OS COURSE PROJECT
LINUX TASK MANAGER

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Problem Statement:
It often happens that the user forgets to close the app and it ends up draining unnecessary battery, consuming more RAM, and the processors are used unnecessarily.
In such cases, the user wants to check for the resources, the processes are consuming and to end some unresponsive process. To eliminate these types of problems, the user requires an interface to terminate applications and processes, and add some mischievous process to blocklist as needed for best performance.

Expectations:
To cater the problem statement, we decided to make an application which would help the user analyze the resources, and provide a list of processes with the resources each of them is consuming. To prevent the processes from consuming resources unnecessarily, we planned to incorporate endtask and add to blocklist buttons, which would control the processes that will run and thus save the resources.

Our Approach:
We first learned to use psutil library and made a resource monitor on terminal.
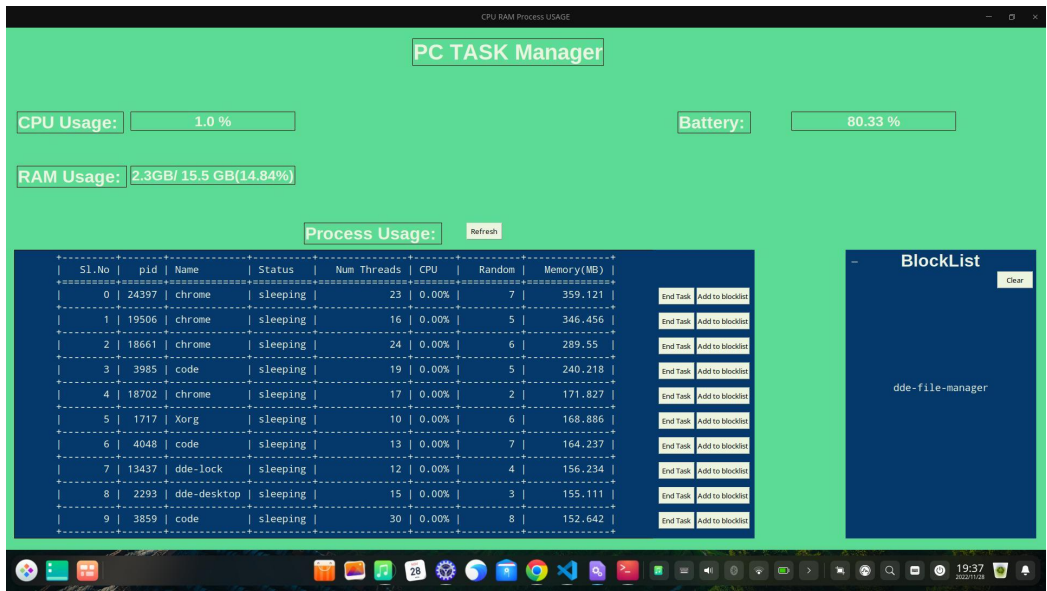
Now we used tkinter library of python to make the GUI
And implemented the same resource monitor on the GUI we made.
We then added features of end task and add to blocklist.

Outcome of our project:
We have been able to build a task manager which lists the resources used, processes list along with resources they are using individually, and the user can kill the process from our application by one click.
The user can also add a process to the blocklist, which will prevent that process to start again anytime in future unless it is cleared from the blocklist.

This is how the application looks in its final form.

Bugs in our application:
We encountered many bugs while making the application and we were able to remove most of them but one bug that is still present is that, if a user adds and removes processes in the blocklist very frequently, the display of the application crashes sometimes(happened around 10-15% of the times we checked). The buttons END TASK and ADD TO BLOCKLIST work perfectly but the lists fail to update.
To fix it,simply rerun the code and it will work perfectly.

Future ADDONS:
We plan to add graphs and charts to visualize the resources that will make the application more appealing to the users.
We hope to implement the feature of adding buttons to open frequently-used applications.

Key learnings:
We learned to use psutil to extract process information and use tkinter to make GUI applications.
We learned to play around with pids in order to find the necessary information of the processes and to compare them with each other and to execute functions like END TASK and ADD TO BLOCKLIST.