users.

## Calendar

The calendar page will be fully static and have no functioning part except for the navigation bar. The window will have a virtual calendar of one month showing all the task names on their respective dates. In the windows of the days, the tasks will either be written normally to show that they are incomplete or have a strikethrough if the task was completed. This will give the user a view of all the tasks that month they have yet to do and show them all their completed tasks. This will help full fill the calendar requirement in the user requirements to give the users a virtual calendar by which they can prepare their schedules better for the future. There will be no dynamic interactions on this page but gives clients and end-users a visual representation of what a functional calendar would look like in the middle of a user’s monthly scheduling.

# Background Technologies

For developing this website application, I used Visual Studio Code to assist with writing all the HTML, CSS, and JS. While using VS Code I made use of some external sources to help with my development.

## Calendar

The calendar CSS was collected from the website [colorlib.com](https://colorlib.com/wp/template/calendar-20/) demonstrating how a static calendar can be implemented into a webpage. The CSS code makes use of multiple divs and lists to present all of the days within the month to the user. Each day will have space to place all the tasks that the user is going to complete in the future or past tasks for that month. This CSS just offers a clear presentation of task names and when they occur to the user.

## Navigation bar / Landing Page

For the navigation bar and landing page, I made use of some CSS from a simple [Easy Tutorials](https://youtu.be/PgAZ8KzfhO8) YouTube video explaining the use of animations for buttons and the navigation bar. The video gives a minimalistic design to the navigation bar and a simple animation transition whenever the user’s mouse cursor hovers over the navigation buttons or any navigation text. It also gives the CSS for the application’s background image.

## Saving local data YouTube

This YouTube video [[max programming](https://youtu.be/U693xrQKFy4)] explains the saving of local data on the website. These JS codes helped me manage my task manager information allowing me to save the Name, times, and dates.

# Annotated screenshots

## Index page

White title on a dark background making a high contrast for easy reading



Logo of task manager to show the user is still using the application

Background wallpaper is dimmed so that the user can focus on text and buttons

Begin button with transparent background to keep the minimalistic design and rounded border for visual appeal

The index page is the first page the user will be met with when loading the task manager its purpose is a landing page to welcome the user to the application. The only function here is a button to navigate to the next page. The page achieves all its functionality for the prototype and has a minimalistic design to help navigate users to the next page fulfilling the requirement of “easy to use”. The choice of big text with high contrast colors and minimal information is a design choice seen throughout the task manager giving users freedom and not overloading the page to slow them down when making a decision.

## Login page

Clear header at the top to show the page the user is on. Information of the page purpose below for the user

Chart, bar chart

Description automatically generated

Login button will take user to the next page if the information in each field is filled in

Input boxes standout with white background placeholder text to tell the user what to input

Link to take users to the register page to allow user to create an account if they do not have one already

Graphical user interface, website

Description automatically generatedIf a field is left blank a warning message will appear instructing the user to complete it. Once the field is filled in it will allow the user to move onto the home page.

The login page is made to be self-explanatory to the user. Made simple and require minimal effort from them to enter the page. Having the login page be easy to complete will allow more users to move onto the task manager more frequently because they are not hindered by other pages before they even reach the main function which is the task manager itself. The Login for this page does not check the information against any databases of the sort nor does it check if details of the information itself. The only check performed on this page for login is if the username and password fields are filled in. Once they have entered both a username and password the user will be granted access to the home page of the website. The register page can be accessed at any time without the fields being entered if the click the “create account” link at the bottom. The page once fully implemented will check the user information against a database of registered users and only grant them access once both the username and password have been entered correctly.

## Register page

Graphical user interface, application

Description automatically generated

Clear header at the top to show the page the user is on. Information of the page purpose below for the user

Register button to create the account and take user to the login page once all fields are filled in

Terms and privacy link to take the user to a page explaining what their information will be used for on this site

Input boxes standout with white background placeholder text to tell the user what to input

Sign in link to take the user to the signup page if they have an account already, easy accessibility for the user

Graphical user interface, text, application

Description automatically generatedIf a field is left blank a warning message will appear instructing the user to complete it. Once the field is filled in it will allow the user to move onto the login page.

