JACKALOPE SEARCH ENGINE

SOFTWARE DESIGN SPECIFICATION

STELLARIS

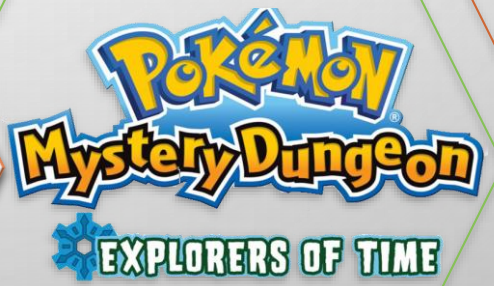
Anton Rakos

Jeremy Wenzel

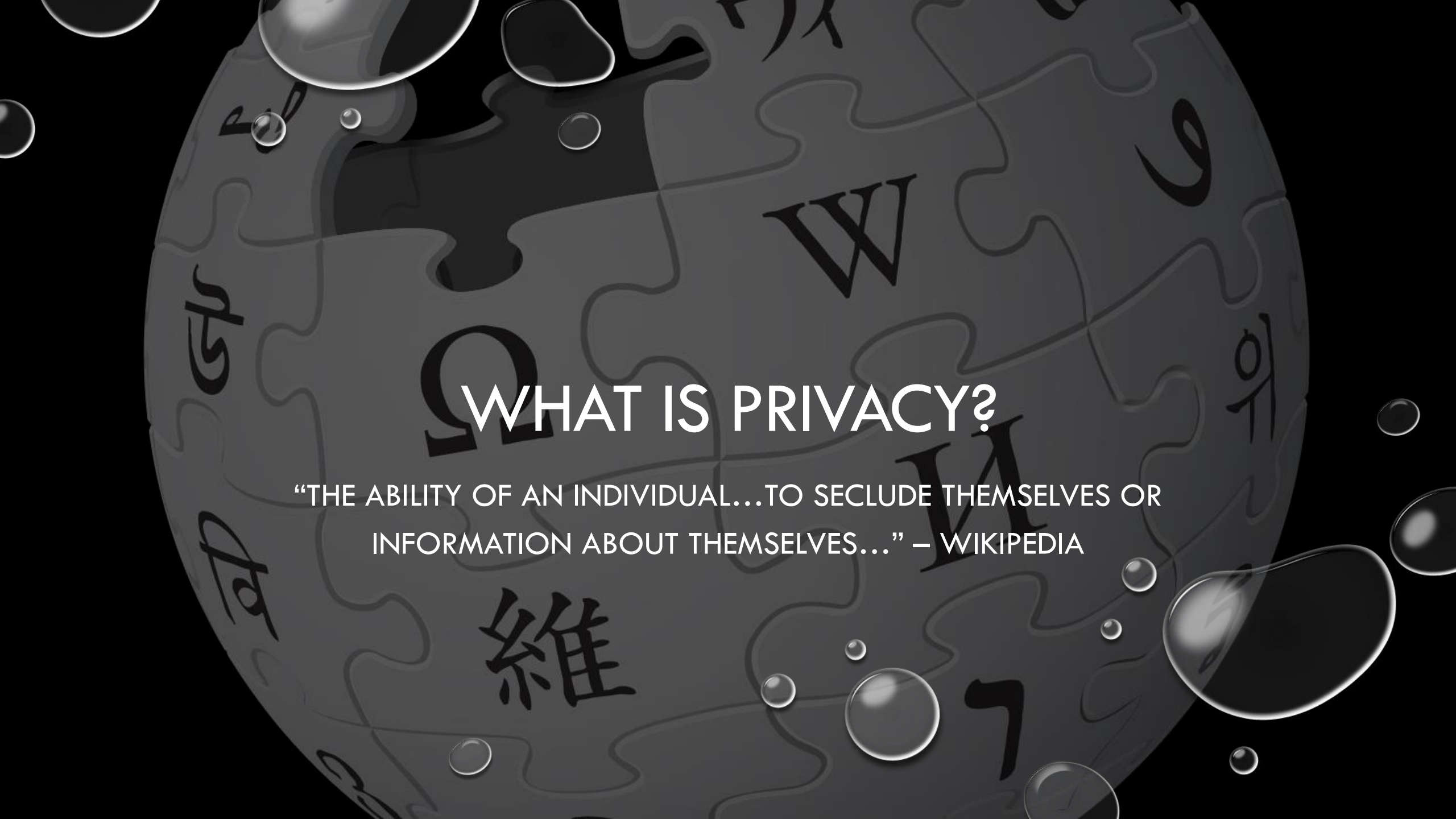
Sarah Dominy

INJUSTICE
GODS AMONG US

Aaron Arnold



Each instance is private & unique
No web address database
Does not save/share searches
