**Functional Requirements**

#### **Campaign**

1. **Identification and Basic Details**:  
   Each campaign must have a unique ID, a name, and a description. The description should outline the campaign's storyline, key themes, and objectives.
2. **Players and Characters Association**:  
   A campaign can have multiple players and their associated characters. The system must track which characters belong to which campaigns, ensuring no character is linked to more than one campaign simultaneously.
3. **Campaign Settings: (NOT IMPLEMENTED)**  
   The system should allow the Game Master (GM) to set and modify specific campaign parameters, such as the starting level, game rules, and allowed content (e.g., homebrew, specific modules).
4. **Progress and Milestones: (NOT IMPLEMENTED)**  
   Campaigns should include milestones to track story progression, completed objectives, and key events. These milestones should link back to players and characters involved.

#### **Player**

1. **Identification and Basic Details**:  
   Each player must have a unique ID, name
2. **Character Association**:  
   A player can create and control multiple characters. The system must track which player owns which character.
3. **Game Participation**:  
   The system should track which campaigns a player participates in and their active character for each campaign.

#### **Character**

1. **Identification and Basic Details**:  
   Each character must have a unique ID, a name, and alignment.
2. **Character Statistics**:  
   Characters must track key attributes such as level, experience, hit points, armor class, and proficiency bonus.
3. **Abilities and Skills**:  
   Each character must be linked to ability scores and their modifiers, along with associated skill proficiencies.
4. **Inventory and Equipment**:  
   Characters must manage their inventory, including equipped items and attunement slots.
5. **Relationships**:  
   Characters should track relationships with their species, class, subclass, and background.

#### **Species**

1. **Identification and Basic Details**:  
   Each species must have a unique name, traits, and modifiers.
2. **Trait Association**:  
   Each species can have multiple traits, such as special abilities or bonuses.
3. **Ability Score Modifiers**: **(Simplified version used)**  
   Species must track their unique ability score adjustments and how they affect the character.

#### **Trait**

1. **Identification and Description**:  
   Each trait must have a unique ID, a name, and a detailed description of its effects.
2. **Association with Species**:  
   A single trait can belong to multiple species. The system should ensure proper mapping to reflect which species have which traits.

#### **Class**

1. **Identification and Details**:  
   Each class must have a unique ID, name, hit die, primary ability scores, save proficiencies, and starting proficiencies.
2. **Level Progression: (NOT IMPLEMENTED)**  
   Classes must include level-based features, such as increased proficiencies or special abilities.
3. **Subclass Relationship**:  
   Classes must track their associated subclasses and the level at which characters can select them.

#### **Subclass**

1. **Identification and Details**:  
   Each subclass must have a unique ID, name, and description.
2. **Level Requirements**:  
   Subclasses must define level prerequisites for selection.
3. **Subclass Features**:  
   Subclasses must track multiple features granted at specific levels.
4. **Class Association**:  
   Subclasses must link to a specific class, ensuring they cannot exist independently.

#### **Caster**

1. **Casting Details**:  
   Each caster must track their spellcasting type, spell slots, prepared spells, spells known, and spell attack modifiers.
2. **Class Association**:  
   Each caster must link to one or more classes, defining the spellcasting capabilities of those classes.

#### **Spell**

1. **Identification and Details**:  
   Each spell must have a unique name, level, school, casting time, range, components, duration, and detailed effects.
2. **Caster Association: (NOT IMPLEMENTED)**  
   Spells must track which casters (via class relationships) have access to them.

#### **Inventory and Item**

1. **Character Inventory**:  
   Each character must have an inventory tracking items by name, type, weight, rarity, and quantity.
2. **Item Details**:  
   Each item must include information about effects, attunement requirements, magical properties, and descriptions.
3. **Inventory Management**:  
   The system should allow characters to add, remove, and equip items, with validations for attunement slots and equipped items.