### **1. Set up the Nao robot and ensure all hardware is functioning (e.g., motors, sensors)**

**As a developer,**I want to set up the Nao robot and verify all hardware components,  
so that I can ensure the robot is fully operational before development.

**Acceptance Criteria:**

* The Nao robot is powered on and connected to the development environment.
* All motors, sensors, and joints are tested for proper functionality.
* Any faulty hardware is identified and reported for troubleshooting.

### **2. Install and configure the Nao robot SDK on the development environment**

**As a developer,**I want to install and configure the Nao robot SDK,  
so that I can develop and deploy programs to control the robot.

**Acceptance Criteria:**

* The Nao SDK is successfully installed on the development machine.
* The development environment can establish a connection with the Nao robot.
* Sample scripts can be executed to control the robot’s movements.

### **3. Develop basic movements for the Nao robot**

**As a developer,**I want to program basic movements for the Nao robot,  
so that it can perform foundational motions required for dancing.

**Acceptance Criteria:**

* The robot can execute simple motions such as standing, walking, and waving.
* A set of basic dance moves (e.g., swaying, arm movements) is implemented.
* The movements are smooth and balanced without hardware strain.

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### **4. Set up audio input system to receive and process music files**

**As a developer,**I want to set up an audio input system for the Nao robot,  
so that it can receive and process music for analysis.

**Acceptance Criteria:**

* The robot can receive live audio input through its microphone.
* The system supports loading and processing external music files.
* Basic audio processing can be implemented to analyze the song

**5. Test and determine if Shazam API can be utilized**

**As a developer,**I want to evaluate the feasibility of using the Shazam API,  
so that I can determine if it can help recognize and categorize songs for dance adaptation.

**Acceptance Criteria:**

* The Shazam API is successfully accessed from the development environment.
* A test query can identify a song from an audio snippet.
* The API’s response time and accuracy meet project requirements.