

Software and Systems Design Commentary

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Smart Home Device Name: Smart Thermostat

Question	Response (25 words max per entry)
Describe your smart home device and convince me to buy it!	Detect if you are at home to save energy, learn your habit to optimize temperature. Teach it once, then enjoy your automated home time.
Requirements Diagram	
Give an example of a non-functional requirement you specified and its type.	The non-functional requirement named after Appearance is a space requirement, it claims the exact space needed on the wall to install the device.
How did conducting a requirements adequacy assessment change your design?	After requirements assessment, I decided to add a wifi module to enable online data access which would make the Automatisation part smarter than original design.
Block Diagram	
How did you use bottom-up and top-down design methodologies?	I used top-down to separate all block into three aggregation layers, System, Hardware/software, Parts and bottom-up to analysis generalisation of Parts layer.
Give an example where you used a shared association relationship rather than a part relationship association (or vice-versa).	Household Temperature Control Devices block is not a fully sub part because only compatible devices will be used in the smart thermostat system.
Activity Diagram	
Name another SysML behaviour diagram that you think would enhance your design and justify why.	Smart device have complex processing system. A calculation processing activity diagram for the microprocessor decision making activity can make the whole procedure more clear.
Give an example of the use of a merge node in your diagram and justify why you did not use a Join node (or vice-versa)	Temperature datas from different activities combine and transport because merge node offers tokens on its output flow as soon as it receives it.
Python Code	
Does your code perform its intended function, and what limitations are there?	The demo performs correct action when user change parameters in the state machine. The limitation is the data should be manually tuned by testers.

Please complete your responses and save this as a PDF for upload.

this should be 1 page max