

Project Plan: System Resource Dashboard

OVERVIEW

Objective:

The objective of this project is to develop a real time system usage monitoring dashboard that monitors the CPU, RAM and Disk usage along with the processes that are running with the ability to terminate that process.

Scope:

- Monitor CPU, RAM and Disk usage
- List out the running process with CPU consumption
- Implement process termination feature
- Package it as a system level application

DEVELOPMENT ENVIRONMENT

COMPONENT	TECHNOLOGY USED
Programming Language	C++
GUI framework	QT5
Build	Qmake
System interaction	Linux /proc/ and /sys/

DEVELOPMENT PLAN

1. Environment setup and dependencies

- a. Install QT, g++ and qmake
- b. Verify the installations and versions
- c. Setup the projects

2. System monitoring features

- a. CPU usage: /proc/stat
- b. RAM usage: /sys/sysinfo
- c. Disk usage: statvfs
- d. Process listing: Read from /proc/ to get the active process

3. UI Development

- a. Design the progress bars for RAM, CPU and Disk usage
- b. Display a table with running process in the CPU
- c. Add buttons to terminate the running process

4. Testing and Debugging

- a. Verify the data from the system files
- b. Ensure the operation of UI dynamically
- c. Test process termination (system stability should not be affected)

5. Deployment

- a. Create a .desktop file
- b. Install the binary in /usr/local/bin
- c. Add the icon in /usr/local/share/icons

TIMELINE

TASKS	TIMELINE
Setup and dependencies	1 day
CPU and RAM monitoring	1 day
Disk usage	1 day
Process list	1 day
Killing the process	1 day
UI development	3 days
Testing and debugging	2 days
Deployment	1 day
Total time	~12 days

RISKS AND MITIGATIONS

Potential Risk	Mitigation
QT dependency issues	Install the proper dependencies
High CPU usage due to frequent updates	Optimize update intervals
Incorrect resource monitoring	Validate calculations using htop

Data not refreshing properly	Implement real time refresh intervals
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EXPECTED OUTCOME

- Fully functions system resource dashboard
- Lightweight and responsive application
- System-level integration