The register page has similar goals to the login page we do not want the user to spend a lot of time here. So it is made minimalistic but informal to the task they need to do. Easy to read but decorated and left very bland. The functions are the same as the login, the “register” button this time takes the user to the login page instead of the home page, however. And the only check performed is making sure no fields are left blank. When the full functionality of this page has been implemented there would be further checks to ensure the correct number of characters are entered for the password. The email is entered in the correct format and the password and then repeat password fields are the same before the account can be added to an external database. The page serves its function of presenting to the client and end-users how the registration page can be easily completed by any user because of its minimalistic design and informative guidance while completing the form. Allowing the users to go back to the sign-in page through the “sign-in” link gives users freedom if they happen to navigate to this page by accident or remember their login information.

## Home page

Logo – shows the user this webpage in part of the application

A screenshot of a video game

Description automatically generated

Navigation bar - takes the user to their desired location when text clicked

Events – important user event they want to keep track and make notes of, click to open the webpage

Today’s tasks – begin adding tasks you would like to complete

The home page is the host of the main functionality of the system. Here it will allow users to create their daily tasks and assign times to them. They can also add tasks at a later date if they so choose. These tasks are meant to be viewed here and checked off once they have been completed by the user to see their progress. This page also gives access to “events” where users can add important activities they would like to create notes on or also keep track of their progress as well. Some of these events have been added statically to the page to show some examples of this.

Graphical user interface, application

Description automatically generatedWhen using this page to add a task users must fill in the Name, Start Time, and date fields. Once done pressing “add task” will add a window with the task information below. Users can check off tasks once they have completed them with the finished checkbox. The text boxes also have a broken feature currently were once checked will not strike out the text, however only once hovered over will it show the text with a line going through it. This is not as intended and should strike through when the checkbox is checked.

A screenshot of a computer

Description automatically generated with medium confidence

The user hovers over the “start-time”, “end time”, or “date” text they will be shown help text explaining how to enter that information.

A screenshot of a computer screen

Description automatically generated with medium confidence

The navigation bar at the top will take the user to their desired location when the text is pressed. These texts have animation on them when the mouse hovers over the text a line will appear under the text. This is to give the task manager a more visual appeal considering that a log of this webpage is made up of a lot of borderless and transparent background when inputting and viewing text having this adds appeal without distracting the user too much.

When using the home page clients can add and complete tasks, navigate to events windows, and access all other webpages of the task manager from this page. This is done without cluttering the page or drawing away attention from the main task manager of the system. This reaches the requirements of accessibility, the added and viewing of tasks, and viewing events.

## Calendar page

Graphical user interface

Description automatically generated

Navbar – navigate to selected webpage

Forward and back button – go forward a month or back a month on the calendar

Clickable events – gives pop-ups of task information

The calendar page is meant to show all the past and future tasks the user has added to the task management system. Allowing them to better schedule their time and manage their tasks over longer periods. They can switch between months on the calendar with the arrow buttons and select the current day by choosing the “today” button. Each day will show a static task. These tasks are not related to the tasks from the home page. They have to be manually entered to demonstrate what a used calendar would look like if a user was to add tasks and show what the calendar would then look like.

A screenshot of a computer

Description automatically generated with medium confidenceWhen a task is selected a prompt message will appear with the further task information like the start and end times as well as the date.

When fully developed this calendar will show off all tasks added from the home menu and store them here for users to see what they’ve completed and what they are going to complete. The prompt message will be improved and customized to a specified window where the text and buttons will be of the same style as the rest of the website. Clients and end-users will be a grass the intensions of the calendar with its static information, however, the overall presentation of this pages tasks is poor just barely showing info of the task however it completed showing a working calendar just fine which is a user requirement. The Calendar has a transparent look to keep its view minimalistic.

## Settings page

A screenshot of a computer

Description automatically generated with medium confidence

Scrollable window – allows to scrolling of a smaller window instead of the main page

The settings page is fully static but it has value in the information it presents. It is only able to scroll through the smaller window however the information shown is kept to the user requirements and the same style as the rest of the system. Here once a further feature is implemented the user would be able to see their personal information and has the control to change it as they see fit while following some restrictions to account information such as email and password.

Graphical user interface

Description automatically generatedThe profile pictures but take a photo from the computer’s library to allow more personalization in the system. The overall appearance of the system can be chosen with a theme like ‘light’ or ‘dark’. To make the system more accessible to other users having options to change the default language and more.

Check box – click to select an item as true or false

Having the ability to access and change the profile setting in of your account in the task manager complete the user requirement that they are given access to personal information and extends to personalization and accessibility.

