Saving energy in smart home based in activity recognition

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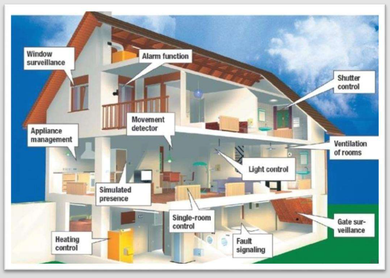
Abstract:

The goal of our work is to economize on **energy** consumption in the **smart home** by switch off the **devices** that don't need to use at a certain time, by identifying the **activity** of the person to conclude the devices that he needs in that period and doesn't need.

Key words: smart home, energy, devices, activity.

Introduction:

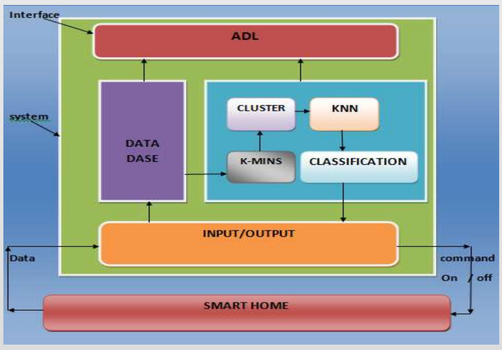
Technology is the nerve of our lives now through which we can lose everything, for example, when you work and stand for anything that resorts to the search engines to use and the smart home of the features of technology Ed is a number of innovations merged with each other gave us the so-called smart home and we find each of the steps followed by the basic text To the result and we have chosen the activities of the permanent human through which we started our idea, which is how to learn about human activity and how to save from the consumption of electricity.



Fig(1):architecteur of smart home

The method of work :

Choose a region or city so that this plays a large role for climate variability and several other factors from one region to another And then choose the house where the number of individuals and devices an important role to complete the other steps we are studying in the space of the house to adjust the equipment and to reach a precise result Then we monitor the equipment and activities of individuals inside the house and the difference in temperature and humidity and build a database to help us in our study In the latter, we apply the k-mean algorithm for clustering , then apply the k-nn algorithm classification.



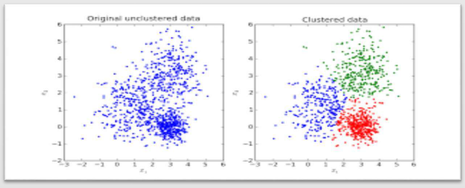
Fig(2):digramme of Our Works

Results:

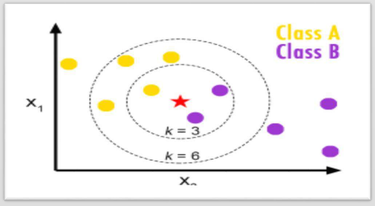
Fig(3): model of an home

our work we can limit it by two steps. the first one is training and the second one is testing .then we used tow algorithms k-mens for clustering the activity and k-nn for classification new data.

- The first algorithm is **k-mines** which is specialized in aggregation by fundamental factors **.**



fig(3):résulte of k-mens algorithme



Fig(4): k-nn méthode

Conclusion:

Science has been able to achieve things that were mere imagination and through research and experience has reached an unexpected extent, as man has satisfied his desires in an automatic way to make all the devices of the house smart, but this is a hindrance is the consumption of electricity as all of the latter require electrical energy while It is not impossible. Thanks to the previous research, we were able to find a technique by simply identifying the human activity at home, which enables us to know the devices that are required. To engage or guardian extinction.

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