Python Project Proposal

System Status Display Application

01286121 Computer Programming

Software Engineering Program

By

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Project Description (one or two pages)

System Status Display Application

The "System Status Display" project aims to create a versatile desktop application that provides users with real-time graphical information about the performance and status of various system components in their computer. This application will be built using Python and the Tkinter GUI library for the user interface, and it will utilize the psutil library to collect and display system data.

Key Features

• **Overall System Overview**: A dashboard that provides an overall snapshot of the system's health and resource usage.

•**CPU Usage Monitor**: A real-time graph displaying CPU usage as a percentage, along with the current CPU usage percentage.

•**Memory Usage Monitor**: A real-time graph illustrating memory (RAM) usage as a percentage, including details about total, used, and available memory.

•**Network Activity Monitor**: A real-time graph showing network activity in terms of bytes sent and received, allowing users to monitor network usage.

•**Process Viewer**: A section displaying the number of running processes on the system, providing insights into resource-hungry applications.

•**Disk Usage Monitor**: A real-time graph representing disk usage as a percentage for each available disk partition, along with tabulated data providing detailed information about each disk.

•**Temperature Monitor**: A module to display system temperature information, especially useful for systems with temperature-sensitive components.

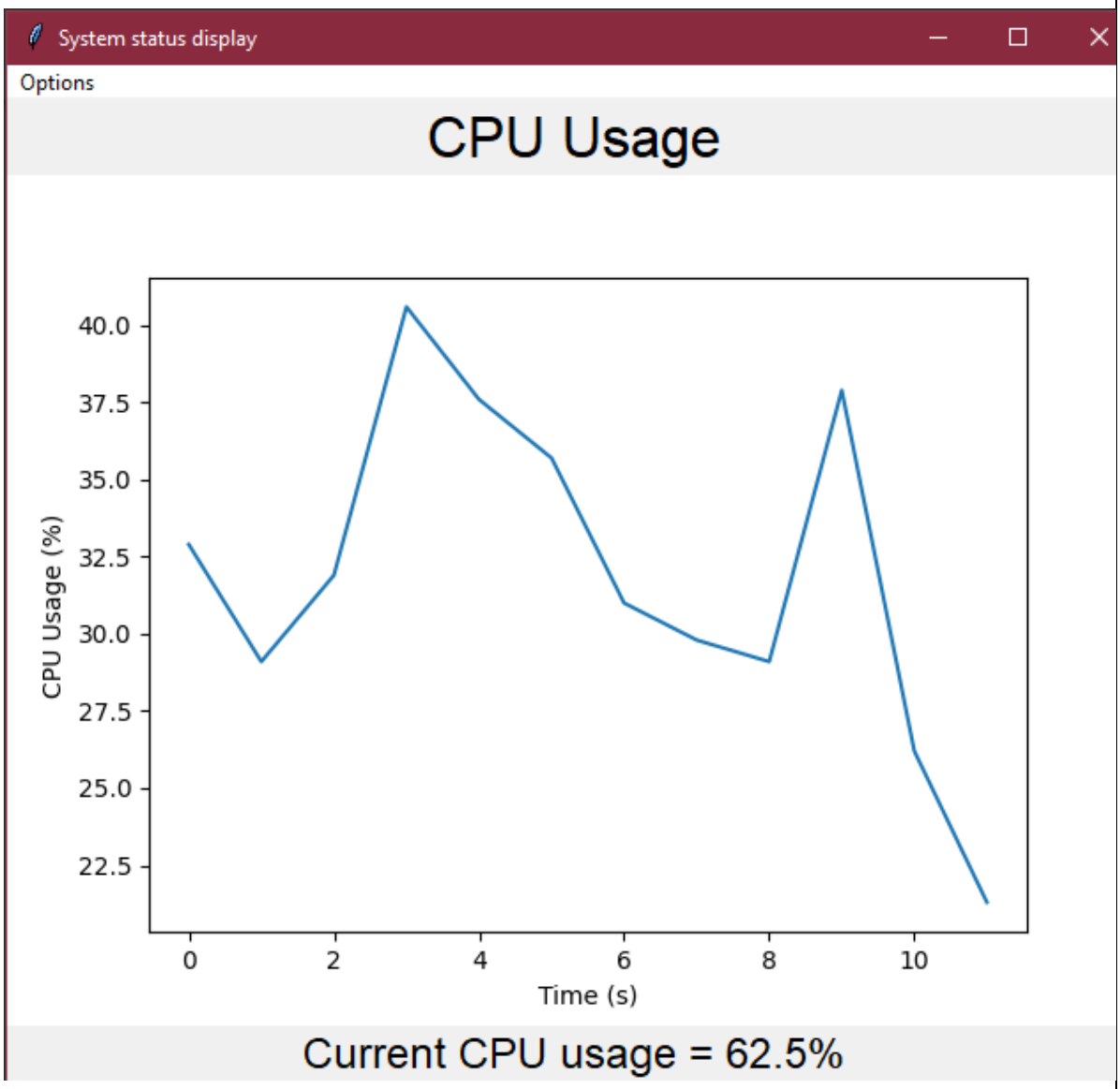
• **Battery Monitor**: A section that provides battery status and charge level for laptops.