Drop down menu – showing further options for t he user to choose

## A screenshot of a computer Description automatically generated with medium confidenceEvents page

A screenshot of a computer

Description automatically generated with medium confidenceA screenshot of a computer

Description automatically generated with medium confidenceThe event pages are where users will add frequently occurring events that they wish to make notes of or schedule specifically. Here is what the add new event page would look like and a user would customize the title, image, and notes of this window. However, that currently is not implemented and shows static pages of the event creation page and examples of the event page if a user were to add one. Similar to the task the events would be saved and the information will be loaded into the webpage by the computer each time an event is accessed. This will make them more accessible to users as they do not need to create the web page themselves as the system does that for them automatically. The only thing the user must do is fill in the text information, upload the text, and change the title.

Right now these webpages follow the systems design style with transparent background, high contrast text, and minimalistic presentation. Clients’ requirements are met by being able to view important tasks. They also keep the accessibility high with the navigation bar never being too far away. The text layout is clear and spacious with not much clutter.

# Heuristic Evaluation and Usability Testing Results

## End-user evaluation form results

The information provided for this heuristic evaluation is going to make use of the following 10 Nielsen’s Usability Heuristics listed below.

A picture containing chart

Description automatically generated

Chart, bar chart

Description automatically generated

Chart, bar chart

Description automatically generated

Chart, bar chart

Description automatically generated

Chart, bar chart

Description automatically generated

Chart, bar chart

Description automatically generated

Chart, bar chart

Description automatically generated

Chart, bar chart

Description automatically generated

### Heuristic Table

1. Visibility of system status
2. The match between the system and the real world
3. User control and freedom
4. Consistency and standards
5. Error prevention
6. Recognition vs recall
7. Flexibility and efficiency of use
8. Aesthetic and minimalist design
9. Ability to identify and recover from errors
10. Help and documentation

### Severity Ranking table

1. I do not agree that this is a usability problem at all.
2. Cosmetic problem only. Need not be fixed unless extra time is available on the project
3. Minor usability problem. Fixing this should be given low priority
4. Major usability problem. Important to fix so should be given high priority
5. Usability catastrophes. Imperative to fix this before the product can be released.

## Visibility of system status

The severity ranking of this heuristic is 0. The system’s status is made clear throughout the entire system at all times. Each webpage has a simple title describing the contents of the current webpage. It is positioned at the top of the page allowing users to easily see where they are. When on the login and register pages the layout is changed because the navigation bar is not shown but the title will still be at the top of the page.

When the user is creating a new task on the home page and have yet to fill in all of the necessary fields; when they press the “add new button” the user will be notified of which fields are still needed to be filled in with an error message.

## Match between system and the real world

The severity ranking for this heuristic is 2. The task manager is meant to mimic the actions of an everyday helper; who is meant to give you reminders of when tasks need to be completed and assist you in managing your time effectively to complete those tasks. I believe the system can mimic this behavior to an extent however I think to fully achieve this desired effect some features need to be improved upon. When tasks are completed and marked as finished, allowing them to be marked off with strikethrough text would allow users to visually identify them as completed easier. Having some kind of notification or popup appear when your task is about to begin will allow users to interact with the application more frequently as they are being assisted for every task they think they will need help managing or remembering during their busy days. Another feature to help the task manager be more realistic is allowing the editing of tasks. Users right now to change a task will have to delete the previous one and create a new one with the changes they would like. Most of these changes are small but allowing for more visual and accessible features would make the task manager more realistic as if having a real assistant by your side.

## User control and freedom

The severity ranking for this heuristic is 0. Throughout the entire system, the user has control over where and what they can go. This is not saying my website has no restrictions on user freedom because it does prevent users from entering the site if no fields are input into the login or register fields but even then the user is never trapped on a single webpage because they started to create a task or that webpage function is preventing them from moving about in any way. Users are free to stop and start functions on the site as they please without breaking or causing issues later. Reviews show that its usability allows quick navigation through the pages and completing or viewing tasks was always a click or two away.

## Consistency and standards

The severity ranking for this heuristic is 2. The website as a whole tries to keep a consistent design as the background is the same on almost all the webpages while you are logged into the website with dimed background wallpaper and if not for the login and register pages it has a green and white background. These can be off-putting but help users easily recognize the state of the website at that moment. The text and buttons all have a very similar minimalistic design with white text, a transparent background, and no borders. This is also seen inside the tasks on the home page. Despite the review showing highly for the website consistency, I must point out that when the calendars task is selected and the information prompt appears it is different and not set to the same theme as the rest of the site. It shows more information that is needed so it is not minimalistic. The extra webpage location is unnecessary information being shown to the users and does not follow the minimalistic style.

