**Assessment 3: Requirement prioritization**

Prioritize requirements for a project using different techniques

**Task 1:** Categorize requirements for a smart home system using the **MOSCOW** method

**Task 2:** Perform a Value vs Effort Analysis for the same system

**Deliverables: Priority Requirements list & an analysis result**

ANSWERS:

**Task 1: Categorizing Requirements Using the MoSCoW Method**

The MoSCoW method prioritizes requirements into four categories:

* **M (Must-Have)** – Essential for system functionality.
* **S (Should-Have)** – Important but not critical.
* **C (Could-Have)** – Nice to include if resources allow.
* **W (Won't-Have)** – Not a priority for now.

**Smart Home System Requirements (MoSCoW Categorization)**

| **Requirement** | **MoSCoW Category** | **Justification** |
| --- | --- | --- |
| Secure user authentication (biometric or PIN) | **Must-Have** | Ensures only authorized access |
| Remote control of lights & appliances | **Must-Have** | Core functionality of a smart home |
| Automated security alerts (intrusion detection) | **Must-Have** | Critical for safety |
| Mobile app integration | **Should-Have** | Improves usability but not essential |
| Voice command support (Alexa, Google Assistant) | **Should-Have** | Enhances convenience but can be added later |
| AI-based energy optimization | **Could-Have** | Reduces power consumption but requires complex implementation |
| Customizable automation routines | **Could-Have** | User-friendly customization, but not urgent |
| VR-based home simulation | **Won't-Have** | Unnecessary for now, costly to implement |

**Task 2: Value vs. Effort Analysis**

The **Value vs. Effort Matrix** helps prioritize tasks by comparing:

* **Value (Impact on Users & System Goals)**
* **Effort (Complexity, Cost, and Resources Required)**

**Value vs. Effort Grid for Smart Home System**

| **Requirement** | **Value (High/Medium/Low)** | **Effort (High/Medium/Low)** | **Priority** |
| --- | --- | --- | --- |
| Secure user authentication | High | Medium | ✅ **High Priority** |
| Remote control of lights & appliances | High | Medium | ✅ **High Priority** |
| Automated security alerts | High | High | ✅ **High Priority** |
| Mobile app integration | Medium | Medium | ⚡ **Medium Priority** |
| Voice command support | Medium | High | ⚡ **Medium Priority** |
| AI-based energy optimization | High | High | 🚀 **Low Priority (Future Implementation)** |
| Customizable automation routines | Medium | Medium | ⚡ **Medium Priority** |
| VR-based home simulation | Low | High | ❌ **Not a Priority** |