

OzoBlockly Editor Challenge

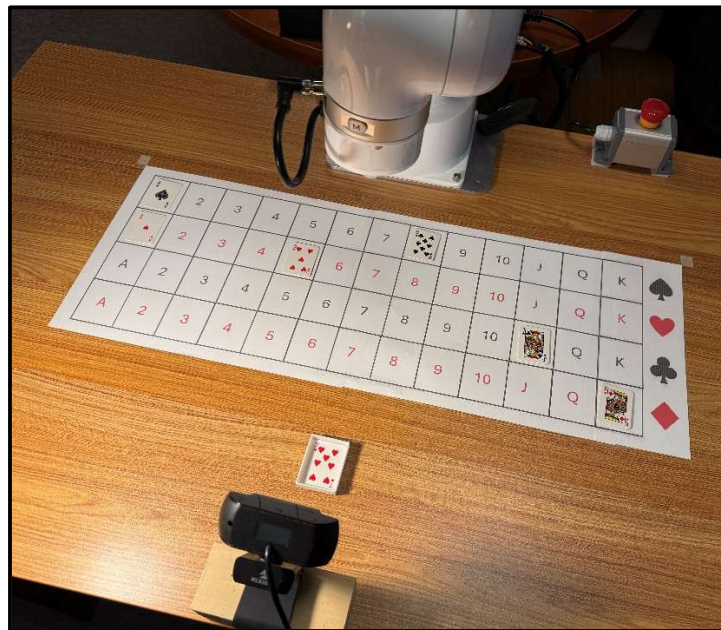
Intelligent Palletizing: Vision-Guided Sorting with LLM Logic

Student Guide

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Introduction

Your challenge, which programs ORA to sort playing cards into a 4x13 grid as shown in the figure below, effectively mirrors critical industrial automation tasks. It specifically demonstrates competency in coordinate systems, path planning, and logic-based sorting. A camera, shown at the bottom of the figure, captures an image of the playing card in the tray, ORA then picks up the card and places it in the correct location in the grid.



This card-sorting application is directly analogous to kitting and order fulfillment in warehouses, where robots organize randomized inventory into specific order bins. It also simulates palletizing, where arms stack items in calculated grid patterns to maximize stability, much like your card placement strategy.

Furthermore, the precision required resembles electronics assembly, where components are placed into exact slots on trays or circuit boards. It is also comparable to laboratory automation, where cobots sort test tubes into racked grids. Finally, since your system uses vision to identify suits and cards within suits, it replicates quality control sorting, differentiating items based on visual data. Overall, this project is a robust demonstration of fundamental automation engineering skills.

The playing cards uses are small 30mm x 40mm cards available online at [Amazon.com](https://www.amazon.com). The 4x13 grid accompanies this lesson as a printable Ozomap. The 3D printer STL file can be downloaded [here](#).

Embark on this OzoBlockly Editor Challenge and unleash your creativity! By programming ORA to sort playing cards, you'll engage in real-world automation tasks that enhance your problem-solving skills. This project isn't just fun; it's a pathway to mastering essential engineering concepts. Let's transform your ideas into action and show the world what you can achieve!