## Error prevention

The severity ranking of this heuristic is 4. When testing entering any type of input information there is a check to confirm the field filled in before the user can submit it. However, this is the only check on the website. Users are free to enter numbers and special characters only for task names and enter tasks at a past date. If this is not checked how useful will the task manager system become to the user at this point? They would be able to see the tasks they added if this was a mistake. The website is not optimized for working on every kind of screen out there and many users have noticed when working on a small screen eg: laptops or a larger screen eg: or wide-screen monitors the entire application does not seem to fit comfortably. There is no code to prevent this from happening. What completely breaks the aesthetics of the website is when objects are overflowing off the user’s screen or are too small to be operated comfortably. This does not break the system literally however it hinders its purpose of being easy to use, navigate and monitor by users using different sized screens than normal which overall decreases the accessibility of the system as a whole which is why this issue is important to fix despite it just being operational on a normal screen.

## Recognition vs recall

The severity ranking for this heuristic is 0. The system makes use of features used on any computer and does not try to make them different in any way. When login in and registering account users could easily recognize the fields and how to enter information into them correctly. When entering information into the task manager it follows a similar format for text input but also offers a selection input for the times and dates which is recognized when using a calendar. Users using the navigation function in the navigation bar were able to recognize its layout because it was always placed the same way no matter which page they went to in the system.

## Flexibility and efficiency of use

The severity ranking of this heuristic is 2. Throughout using the system user have been given the freedom to move and control the navigation to a great standard. However, something very interesting when the reviews were shared on the efficiency was that when completing a task this was labeled an easy to complete but most found the system complicated if even by a little. The system as it stands had the events and tasks all shown on the main page. The purpose of the events was to stand as import schedules users would visit frequently and have easy access to. However, most users did not agree with this design decision and found it not completely pointless but out of place to be seen above the daily tasks, they are trying to complete.

## Aesthetic and minimalist design

The severity ranking of this Heuristic is 1. Feedback from the reviews agreed that the design was considered main minimalist and aesthetic. However, as reviewed in certain areas such as the calendar where the prompt was not customized in the same theme as the rest of the website some areas can still be improved upon the ensure it is 100% minimalist.

## Ability to identify and recover from errors

The severity ranking of this heuristic is 4. When the issue was discussed is error prevention when the screen size is too big or small compared to the default developers’ screen. No error prevention was put in place for this and no error recovery attempts are placed to try to stop this specific error. Something pointed out by users was that if a task was entered at a past date how useful would it be to the user. If a task we input incorrectly like this how would you recover? The answer is they wouldn’t be able to; unless the user themselves notices that the task date is incorrect.

## Help and documentation

The severity ranking for this heuristic is 2. There is present documentation when the users are entering inputs for field placeholders to help them input the correct information. When the completing add a new task there are help pop-ups under the input labels that give examples of the correct format when inputting the time and date. There is not enough pop-up giving example. There are more areas where data is being input like login and register which do not make use of pop-up help messages but placeholders instead. When creating an event guidance may be needed to make sure users enter meaningful data because the placeholders may not be enough. There is no help or contact page. Users are may have issues that require developer assistance if there is no way to contact them then is no way to help.

# Feedback and Discussion

Taking in all the information gathered from the reports and reviews given by a specialist in computer science I have received a wide range of valuable information.

### Good

Feedback was highly favorable toward the design and feel of the web pages. Users would find the website visually pleasing with the choice of background, text, and theme. This made users want to use the website more often. These have made it clear my choice of theme was beneficial to the user experience and I intend to improve upon this for older pages and when implementing new pages.

### Bad

Lack of validation and error prevention when inputting data into the task manager. Users would be able to input pure numbers for a task and the system would allow this. They could also enter garbage dates for dates that never existed. Uses find it pointless and a waste of time if the information added is of no use to the user. I intend to add more validation to the inputs to this information is not made useless.

# Conclusion

I created from this course work a working web application that has functions to help users complete tasks on regular and a extended period. The application has reached the goals of most of the user requirements and is a solid foundation to build upon.

Knowing what I have produced here it was full of positives and negatives it still has a long way to go before it can be a fully completed web application. To get us to the starting stage of a fully completed web application we will need to start integrating online storage databases for the data we want to hold on our users. We need to store user registration information and user task lists online first. This is so that when a user changes their device, they will still be able to access and continue their task manager from where they left off. Better error prevention when inputting data and push notifications when a task is about to begin. Adding these features will allow our system to be more interactive thus making it a more effective assistant.