Welcome everyone as my friend said my name is şerafettin öztürk. I will talk about the devices we use in this project.

As you can see on the board and my hand zigbee is a small device which uses wireless communication to send and receive data. There are three types of these devices. Coordinator, router and end device. Coordinator is the root of the network and every network must have one. Router can act as an intermediate router, passing on data from other devices. It just has enough functionality to talk to coordinator. A device has three functionalities on it the only thing you need to do it just adjust which mode you want to use it.

Next, The Raspberry Pi is a credit-card sized computer that plugs into your TV and a keyboard. It’s a capable little PC which can be used for many of the things that your desktop PC does, like spreadsheets, word-processing and games. It also plays high-definition video

And our last embedded device as all you know department’s pıc development board. We use it to create scenarios for different home appliances.

Now I am going to talk about our system over system architecture. There are 3 main components: client, server, embedded. Client is where users interact with the system and reach system components.

Embedded component consists of Raspberry PI, xbee coordinator and number of xbee end devices.

Raspberry pi send commands to the appliances and receive status information via xbee coordinator. Also send the status information to the data storage.

Server is the component which connects everything. Server consists of GUI, Back end applications, Authentication, Data retrieval and lastly we have data storage component.

Back end applications we use are CSS, PHP, javaScript .

GUI component provides a user friendly environment with the help of back end applications

Data storage component is MYSQL server to store the data.

Authentication which blocks unauthorized access to the system

Data retrieval is responsible to access data from data storage and raspberry pi.

Now what we have done this term?

As a group we decided to start our project from communication of embedded devices. For this purpose we start by communication of two zigbees and we generate a framing system to send and receive data between two zigbees.

After finishing this part we started, implementing home appliance simulation using pic development board using picos18.

Now as we come to the end of semester we are working on sending and receiving data mysql server.

These are what we have done up to now and these are what we are going to do from now on. We are going to implement machine learning for specific scenarios which will make the system work more efficient and spend less energy. Also we are going to integrate raspberry as coordinator box instead of our computers. Lastly, we are going to generate set of sensors which can be easy to apply to all home appliances including back end programming and interface.

To sum up, In this project, a general purpose wireless controller hardware that controls the home appliances and various sensors, and a master controller software working on an embedded Linux installed board will be developed. Master controller will collect data, show data in a user friendly interface, let user send control commands to appliances, push data to web services if necessary, and also provide web based control of devices. Master controller is developed on a Linux box – Raspberry PI.

Here are our references. Thank you for listening if you have any questions we will be happy to answer them