Does not prioritize websites
No NSFW, Social Media, or Shopping
Jackalope is different.



WHAT IS PRIVACY?

"THE ABILITY OF AN INDIVIDUAL…TO SECLUDE THEMSELVES OR INFORMATION ABOUT THEMSELVES…" – WIKIPEDIA

HOW PRIVACY IS MEASURED

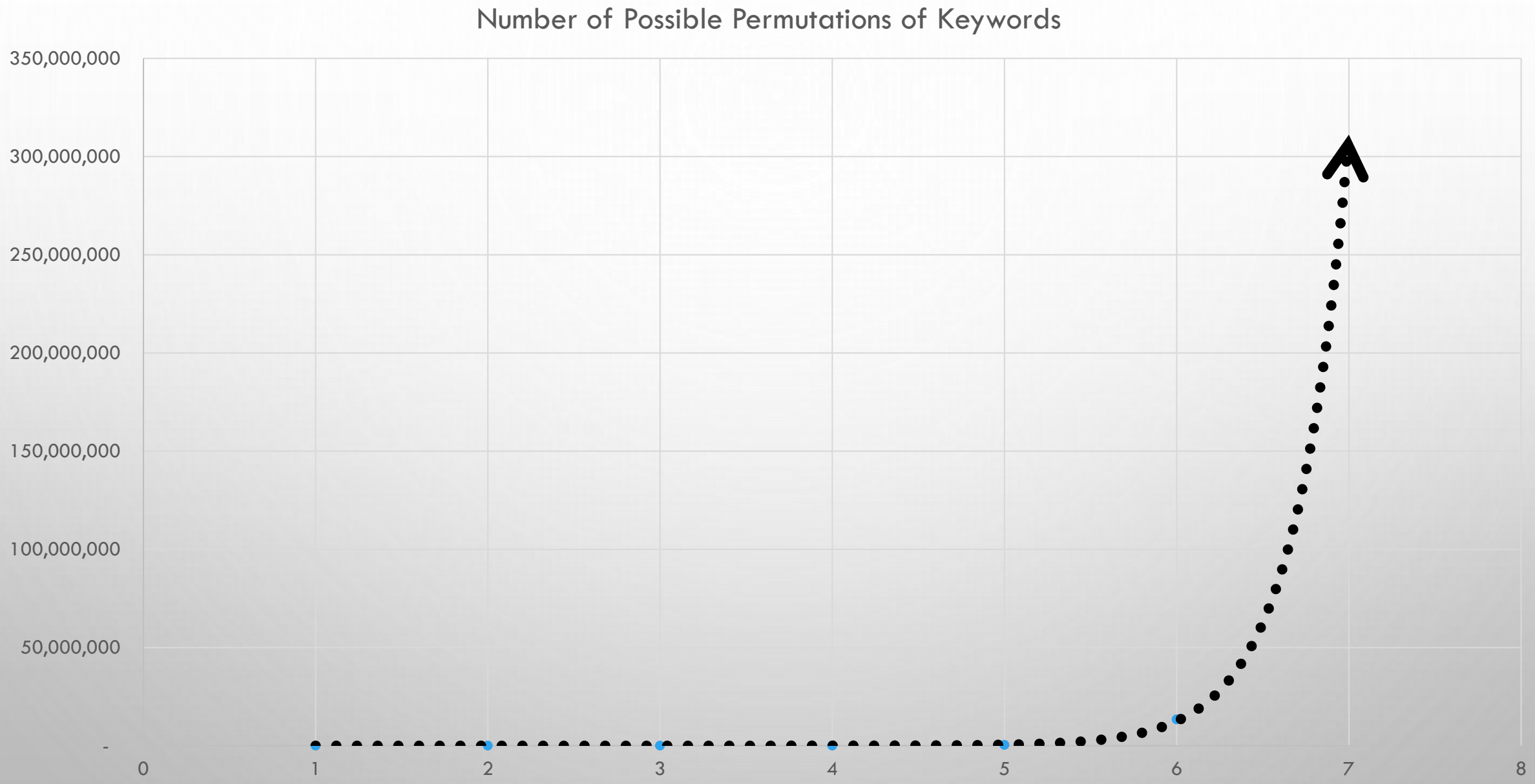
By limiting the level of direct exposure to third party network domains