Idea for improvement

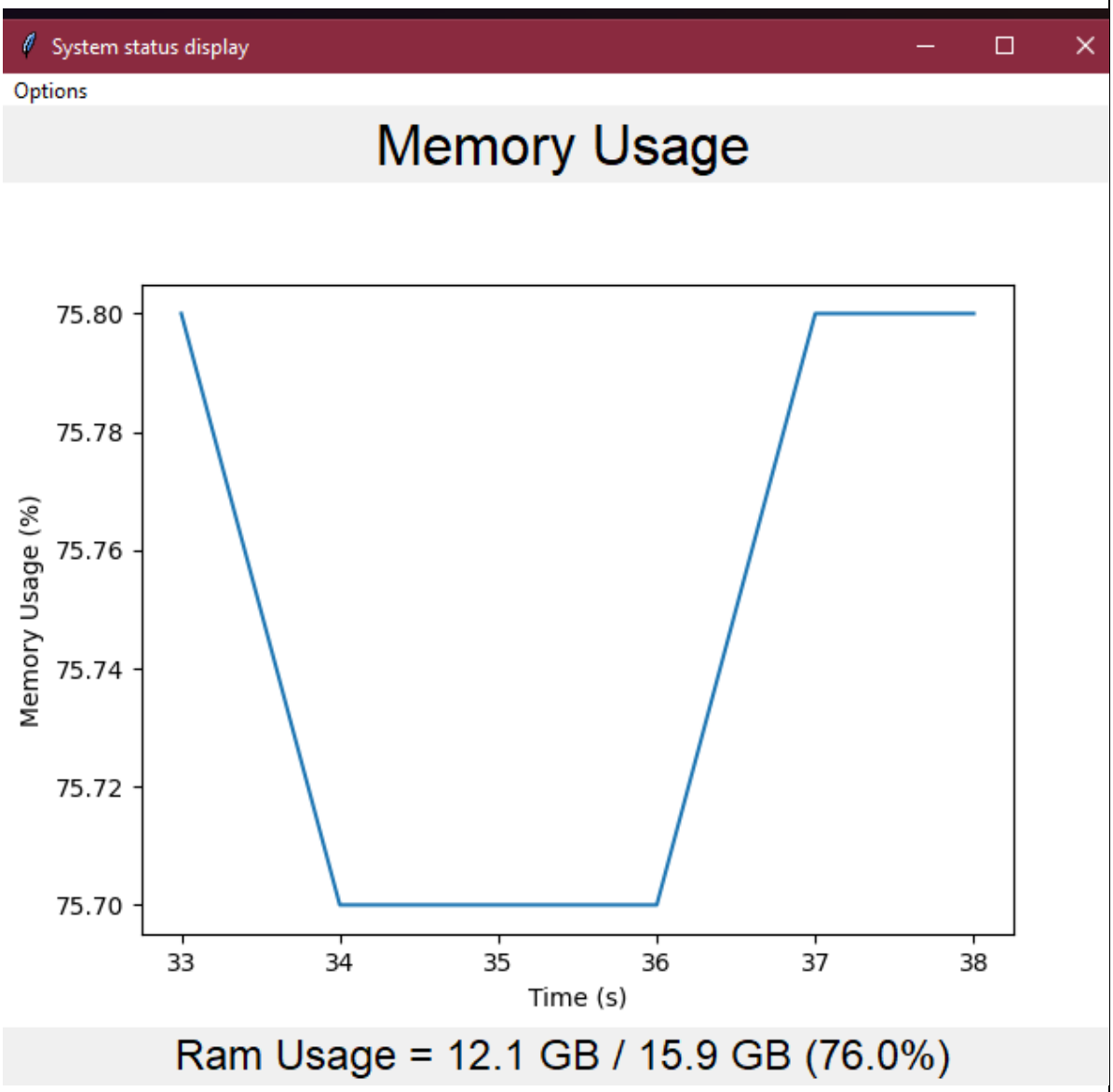
- Alerts and Notifications: Send alerts via email or desktop notifications for threshold breaches.
- Customizable Dashboards: Let users customize their dashboard layout and visual themes.
- User Profiles and Preferences: Allow users to save dashboard settings and setting of alerts percentages.
- Real-time Data Analysis: Implement machine learning for predicting system metrics or detecting abnormalities. (Require future knowledge)

