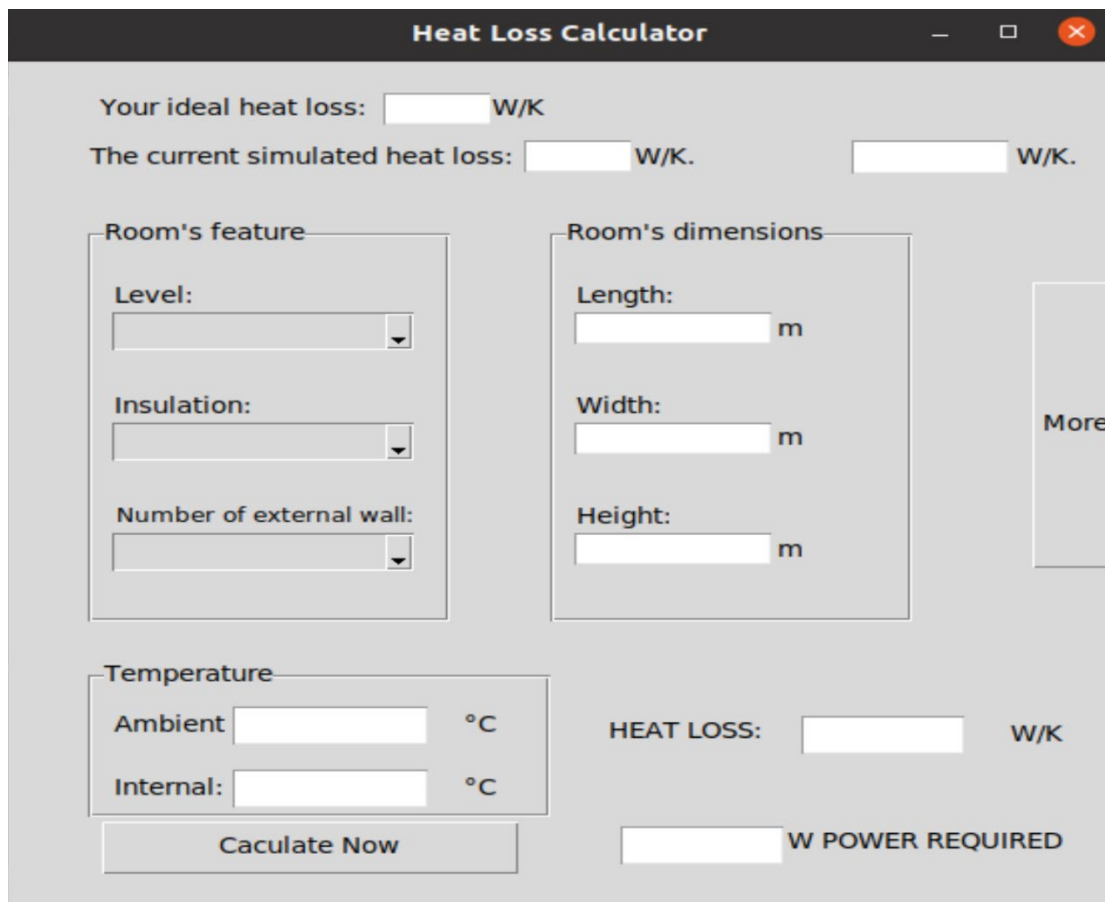


Product requirement document (PRD)

The software used for the coursework is python. In the process of programming, using Python's own GUI library, tkinter. The application is designed for simple electric heating loss calculations. Heat loss can be easily calculated by input of room's feature, dimensions, temperature and building materials, etc. The different functions of the room, such as height and number of external walls, also affect heat dissipation. All of these factors that affect the heat dissipation of the room are taken into account. This Software can be used to estimate the difference between ideal heat loss and heat loss. Engineers use the software to calculate heat loss and it helps reduce energy consumption to protect the environment. The software can run on Linux system.

There are more mature similar software on the market, such as Maxwell - Calculator . Maxwell - Calculator is a graphical user interface (GUI) based heat loss and heat gain calculation tool within the building. It helps users choose HVAC equipment suitable for their climate. (<http://maxwell.googlecode.com/files/Maxwell1.3.exe>)



The screenshot shows a graphical user interface titled "Heat Loss Calculator". The interface is organized into several sections:

- Top Section:** Contains two input fields for heat loss in W/K. The first is labeled "Your ideal heat loss:" and the second is labeled "The current simulated heat loss:". There is also a third input field to the right of the second one.
- Room's feature Section:** A vertical box containing three dropdown menus labeled "Level:", "Insulation:", and "Number of external wall:".
- Room's dimensions Section:** A vertical box containing three input fields labeled "Length:", "Width:", and "Height:", each followed by a unit "m".
- Temperature Section:** A box containing two input fields labeled "Ambient" and "Internal:", each followed by a unit "°C".
- Buttons and Results:** A "Calculate Now" button is located below the temperature section. To the right of the "Calculate Now" button, there are two more input fields: one labeled "HEAT LOSS:" and another labeled "W POWER REQUIRED".
- More Button:** A "More" button is located to the right of the "Room's dimensions" section.

Running software