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Culmination Project Proposal

Project Description:

My Culmination project plans to create a web app that would recognize and detect magic

the gathering cards using a connected camera to give the user detailed information about said

scanned card. Ideally the card would be recognized from a list or database of documented cards

which contain statistics, pricing and other information about the card. The project may olny

cover one aspect of the card to be fed to the user once properly detected by a connected web

camera. I want to take this endeavor to hone my software engineering and web development

skills. I would like to use this project to show prospective employers that I have a range of

talents when it comes to the space of software development.

Methods:

When it comes to the meat and potatoes of the project I'd like to utilize a library for

python called "OpenCV". This primarily helps with detecting the specific card that is being read

by the webcam. After the card has been detected it will read through a list of cards to see if there

is a match. Once a match has been made the user will get some sort of information pertaining to

that specific card (at the moment the goal is to display the price of the card based on some sort of

store api). If there's enough time I would like to set up a webpage where users could use the card recognition publicly using their own webcam.

Projects Deliverables:

By the end of the my culmination project I'd like to develop,

- A functional card scanner app

- Have that app implemented in some form on a public site where users could test and use it.

Materials:

 1) A computer connected to the internet

2) Python & OpenCV

3) Magic the gathering cards (real and/or proxy versions)

4) Webcam that can detect the cards

Research Notes & Prototypes:

There are some trading card detection applications (specifically magic the gathering ones) in public already as well as a few tutorials online that help visualize how card detection is implemented such as:

https://www.youtube.com/watch?v=BZGhRSajybk&ab_channel=Ethan

https://www.youtube.com/watch?v=8nltbbyOI6Y&ab_channel=JackBaumgartel

Schedule:

Culmination Project Timeline

| | PROJECT TITLE | MTG Card Scanner |
| | PROJECT MANAGER | Sahan Jayalath |

Task Number	TASK TITLE	START DATE	DUE DATE	DURATION	PCT OF TASK COMPLETE
1	Research				
1.1	culmination proposal				0
1.1.1	Signed agreement				0
1.2	Begin Python development with OpenCV				0
1.3	alpha build of the cam detection for card detection				0
1.4	Debugging				0
1.5	Beta build of the card detection app				0
1.6	debugging				0
2	Use a small list of magic the gathering cards to test recognition				
2.1	Implement a magic the gathering store API to call price data				0
2.2	debugging				0
3	Buy Domain to host app & use flask api to set up card detection app				0
3.1	Make a basic layout using html,css,javascript for the webpage				0
3.2	debugging				

Required Resources:

The only resources I don't quite yet have for this project is a possible domain site to setup the app for public use. Most of the required tech and components can be implemented with what I have.

Budget:

domain - $15.00 - $75.00

New packs of magic cards: $15.00 – $45.00