Ideas for **MAKERS 2022**

Lazy NFT Minter bot

Description

Make a bot that automatically lazy mints photos as NFT . Choose either discord/slack to listen to messages on a specific channel, if the message is an image, then mint it as an NFT on a blockchain of your choice, reply with the link to the NFT on the same channel or a specific channel

Resources

- **NFT tutorial**
- **Discord API**
- **Slack API**

Esoteric Programming Language

Description

Make a programming/scripting language with general programming constructs like sequential and definition/assignment statements (like int a; a =2;), logical constructs (if-elseif-else) and looping constructs (for and while loops).
One can also implement a BrainF*ck interpreter in their language to check for turing completeness.

Resources:

- **Writing an Interpreter**
- **Analysis of Brainf*ck**

Marching squares

Description:

Render implicit functions/Surfaces using openGL, webGL or processing with marching squares/cubes

Resources:

- **Marching Squares**

Polygon collision

Description:

Implement simple polygon collisions.
For Collision Detection: GJK Algorithm
For optimizations: Bounding Volume Hierarchies

Resources:

- **Keerthi Distance Algorithm**
- **GJK Collision Algorithm**
- **Bounding Volume Hierarchies**

Black Menu for social networking sites

Description

Make a black menu for your favorite social networking site. What is a black menu? Have a look at Black Menu for Google

Resources

- **How to create and publish a chrome extension**

Time limiter for social media sites

Description

Make a chrome extension that limits time on social media sites, and blocks said sites after a fixed amount of time.
Features can include:
- Block a specific site after fixed usage per day
- Block all sites after a fixed net usage per day
- Block certain sites during certain times of the day
- Suggest productive websites as an alternative when social media sites are blocked

Brownie points out if the extension can work cross-platform (including mobile)

Resources
- **How to create and publish a chrome extension**

Elon Musk Stock Trading bot

Description

Make an NLP activated tweet parser that parses Elon musk's tweets and if they include any info that can move the markets then it alerts the people subscribed to the service about what to do with that information (BUY/SELL/HOLD calls on a particular stock).
[BONUS] Integrate this service with a broker that offers an API to make actual trades in the stock market (for eg. Zerodha)
Disclaimer: SDSLabs or members of SDSLabs including current members and alumni are not responsible for any gains or losses made while trading or testing on this idea. Investment/Trading in the securities market is subject to **market risk**, do it only at your **own risk**.}

Resources
- **Example**
- **Coinbase API**
- **How to get started with NLP**
- **How to make a Twitter bot**

Mood Lighting based on the actual mood

Description
Using the user's camera to capture video/images of the user's facial expressions, feed that input in a mood-detection ML model that then signals an RGB-smart bulb/Keyboard to change its colors according to the user's mood.

Resources
- **Controlling wifi bulbs with Python**
- **Emotion detection using Python**

A Webserver

Description
A basic server development framework along the lines of Flask(for python) or Gin/Chi(for golang), built from scratch using sockets. Should allow assigning handler functions to routes and be able to handle multiple requests at the same time.

Resources
- **Guide to network programming**
- **Server-side website programming**

A Password Manager

Description
Build a secure password manager where you can save passwords for your different logins and use them again later. Create a web extension for the same. Make sure to make it as secure as you can.
[Brownie Points] Implement automatic detection of login pages and password to be entered in the web extension

Resources
- **KeePass - Open Source Password Manager**
- **What is encryption?**

Keyboard Heatmap Generator

Description

Create a keyboard logger that logs inputs from the user over a period of time and generates a heatmap showing usage

Objectives:

- Should run a daemon that keeps a log of all the keyboard keys pressed.
- Create a GUI that displays heatmaps of the keys pressed.

Brownie points: Display heatmaps for various users, apps, and their combinations.

Resources

- **Keylogger in Python**
- **Web application using Flask**
- **React Library to generate a heatmap**

Packet Visualizer

Description

Create a CLI tool to visualize packet transfer using TCP/IP with ASCII characters

Objective: Create a command-line tool that takes an IP address as input and logs where and when the network packet travels.

Bonus: Draw charts or diagrams to visualize the transfer of packets using ASCII characters on the terminal.

Resources

- **Basics of Networking**
- **A guide to network programming**
- Some tools that might come in handy: netcat, dig, arp, arp-scan, tshark/wireshark, nslookup, nmap, netstat
- Depending on what language you chose to make CLI, you'll find libraries to help you draw charts and diagrams on the terminal. It's just a google search away :)

Design

Description

The design problem statements for MAKERS 2022 are the same as the design problem statements for recruitment released previously. You can check them out [here](#)