

Project 4 – Project Idea

Context:

Project 4 Embedded Systems, a project that meets the following requirements: an embedded control system using microcontrollers, sensors, actuators and real time operating systems.

Our first idea was a small robot mouse that can efficiently solve a maze within a short amount of time, shortly after that we decided that this would not have enough of a business value and further developed the idea to a small robot that drives around campus or a library and delivers encouraging messages, but we felt that was not quite it either. So we finally landed on the idea of a small robot toy with a monitor as a face that can drive around, detect table edges and walls, listen to commands and display facial expressions on a monitor.

Problem:

This idea doesn't solve one specific problem but instead would be another way for children and people of all ages to entertain themselves and have a little friend on their desk, maybe they do not have the time or money to have an actual pet, so instead they can have a little robot friend that they can play with when they have the time.

Proposed solution:

As described above this little robot friend would be a decent replacement for any actual pets, to have as a friend. This little robot friend is supposed to be capable of driving around, detecting walls and table edges, so it doesn't drive off and hurt itself, do tricks like spinning when you tell it to spin and display certain emotions when appropriate, like a tired expression when it's battery is almost empty. Further future improvements may include an arm to move objects, the ability for wireless charging so it can drive to its own charging station, a proximity sensor so it can detect when it's being pet and individualized personalities per robot, but since we'll only be building one latter will definitely be not implemented.