

- **Team Name**
Runtime Terror
- **Team Members**
Alexander Mills, Masen Beliveau, Michel El Chalfoun
- **Problem: What problem are we trying to solve? [0.50 point]**
Providing fast and reliable information on prescriptions or over the counter drugs that are approved by the FDA.
- **Motivation: Why is this a problem? [0.25 point]**
Many drugs are advertised to consumers in America without vital unbiased information. FDA is an unbiased source that hosts valuable drug information about approved drugs however does not make their data easily accessible.
- **Features: When do we know that we have solved the problem? [0.50 point]**
When we provide all accurate information from our FDA approved drug data list in a simple and condensed UI.
- **Data: (Public data set we will be using and the link to the public data set) or (Schema of randomly generated data - i.e. what are the different columns in our dataset and the respective datatypes) [0.25 point]**
Public dataset that pulls from surveys conducted by the CDC, FDA, CMMS, and AHRQ that help provide demographics on drugs, their compositions and package information. We will mainly take in consideration the product type name, proprietary name, nonproprietary name, dosage form name, and route name.(Only using Drugs_product.csv from this data set)
https://www.kaggle.com/maheshdadhich/us-healthcare-data?select=Drugs_product.csv
- **Tools: Programming languages or any tools/frameworks we will be using [0.25 point]**
The programming language we plan on using is C++. As a result our menu is going to be through the terminal, and we are implementing our own data structures. We don't plan on using any additional

tools/frameworks besides some included C++ functions or possibly JSON handling for grouping drug data.

- **Visuals: Wireframes/Sketches of the interface or the menu driven program [0.5 points]**

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Note: '** **' signs denote typed input.

Welcome to
FDA DRUG FINDER

This program allows you to find a summary of all the information related to a drug using FDA Data.
Would you like to search using an AVL Tree or a Map? (A/M) **A**
Please type the name of the drug you are looking for: **Advil**
Searching...
Found! Time needed : 1234 seconds.

Proprietary name:      Advil
Non-Proprietary names: Ibuprofen
                      Ibuprofen Sodium
Requires Prescription: No
Dosage Form:          Coated Tablet
Route:                Oral
Approved Producers:   Pfizer Consumer Healthcare

Search Again? (Y/N) **Y**
Would you like to search using an AVL Tree or a Map? (A/M) **M**
Please type the name of the drug you are looking for: **Mucinex**
Searching...
Found! Time needed : 5678 seconds.

Proprietary name:      Mucinex
Non-Proprietary name:  Guaifenesin
Requires Prescription: No
Dosage Form:          Extended Release Tablet
Route:                Oral
Approved Producers:   Atlantic Biologicals Corps

Search Again? (Y/N) **Y**
Would you like to search using an AVL Tree or a Map? (A/M) **M**
Please type the name of the drug you are looking for: **ABCXYZ**
Searching...
Not Found. Time needed : 99999 seconds.
Search Again? (Y/N) **N**
Thank you for using FDA Drug Finder. Goodbye!|
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- **Strategy: Preliminary Data Structures/Algorithms we may want to implement [0.25 points]**

AVL tree with nodes holding class or json drug data, Maps with drug names as keys leading to drug information class or json.

- **Distribution of Responsibility and Roles: Who is responsible for what?**
[0.25 points]
 - Design and implementation of the user interface System - Masen Beliveau
 - Design and implementation of data import tools - Alexander Mills, Michel El Chalfoun
 - AVL Trees design and implementation - Alexander Mills
 - Map design and implementation - Michel El Chalfoun
 - Testing of data structures and UI - Alexander Mills, Michel El Chalfoun
 - Creating a video - Masen Beliveau
 - Creating Documentation & Analyzing Time Complexity - Alexander Mills, Masen Beliveau, Michel El Chalfoun
- **References [0.25 points]**
 - All Information used is from Kaggle
https://www.kaggle.com/maheshdadhigh/us-healthcare-data?select=Drugs_product.csv