Draft of a GUI Design of your (provisional) Program (at least three screens)

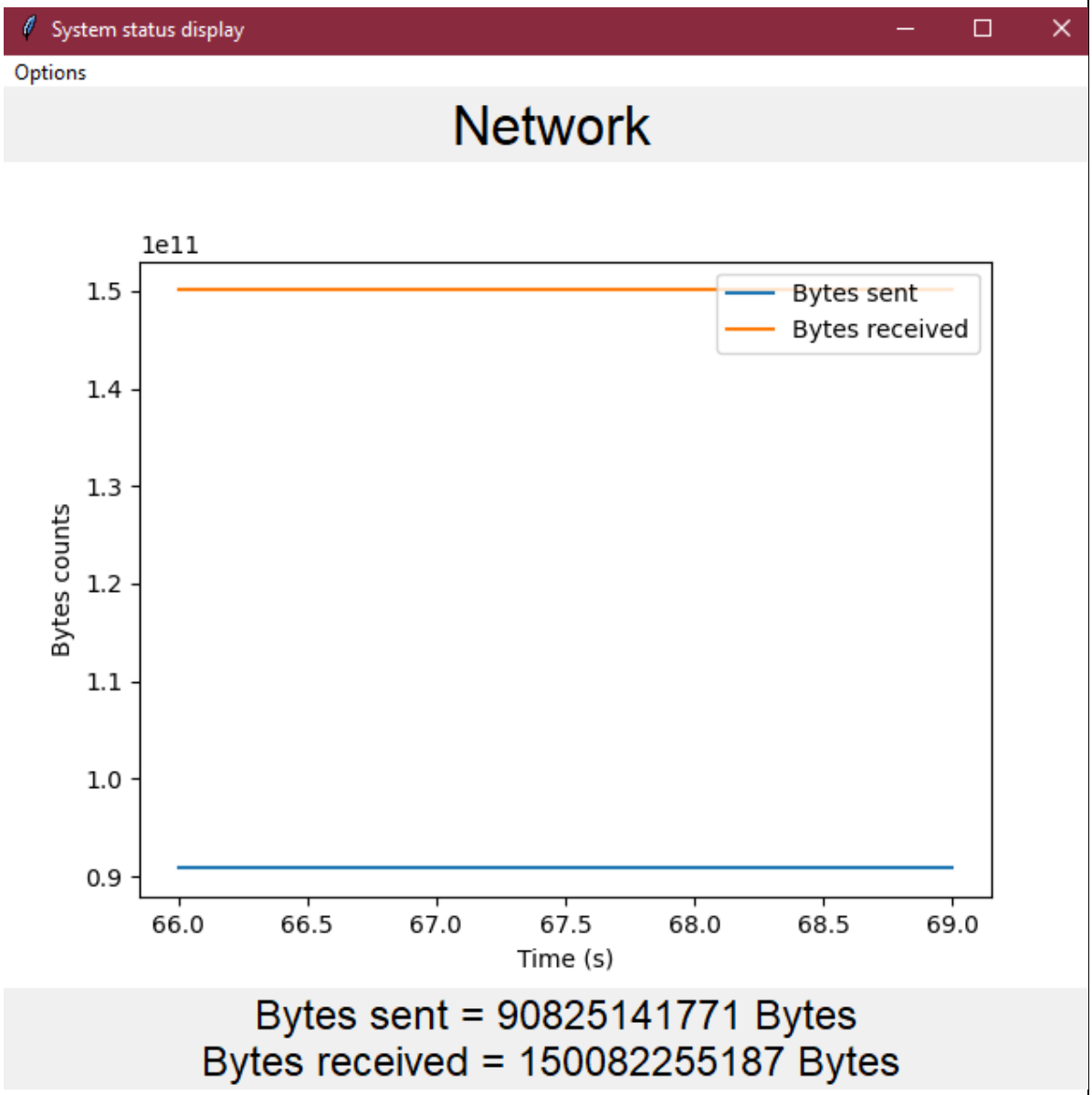
Screen1



Screen2


System status display
Options
Memory Usage
75.80
75.78
75.76
75.74
75.72
75.70
Memory Usage (%)
33
34
35
36
37
38
Time (s)
Ram Usage = 12.1 GB / 15.9 GB (76.0%)

Screen 3


System status display
Options
Network
1e11
1.5
1.4
1.3
1.2
1.1
1.0
0.9
Bytes counts
Bytes sent
Bytes received
66.0
66.5
67.0
67.5
68.0
68.5
69.0
Time (s)
Bytes sent = 90825141771 Bytes
Bytes received = 150082255187 Bytes