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# Project

**Report on Configuration  
DefaultConfig**

# PACKAGES

## Default

### GLOBALS:

### ACTORS:

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#### Air Conditioning

*This device is controlled by the thermostat, and is used to cool the house. It also has electronic controls that allow the thermostat to start or stop it.*

Relations:

**itsCool the house**

Association with Cool the house, Multiplicity of 1, Bi-directional

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#### Furnace

*This actor represent the furnace as well as the electronic controls to the furnace. This is what the thermostat talks to when the temperature of the house needs to be increased.*

Relations:

**itsHeat the house**

Association with Heat the house, Multiplicity of 1, Bi-directional

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#### Homeowner and or Resident

*This actor is the person the Thermostat system is designed to serve. They will be interacting with the system on many levels, including:*

- 1.) Setting up the system
- 2.) Maintaining it.
- 3.) Operating it manually

Relations:

**itsCheck Temperature**

Association with Check Temperature, Multiplicity of 1, Bi-directional

**itsCheck Time**

Association with Check Time, Multiplicity of 1, Bi-directional

**itsManual Mode**

Association with Manual Mode, Multiplicity of 1, Bi-directional

**itsTemperature Control Automation**

Association with Temperature Control Automation, Multiplicity of 1, Bi-directional

**itsEnviornmental Enhancements**

Association with Enviornmental Enhancements, Multiplicity of 1, Bi-directional

### USE CASES:

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#### Check Temperature

*This case will display the current temperature on the display for the user. This is also an important case, because it can help the user in a variety of situations:*

- 1.) To figure out what temperature "feels right"
- 2.) Prove to the user the automatic controls are keeping the house at the desired temperature.
- 3.) And to monitor the progress of the thermostat as it changes the temperature of the house - maybe as the house heats up.

4.) To show the user the current temperature, so they can enter the Manual mode if the current temperature doesn't meet their needs.

Relations:

**itsHomeowner and or Resident**

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### **Check Time**

This case occurs when the user wants to see the current time in the display window on the Thermostat.

This can also be a very useful feature to the user because:

1.) If the user comes home or wakes up at a certain time, they can look at the thermostat in order to answer the question "by what time do you want the house at this temperature." This is very important when it comes to the environmental feature.

2.) Also serves as another useful time telling device around the house. People today are always in a rush, so it's important to have clocks around so they aren't late.

Relations:

**itsHomeowner and or Resident**

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### **Cool the house**

This case will talk to and control the air conditioning for the house. The thermostat will use this during either Manual Mode or during the use of automated controls.

Relations:

**itsAir Conditioning**

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### **Environmental Enhancements**

The main benefit of this feature is that it will take the settings created by the user in the "Temperature Automation Control" case and attempt to modify them in order to improve energy efficiency. This is of a great benefit to the user because it can **potential** reduce monthly energy bills.

This case will only allow the user to enable or disable Smart Environmental Enhancements.

Relations:

**itsHomeowner and or Resident**

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### **Heat the house**

This case will talk to the furnace telling it to turn on or off, as well as adjust controls of the furnace such as speed.

Relations:

**itsFurnace**

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### **Manual Mode**

This feature will enable the user to operate the thermostat in a manual mode. This is a very useful feature because:

1.) If the weather is unseasonable during a short period, the thermostat might not perform to the users needs.

2.) Other special cases such as the user waking up before the pre-scheduled morning warm-up time.

Relations:

**itsHomeowner and or Resident**

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### **Temperature Control Automation**

This allows the user to control the automated seasonal settings. The thermostat consists of 4 controllable seasons.

1.) Spring

2.) Summer

3.) Fall

4.) Winter

Each of these can control the temperature of the house during certain time blocks in the day, with the day split into 8 hour blocks. During each block the user can tell the system to:

1.) Maintain a specific temperature

2.) Set a minimum allowable temperature

3.) Set a maximum allowable temperature

*You can also set a specific start time to heat or cool the house to a temperature (this can be useful in the morning block if you want the heat to turn on at 6:00 because you wake up at 6:30).*

Relations:

**itsHomeowner and or Resident**

# USE CASE DIAGRAMS

## Thermostat

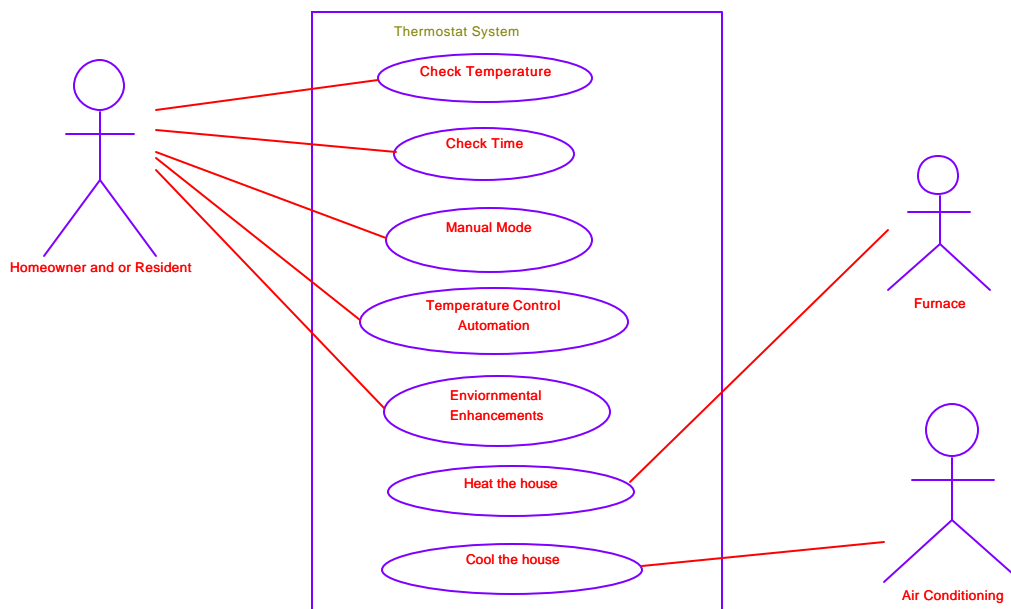
*This use case represents the capability of the Thermostat. This includes 3 actors, and 7 specific use cases.*

*Responsibilities: The thermostat is responsible for controlling the heating and air conditioning of a house, and maintaining its internal climate.*

*Actors:*

- 1.) Homeowner and/or resident - represents the main user of this system.*
- 2.) Furnace - This represents the furnace that's used to heat the house.*
- 3.) A/C - The external system that is used to cool the house.*

*This use case essentially provides a visual picture of the "black box" functionality of the thermostat system.*



VERY well done.  
Go for it.

**APPROVED**