Python Pioneers

[Smart Home Project]

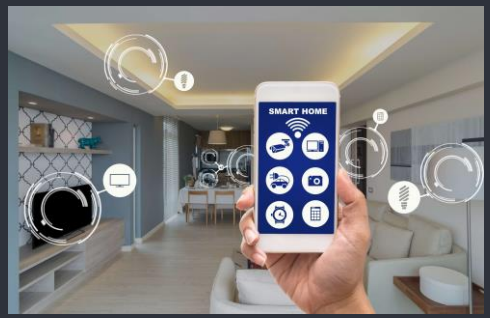
<Made by:
Jana Ahmed – Ahmed Mohsen – Mostafa Magdy>

}

Supervised: Dr/ Doaa Shawky

Introduction about the smart homes:

Smart home systems are important in modern living, providing a luxury level of convenience and efficiency by seamlessly integrating various devices and automating daily tasks. The ability to remotely monitor and control security features enhances home safety, offering users peace of mind and real-time responsiveness to potential threats. Additionally, smart home systems contribute to sustainability efforts by optimizing energy usage, reducing utility costs, and minimizing the environmental impact of household activities.



01 {The importance of smart home systems

<
1. Convenience: Simplifies daily tasks through automation and remote control.
2. Security: Enables real-time monitoring and control of security devices.
3. Energy Efficiency: Optimizes the use of lighting, heating, and appliances for reduced energy consumption.
4. Cost Savings: Lowers utility bills through efficient energy management.

}>

01 {The importance of smart home systems

<
5. Customization: Allows personalized automation to suit individual preferences.
6. Peace of Mind: Enhances home safety and provides reassurance to users.
7. Future-Proofing: Adaptable to evolving technologies for long-term relevance.
8. Environmental Impact: Minimizes the carbon footprint by promoting sustainable practices.

}>

Do smart homes help in protecting the environment?

<

1. Energy Efficiency: Smart homes optimize energy use, reducing overall consumption.
2. Resource Conservation: Automated systems minimize wastage of water and other resources.
3. Remote Monitoring: Enables users to manage and adjust devices for eco-friendly practices from anywhere.
4. Sustainable Practices: Encourages energy-saving habits, contributing to a greener lifestyle.

>

}

Do smart homes help in protecting the environment?

<
5. Lower Emissions: Efficient energy use results in reduced carbon footprint.
6. Smart Appliances: Energy-efficient appliances contribute to environmental conservation.
7. Waste Reduction: Automated systems can help in reducing unnecessary resource consumption and waste generation.
>

}

Our project; {

Our project aims to solve all these problems by generating a code that can be considered as a smart home software system which control all the facilities of the smart house. Our project consists mainly of two parts:

}

The main

Functions

The first part: Creating accounts and user management (Signup and Login):

First of all, we ask the user to choose to signup or login, if he chose signup, he begins to create a new account with entering the (parent or child) mode, username and password. If he chooses login, he logins to his old account

```
}
```

```
Welcome to your smart home
Signup or login? signup
Are you a parent or a child? parent
Enter username: Jana Ahmed
Enter your password JanaAhmed@2005
strong password
Signed up successfully
```

```
Welcome to your smart home
Signup or login? login
Welcome back! Please log in.
Enter your username: Ahmed Mohsen
Enter your password AhmedMohsen@2005
Login successful <3
```

test.py users.txt

```
Username: Ahmed Mohsen   Password: AhmedMohsen@2005     Mode: parent mode
Username: Jana Ahmed     Password: JanaAhmed@2005       Mode: parent mode
Username: Mostafa Magdy  Password: Mostafa@123      Mode: child mode
```

The second part: the controlling of home appliances:

{

Before the control, the program asks the user if he wants to know the status of the house. If he said yes, the program generates random values for all the facilities of the house (temperature, water, gas, light, devices) for all the rooms.
Then, the program asks the user if he wants to change the status of the house. If he said yes, the program begins to show the modes of control.

}

```
Do you want to know the home status? : yes
bedroom temperature is 23
bedroom light is turned off
livingroom temperature is 21
livingroom light is turned on
sofra temperature is 12
sofra light is turned on
bathroom temperature is 14
bathroom light is turned on
bathroom water is closed
bathroom gas is opened
bathroom devices are opened
kitchen temperature is 12
kitchen light is turned off
kitchen water is opened
kitchen gas is opened
kitchen devices are closed
```

The second part: the controlling of home appliances:

There are two modes of controlling:

- Parent mode: which can control of the whole features (temperature, water, gas, light, devices)
- Child mode: which can control only the features of (water, light, devices) to ensure the safety of the children and prevent any accidents.

After that, the program asks the user to choose what he wants to change, the room he wants to change it in, and a confirmation question to ensure that the decision is made by the user not by accident.

```
Which thing you want to change? (temperature, water, gas, light, device) : temperature
which room you want to change in it? (bedroom,livingroom,sofra,bathroom,kitchen): bedroom
Are you sure that you want to change the temperature of bedroom? yes
```

Things that can be controlled:

1. Temperature
2. Gas
3. Water
4. Light
5. Device

Additional features:

1. Timer
2. Confirmation question
3. Wrong syntax response

Thanks for listening;

<Made by: Jana Ahmed – Ahmed Mohsen – Mostafa Magdy>

PYTHON PIONEERS