**GROUP 6: LUNA HACKS DOCUMENTATION**

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**Abstract**

During the Luna Hacks hackathon for software engineering track, a variety of software applications were developed by teams of software engineers. Each application was developed using different programming languages, frameworks, and tools, and addressed different problems or needs.

**Random Quote Generator:**

This is a program that generates a random quote from a list of quotes. The quotes can be stored in a file, database, or hard-coded into the program. The program selects a random quote from the list and displays it on the screen. It can be developed in any programming language, and the user interface can be command-line or graphical.

**Binary Search Tree in C and JavaScript:**

A binary search tree is a data structure that allows fast searching, insertion, and deletion operations. In a binary search tree, each node has at most two children. The left child is always smaller than the parent, and the right child is always greater than the parent. A binary search tree can be implemented in C or JavaScript using a node structure to represent each node in the tree. The node structure contains a key and pointers to the left and right children.

**Netflix Data Visualization:**

This is a program that visualizes data from the Netflix platform. The data is in the form of user ratings, viewing habits, or any other relevant data. The program can use various visualization techniques like bar charts, line graphs, and pie charts to represent the data. The program can be developed in any programming language and can use visualization libraries like D3.js or Matplotlib.in this case used python.

**Data Structures:**

Data structures are a way of organizing and storing data in a computer so that it can be accessed and manipulated efficiently. Some common data structures are arrays, linked lists, stacks, queues, trees, and graphs. Each data structure has its own advantages and disadvantages, depending on the type of data and the operations that need to be performed on it.

**Random Password Generator:**

This is a program that generates a random password based on user-specified parameters like length, complexity, and character set. The program can use various randomization techniques like random number generation and shuffling to ensure that the password is secure and difficult to guess.

**Data Visualization:**

Data visualization is the representation of data in a graphical or pictorial format. The goal of data visualization is to help people understand complex data by presenting it in a way that is easy to interpret. Data visualization can be done using various software tools like D3.js, Tableau, or Excel. Some common types of data visualizations are bar charts, line charts, scatter plots, heat maps, and geographic maps.

**Tic Tac Toe Game:**

Tic Tac Toe is a classic two-player game where each player takes turns marking a 3x3 grid with X's and O's. The objective of the game is to get three of your marks in a row, either horizontally, vertically, or diagonally. The game can be developed in any programming language and can be played on the command line or with a graphical user interface.

**Silly Hack:**

A silly hack is a small, fun, and often useless program that is developed purely for entertainment or novelty. Silly hacks can be developed in any programming language and can do things like generate random insults, mimic celebrity voices, or generate random cat memes.

**Password Encryptor:**

A password encryptor is a program that takes a plain text password as input and encrypts it using a cryptographic algorithm. The encrypted password is then stored in a database or file for later use. The program can use various encryption techniques like SHA-256, MD5, or bcrypt to ensure that the password is secure and difficult to crack.

**Merge and Sort:**

Merge and sort is a program that takes two or more sorted lists as input and merges them into a single sorted list. The program can be developed in any programming language and can use various sorting algorithms like merge sort, quick sort, or bubble sort to ensure that the final list is sorted.

**Authentication in PHP:**

Authentication is the process of verifying the identity of a user or device. In PHP, authentication can be implemented using various techniques like username/password authentication, two-factor authentication, or OAuth. Authentication can be used to control access to sensitive data or functionality in an application.

**Wordle Clone:**

Wordle is a popular online game where players try to guess a five-letter word by guessing different combinations of letters. A Wordle clone is a program that recreates this game and allows players to play it offline or on their own website. The game can be developed in any programming language and can use a word list to generate the target word and check the player's guesses.

**Scheduler:**

A scheduler is a program that helps people manage their time and tasks. A scheduler can be used to create reminders, schedule meetings, and prioritize tasks. The program can be developed in any programming language and can use a calendar or to-do list to display upcoming events.

**Browser Extension:**

A browser extension is a program that adds extra functionality to a web browser. Browser extensions can be used to block ads, add new features to social media sites, or simplify online shopping. Browser extensions can be developed in various programming languages like JavaScript or Python, and can be deployed on popular browsers like Chrome, Firefox, or Safari.

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