Smart Home with AI (Arduino Integration)

Functionalities:

* A CCTV camera mounted on top of a servo motor will be sweeping the area in front of the house entrance by default. If the house owner desires, he can also toggle a manual mode where he controls the camera’s movement using a joystick.
* Numerous functionalities of the house can be triggered and controlled using a single IR remote.
* A home-wide security mode is also available which can be switched on and off using the remote based on the requirement of the owner
* An infrared motion sensor is installed in the garage. If it detects any kind of movement while the security mode is enabled, it sounds an alarm in the home, displays a ‘X’ on the 8X8 matrix display to alert the owner about the intrusion.
* An accelerometer is placed on the entrance door of the house. If this reading exceeds a stipulated threshold when security mode is enabled, it registers this as a break-in and alerts the owner in the same manner as the above.
* An ultrasound sensor is also present in the house which is placed in such a way that it detects any kind of movement and controls the lighting automatically.
* A water tank is used as the primary water source which is replenished using a water pipeline. When the water level in the tank falls below a certain threshold, a butterfly valve present in the pipeline opens which lets the water into the tank and closes when a certain level is reached.
* A ventilator (DC motor) is placed in the bedroom which has 3 different speed modes which can be controlled using the remote.
* As soon as the sun rises in the morning, an LDR detects the sunlight and sounds a wakeup alarm while displaying a sunrise animation on the display. This alarm can also be turned off with the remote.