AI – ENHANCED TILING WINDOW MANAGER FOR LINUX SYSTEMS

A PROJECT REPORT

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BONAFIDE CERTIFICATE

Certified that this project report **"AI – ENHANCED TILING WINDOW MANAGER FOR LINUX SYSTEMS"** is the bonafide work of **"SELVA VISWANATH S (211519205146), ROHITH VS (211519205128), SANTHOSH S (211519205143)"** that carried out the project work under my supervision.

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INTERNAL EXAMINER **EXTERNAL EXAMINER**

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ABSTRACT

The conventional approach to managing windows in a tiling window manager on X11 – window graphical server requires the user to manually allocate each window to a specific workspace. However, this can become tedious and time-consuming, especially when dealing with a large number of windows. To address this issue, a novel approach to dynamically allocate and manage windows using machine learning techniques is presented in this paper.

The proposed system employs a Decision Tree Classifier model to predict the optimal workspace for a given window based on its characteristics, such as its size and name. To train the model, a dataset of window attributes and workspace allocations was utilized, and various classification algorithms were employed. The trained model was then integrated with a custom-built tiling window manager using Python scripts, which enables real-time allocation of windows to workspaces based on the model's predictions.
One of the main advantages of this system is its ability to adapt to changes in the user's working environment. For instance, if a new window is opened, the model can quickly allocate it to the most appropriate workspace without the need for user intervention. Furthermore, the model's accuracy improves over time as it learns from the user's behavior, thus providing a more personalized workspace management experience.

To evaluate the accuracy of the system, a test dataset was used, and the results indicated high accuracy in workspace allocation. This approach has the potential to increase users' efficiency and productivity by automatically organizing their workspaces based on the contents of their windows, freeing up their time to focus on more important tasks. Overall, this research represents a significant step forward in the field of window management, and the proposed approach could have widespread applications in various domains, such as software development, data analysis, and graphic design.

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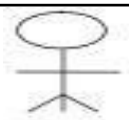
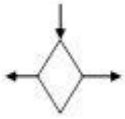
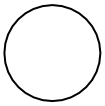
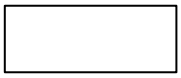
LIST OF FIGURES

LIST OF SYMBOLS

S.NO	NAME	NOTATION	DESCRIPTION
1.	Actor		It aggregates several classes into single classes
2.	Communication		Communication between various usecases.
3.	State		State of the process.
4.	Initial State		Initial state of the object
5.	Final state		Final state of the object
6.	Control flow		Represents various control flow between the states.
7.	Decision box		Represents decision making process from a constraint
8.	Node		Represents physical modules which are a collection of components.
9.	Data Process/State		A circle in DFD represents a state or process which has been triggered due to some event or action.

10.	External entity		Represents external entities such as keyboard, sensors, etc.
11.	Transition		Represents communication that occurs between processes.
12.	Object Lifeline		Represents the vertical dimensions that the object communications.
13.	Message		Represents the message exchanged.