**Furniture Arrangement AI**

This project optimizes furniture placement in a room using AI, ensuring an efficient and aesthetic arrangement based on user input.

**Overview**

* Users can choose between a **Bedroom** or **Hall** layout.
* Furniture is arranged based on predefined rules:
  + **Bedroom**: Bed placed against a wall or corner, TV unit aligned to the bed and attached to the wall, cupboard placed at an edge/corner, chair, and table positioned randomly.
  + **Hall**: Sofa positioned at the extreme edge or corner, TV unit aligned with the sofa and attached to the wall, cupboard placed at an edge/corner, table positioned randomly.
* The layout is visualized using Matplotlib.

**Features**

* **Optimized Layouts**: Ensures a realistic and functional room setup.
* **Automatic Placement**: Positions furniture based on space constraints.
* **User Input Driven**: Asks the user whether they are designing a bedroom or hall.
* **Graphical Representation**: Displays the final furniture arrangement using Matplotlib.

**Installation**

1. Clone the repository:

git clone https://github.com/your-username/furniture-ai.git

1. Navigate to the project directory:

cd furniture-ai

1. Install required dependencies:

pip install -r requirements.txt

**Usage**

1. Run the Python script:

python main.py

1. Enter **"bedroom"** or **"hall"** when prompted.
2. View the generated furniture layout.

**Example Output**

After running the script, you will see a plotted room layout with furniture arranged as per the chosen room type.

**Future Improvements**

* Implement AI-based optimization for better space utilization.
* Allow users to customize room dimensions and furniture sizes.
* Add GUI for an interactive experience.

**License**