# Sustainablity IoT Hackathon

# Smart Inclusive Party House

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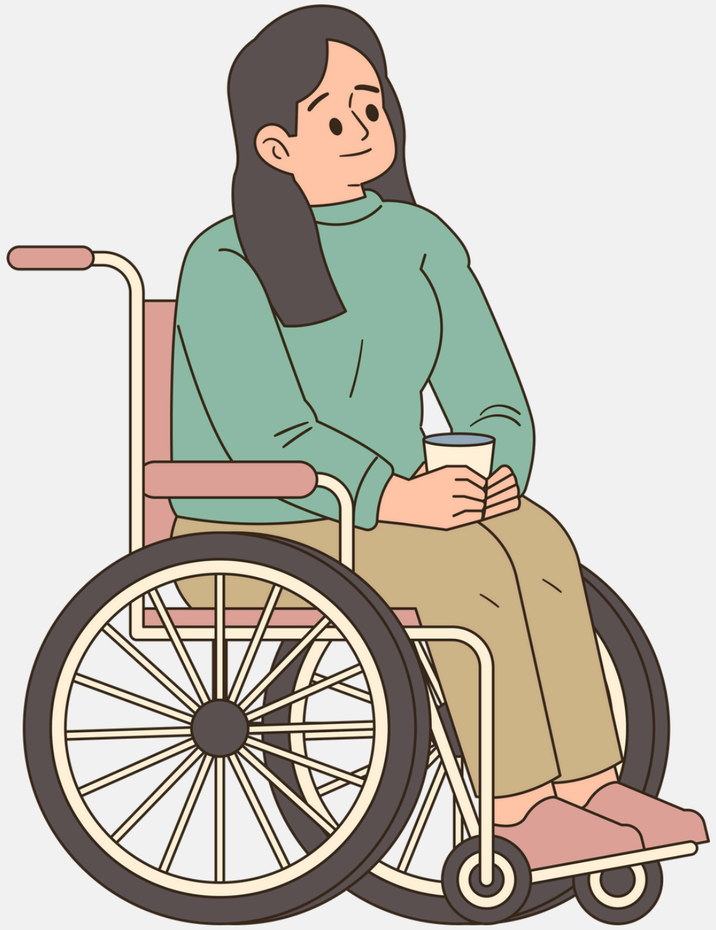
# Problem Statement

- Social spaces are often not designed **inclusively**.
- People with disabilities face physical, sensory, and social barriers in events or parties.
- Lack of **awareness** and **empathy** from others creates unintentional **exclusion**.
- Disabled persons often do not have the nudge to visit social places due to perceived exclusion



# 39%

**People with Disability has Depression**

# 30%

**People with Disability has Borderline Depression**

# 5X

**Chances of having mental disorder**

Source: https://bmjopen.bmj.com/content/15/2/e082955

# Scenarios

## Guest with Mobility Impairment

- **Arrival:** Sarah arrives in a wheelchair and taps her RFID card. The door opens automatically, and the screen displays: *“Welcome, Sarah!”*
- **During the party:** She navigates easily with visual LED cues guiding her to quieter areas. Sound levels are kept comfortable thanks to noise alerts.
- **Leaving:** Before leaving, she taps her RFID again at the empathy station, earning a “Thank you for joining us” message and a score update.

# Scenarios

## Abled Guest Becoming More Aware

- **Arrival:** Sarah walks in and notices the door opening for Jack. He sees the welcome message and smiles.
- **During the party:** She gets a sound warning on the **LCD** when the room gets too loud, prompting him to turn down the speaker.
- **Leaving:** She helps a guest find the restroom using the **LED** guide. Scanning his **RFID** tag, she sees *“Thanks for making it inclusive!”* on the screen — and feels good about it.

# Scenarios

## Deaf Guest Experiencing the Party

- **Arrival**: Lina scans her **RFID**; the **LCD** says: “Welcome, Lina! Let the good vibes roll ✨”.
- **During the Party:** She feels music through **buzzers**, sees it with **RGB** lights synced to rhythm. Noise & gas sensors warn of crowd intensity with fun **LCD** notes like “Let’s chill a bit 😌”. **LED** paths help her move around independently.
- **Departure**: She checks out at the **LCD** screen, greeted with: “Thanks for lighting up the party! 💫”

# Solution Overview

An interactive, sensor-enabled **party environment** that promotes awareness, accessibility, and inclusion
Features:

- **RFID + Servo Motor**: Automated, accessible door entryRGB Lights + Sound Sensor: Sensory-friendly noise awareness | Fire Alarms.
- **LCD + Motion Sensor**: Displays empathy prompts and messages
- **Buzzer + RGB**: Music translated into vibration & color for deaf guests
- **LED + IR Sensor**: Visual navigation aid for visually impaired guests
- **Temperature, humidity, gas sensor, LCD**: Air quality check (smoke, overcrowding); encourages fresh air breaks for people with asthma or sensory issues

# Impact of Solution

## How does it relate to Smart Cities?

- Inclusive urban design, aligned with UN **SDG #11** (Sustainable Cities & Communities, target **11.7**)

  ***Indicator 11.7.1:*** *Average share of the built-up area of cities that is open space for public use for all, by sex, age and persons with disabilities*

## How does it affect Behavior Change?

- Improves accessibility, which creates opportunities for disabled people to join and have fun. Ultimately, encourages people to invite and consider people with disabilities.
- Builds empathy through interaction: stories, prompts, and sensory immersion.

## What kind of Nudges are used?

- By using lights, sounds, and simple interactions, the system creates a new normal where inclusive behavior becomes easy, visible, and natural for both disabled and abled people.
- Disabled people become more open to socialize