# An Advanced Alzheimer's Medication Reminder System for Enhanced Patient Care and Improved Medication Adherence, Supporting Memory Maintenance and Cognitive Functionality

Rahhal, Hala (School: Alawda Secondary School for Girls)

As our societies age, the number of people living with Alzheimer's disease across the world is expected to rise from 55 million in 2019 to 139 million in 2050, according to the WHO. This disease causes brain changes and affects mental and emotional conditions, including memory loss and difficulty remembering medication schedules. In our Palestinian society, many Alzheimer's patients do not visit mental health centers due to a misguided culture surrounding psychological and memory-related illnesses. This prevents the existence of statistics for Alzheimer's patients, as it is considered part of aging. An advanced model has been designed to remind Alzheimer's patients of their medication schedules. The model uses a special app to alert caregivers and patients when the medication is needed, and the medicine box buzzes. The app uses a face ID/fingerprint to open a medicine box, lightening the required medicine and displaying the name and amount needed. Also, when the medicine is running low, a warning message is sent through the app. The app helps caregivers find resources, coordinate care, and ensure their loved one's health, safety, and well-being. It also assists Alzheimer's patients in tracking their daily activities, engaging them in cognitive games, and doing physical and mental exercises. The project, tested on 10 Alzheimer’s patients for 2 months, utilized MMSE evaluations and caregiver interviews to assess its effectiveness. Findings revealed a significant reduction in patients’ agitation, increased sleep duration, and improved medication adherence. Notably, 9 patients showed enhancements in their MMSE scores, emphasizing the project's positive impact on cognitive function. Though those with Alzheimer's might forget us, as a society, we must remember them.

**Awards Won:**