

# SMART PUBLIC RESTROOM

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# Abstract

- An Artificial Intelligence of toilet (AI-toilet) based on a triboelectric pressure sensor array.
- Low cost and easily deployable software.
- The sensor array attached on the toilet seat is composed of 10 textile-based triboelectric sensors.
- 6 user can be correctly identified with more than 90% accuracy using deep learning.
- The system integrates a camera sensor to analyze the simulated urine by comparing with urine chart and classify the types and quantities of objects using deep learning.

- All information including two-factor user identification and entire seating time using pressure sensor array ,and data from the with more then 90% accuracy using deep learning.
- The signals from pressure sensor also can be used for recording the seating time on the toilet.
- The data from the urinalysis and stool analysis were automatically transferred to a cloud system and were further shown in user's mobile devices for better tracking their health status.

# Smart public toilet

- It is uses integrated technology and data to interact and connect with the user

# Smart toilets important

- For elderly people more prone to arthritis or mobility issues ,removing the need to grab cumbersome handles or flush buttons can make for a much smoother toilet trip.

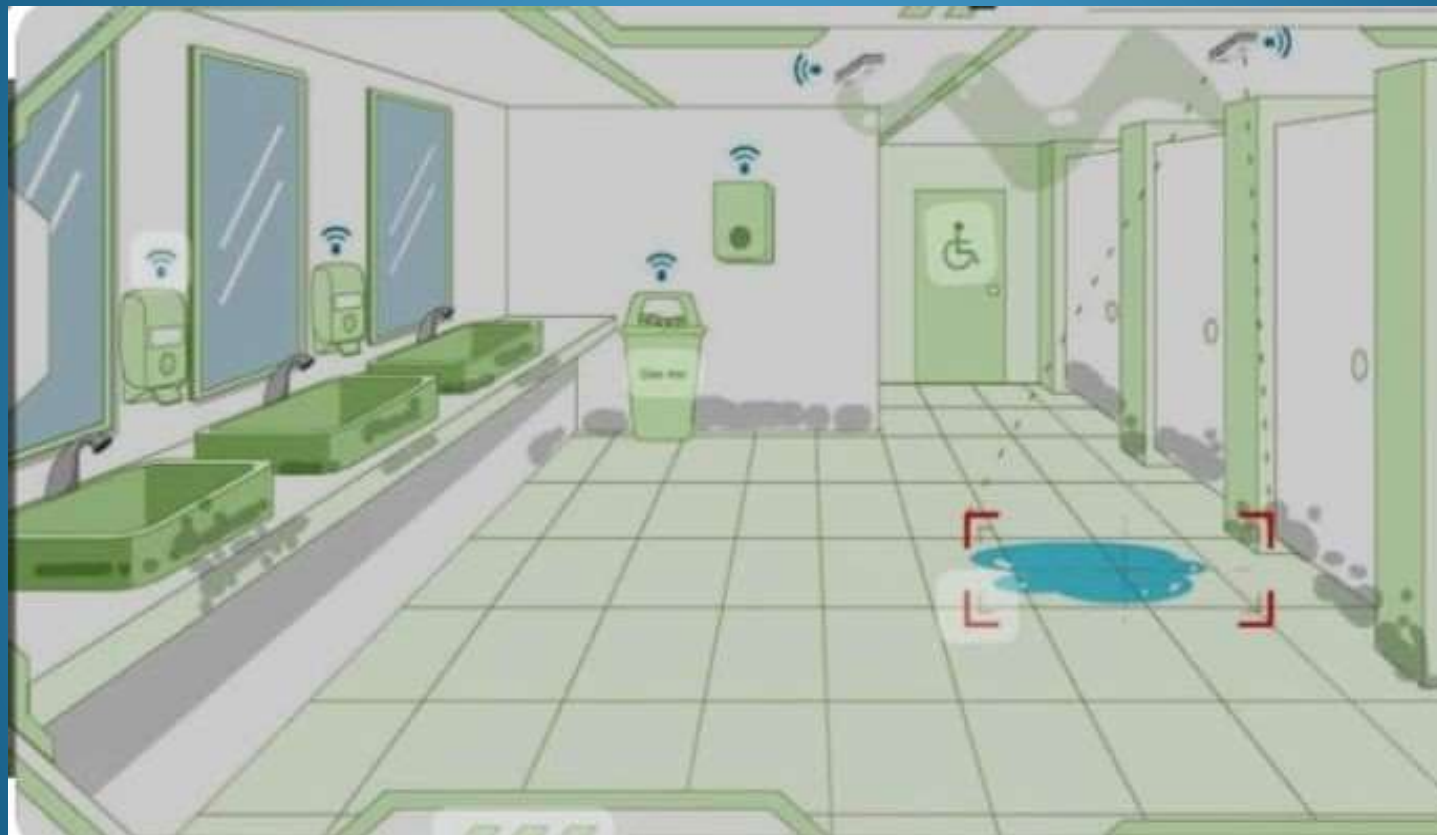
# Uses of smart toilet

- ❖ A smart toilet cleaner will automatically flush when the user moves away.
- ❖ Heated seat ,automatic dryer ,automatic toilet tank cleaners and deodorizer.