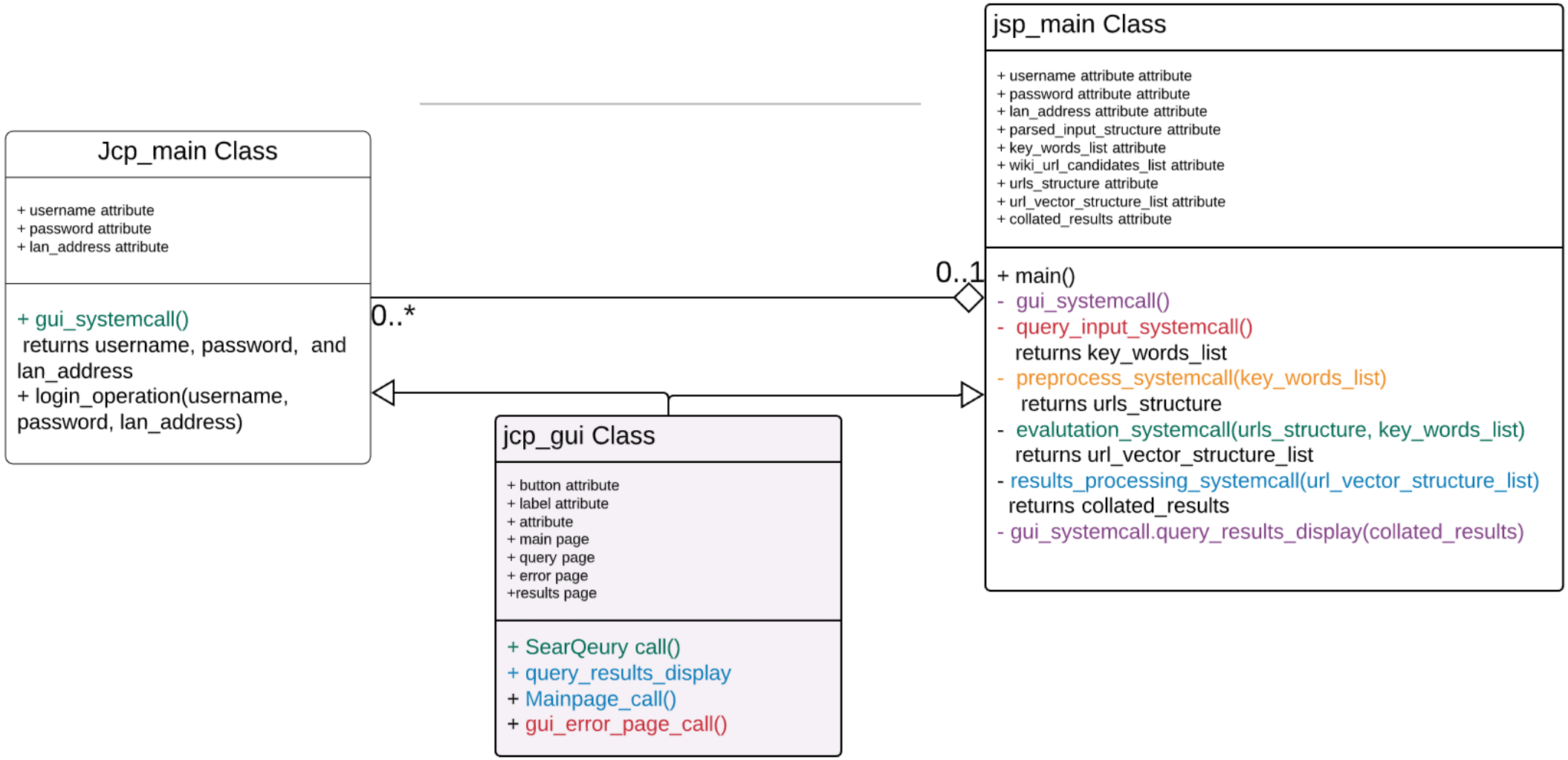
Personal information or key words in HTTP GET request usage

Making it impossible to collect user searches

HOW DO WE PROTECT PRIVACY?

- User Selectable Option: Dummy Searches
  - Every search also spawns two random searches
  - There is only a 1 in $\frac{(3n)!}{(2n)!}$ chance of guessing the correct permutation of keywords
  - In a query of n many keywords

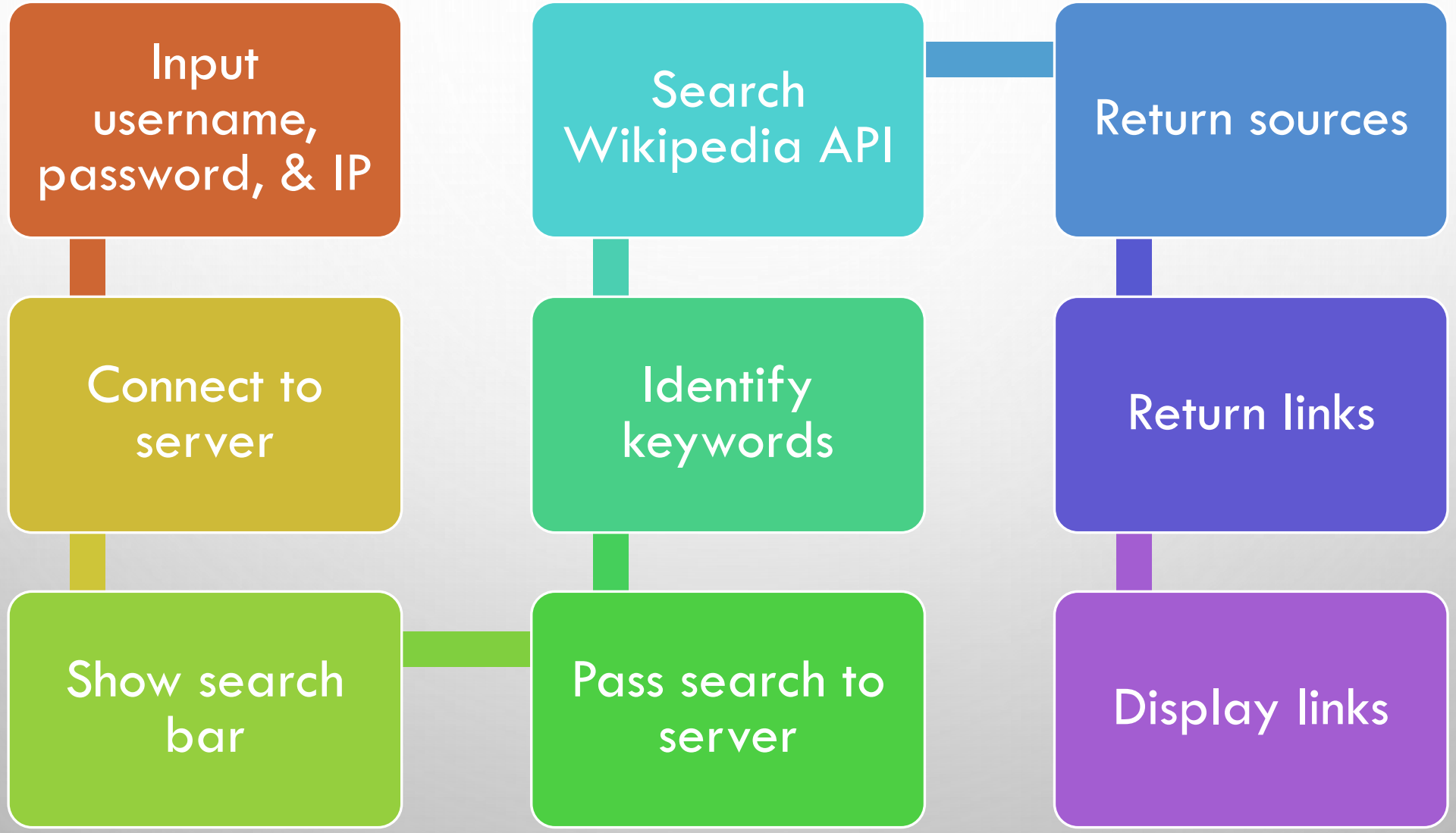

Number of Possible Permutations of Keywords
350,000,000
300,000,000
250,000,000
200,000,000
150,000,000
100,000,000
50,000,000
-
0
1
2
3
4
5
6
7
8