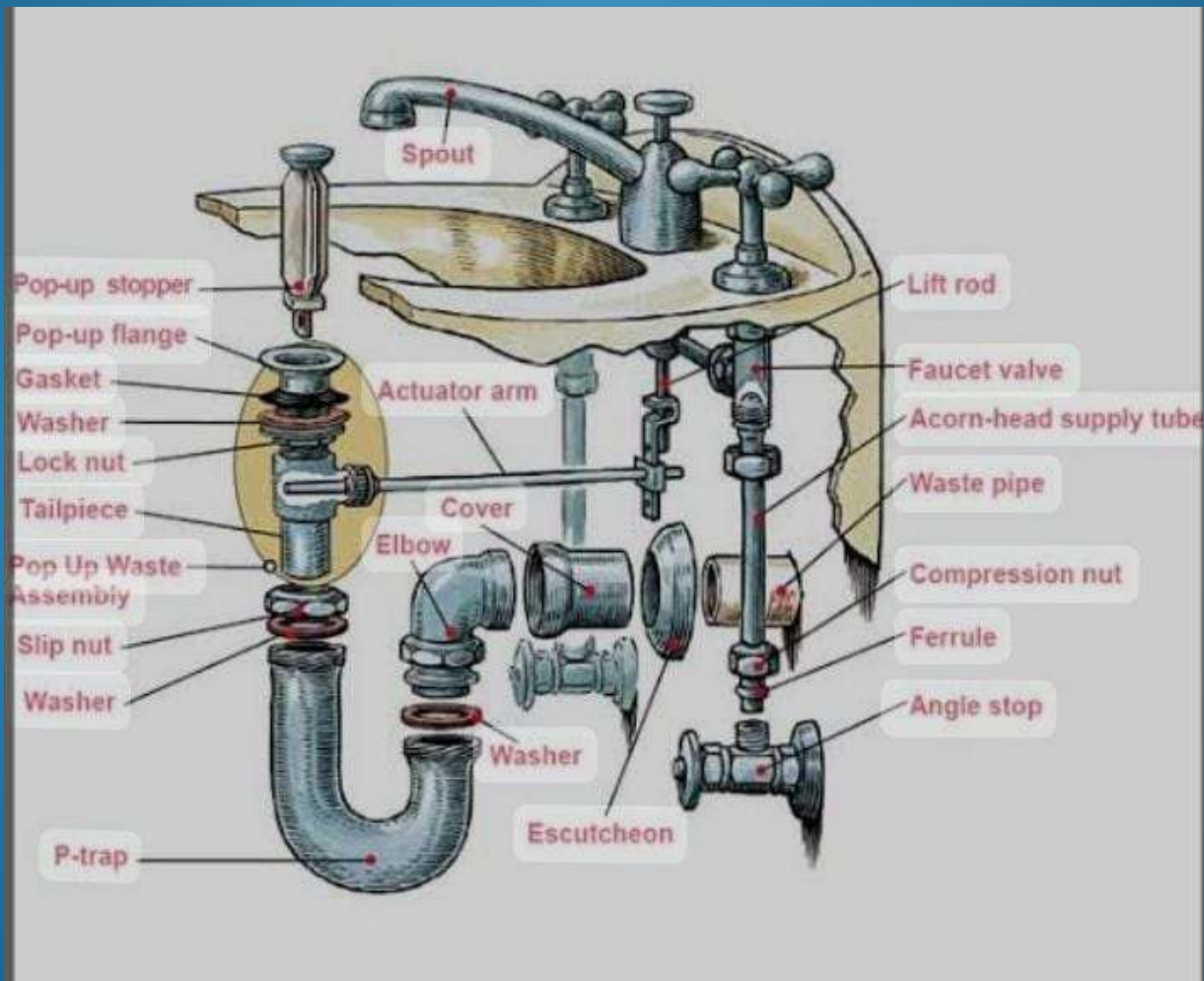
# Invented the smart toilet

- ❖ History of the development of smart toilets.
- ❖ The most people think that the smart toilet originated.
- ❖ American Aronld Cohen invented the world's first smart toilet in 1964.











# Future

- Scientists are working on toilet that use bioprocessing and heat treatment to kill pathogens and make solids safe for the environment.
- Older toilets typically use 3.5 gallons or more per flush while modern toilets use just 1.28 gallons or less per flush.

# Working of every item used in our system

- Platform working
- Cistern working
- Lever working

# Different postions of lever

- Following fig illustrate different load condition and their respective position of lever



# Position of lever when load is not applied



# Lever working

- There are total two levers attached on our system.
- Motion transmitting lever.
- Lever with synthetic rubber at the end.

# Motion transmitting lever

- Motion transmitting lever which pushes the second lever attached on it in upward direction and net effect is converted into downward direction.

# Lever with synthetic rubber

- The end this lever is grooved and synthetic rubber is attached which touches the handle of the cistern

# Smart restroom



# lever