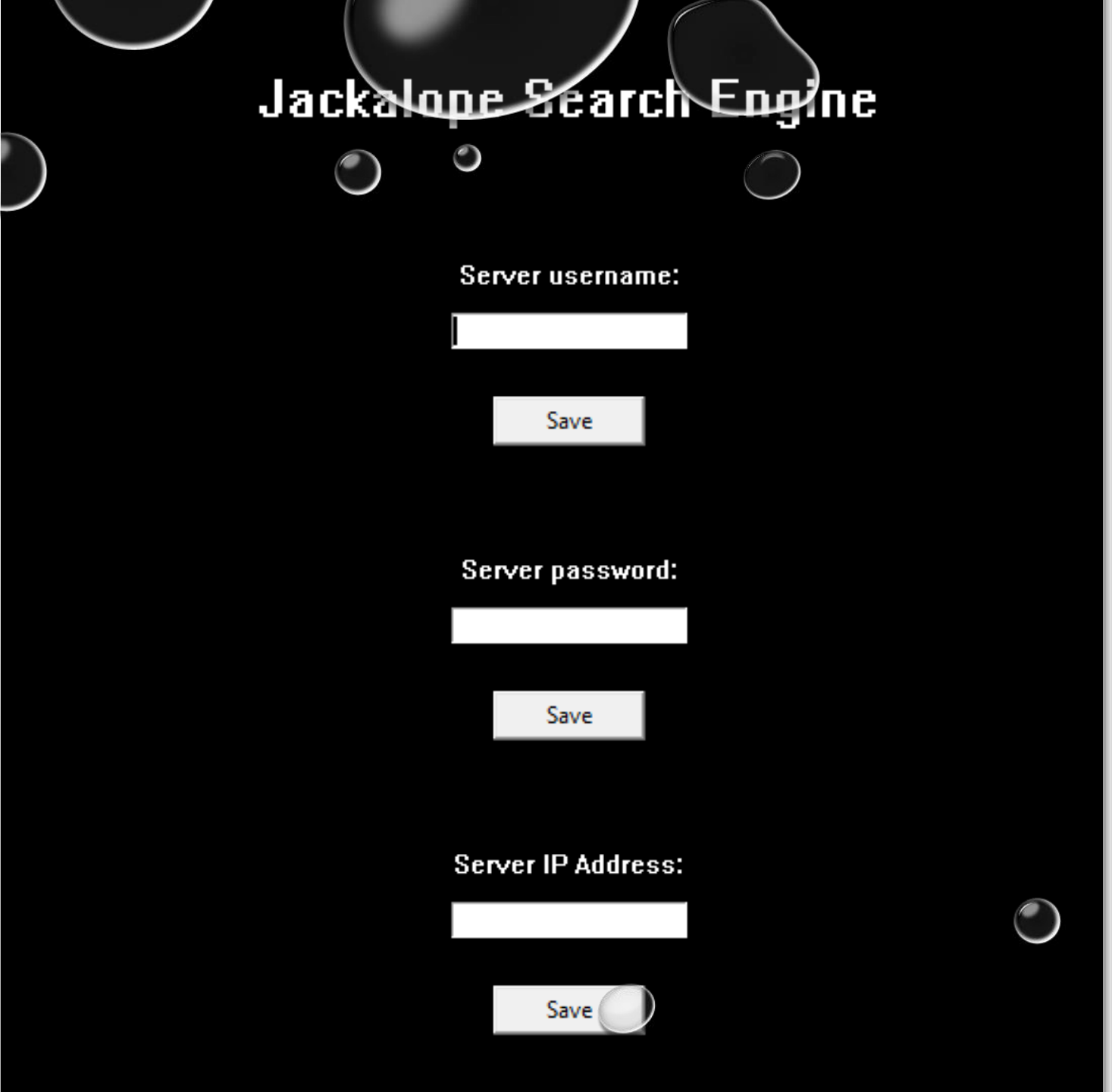


CLASS DIAGRAM

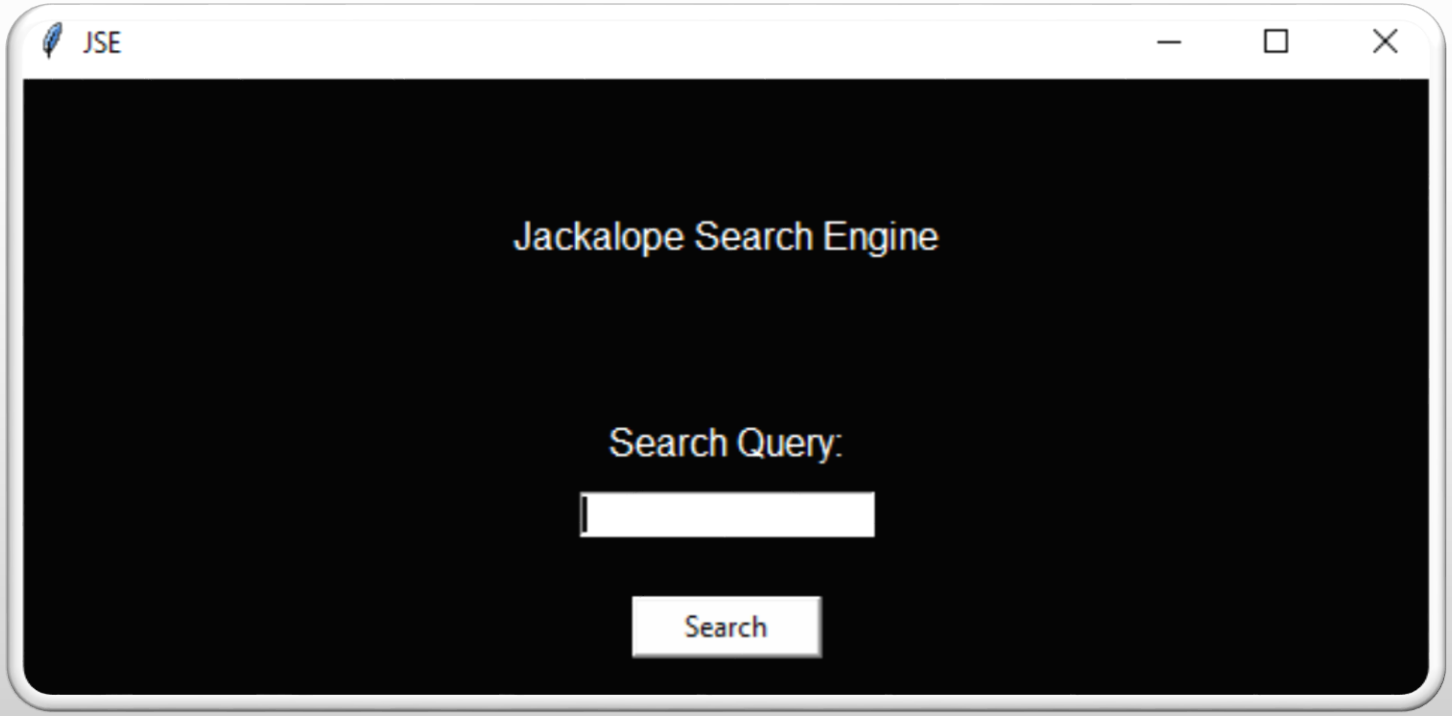
USE CASE DIAGRAM

SEQUENCE DIAGRAM

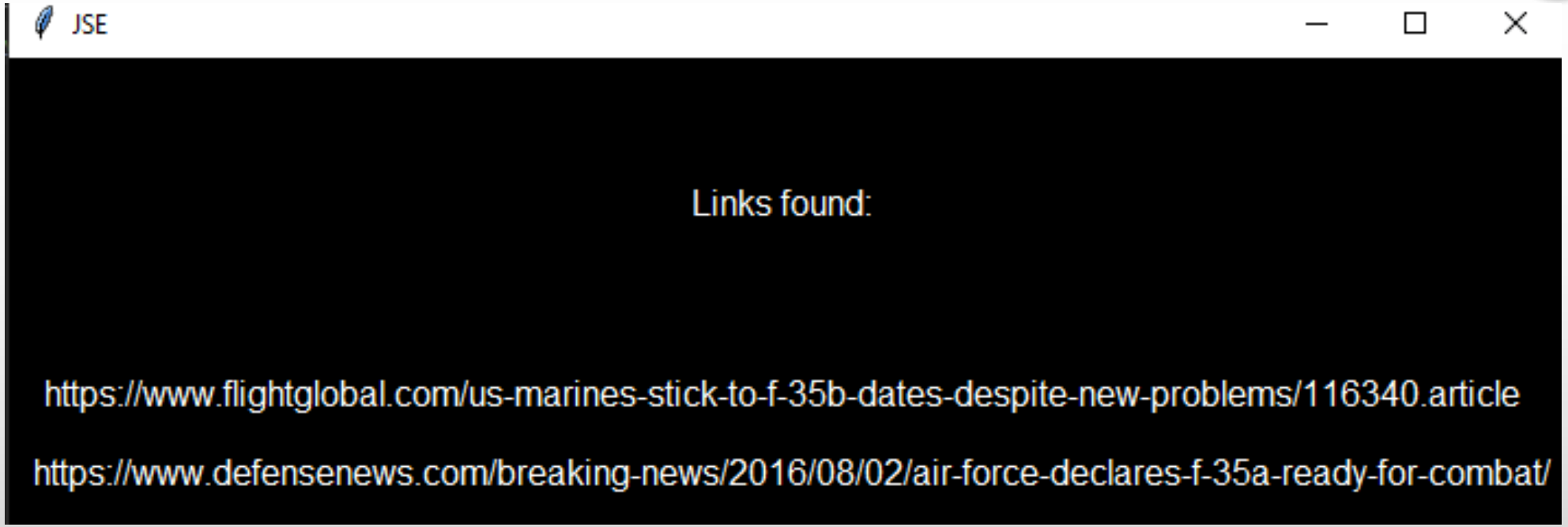




INITIAL INTERFACE



SEARCH BAR



SEARCH RESULTS

IMPLEMENTATION PLAN: CLIENT PROGRAM

Classes

- jcp_main
- jcp_gui

Windows Subsystem for Linux

Dependencies

- SSH communication protocol
- SSHPass utility
- X Window System

IMPLEMENTATION PLAN: SERVER PROGRAM

Classes

- jsp_main
- jsp_gui
- query_input
- preprocess
- multithread
- evaluation
- results_processing

CentOS 7.7 server

Dependencies

- Anaconda
- Clingo Potassco Answer Set Solving System
- SpaCy
- Scrapy

QUESTIONS || THANK YOU