CptS 415
ACNH Search Engine Project

By Team ATK

Overview

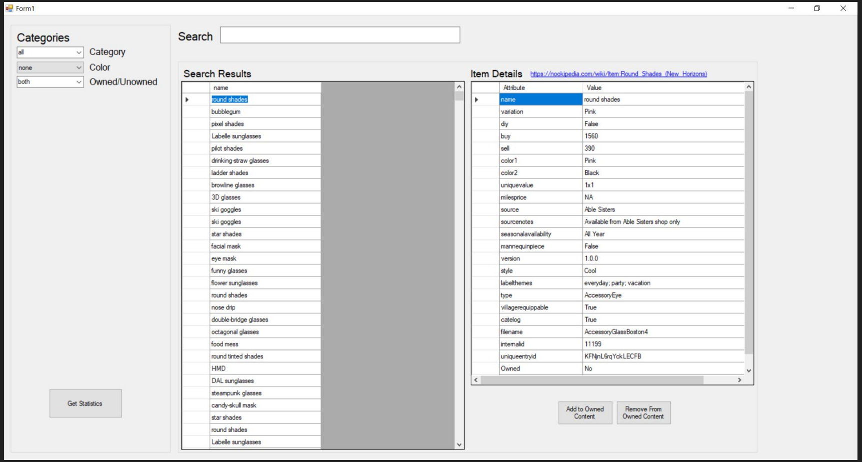
- Introduction
- Contributions
- Demo
- Results
- Future Work

Problem Statement

The only way to search for ACNH content is looking at nookipedia and making a general search for the name of the content/content type. There is no way to make more detailed searches that allow a user to include filters for what they are looking for. Also, there is no way to keep track of owned items outside of going into your game and checking to see everything you may own. Lastly, there is no way to get statistics based on what content is owned as there is no way to keep track of what content is owned. Our team aims to develop an application that provides these nonexistent features.

Project Description

The ACNH Search Engine is an application that allows the user to make detailed searches through a ACNH content database, keep track of owned items, and get statistics based on what items are owned



Form1

Categories

all Category

none Color

both Owned/Unowned

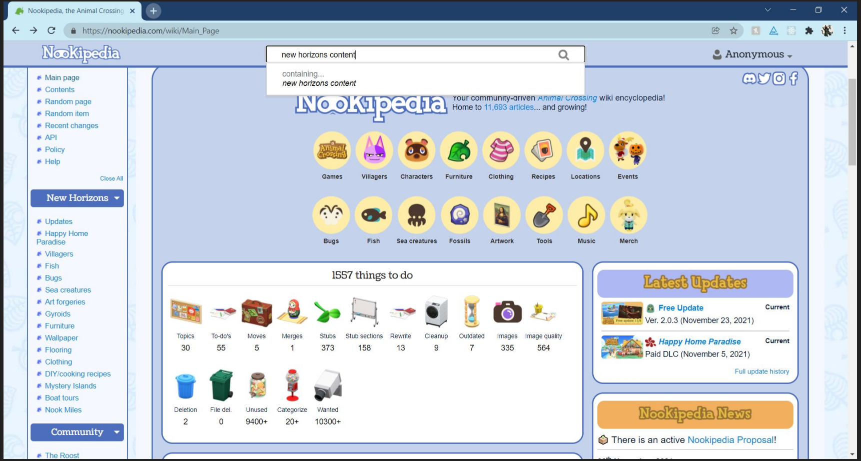
Search

Search Results

name
round shades
bubblegum
pixel shades
Labelle sunglasses
pilot shades
drinking-straw glasses
ladder shades
browline glasses
3D glasses
ski goggles
ski goggles
star shades
facial mask
eye mask
funny glasses
flower sunglasses
round shades
nose drip
double-bridge glasses
octagonal glasses
food mess
round tinted shades
HMD
DAL sunglasses
steampunk glasses
candy-skull mask
star shades
round shades
Labelle sunglasses

Item Details https://nookipedia.com/wiki/Item:Round_Shades_(New_Horizons)

Attribute	Value
name	round shades
variation	Pink
diy	False
buy	1560
sell	390
color1	Pink
color2	Black
uniquevalue	1x1
milesprice	NA
source	Able Sisters
sourcenotes	Available from Able Sisters shop only
seasonalavailability	All Year
mannequinpiece	False
version	1.0.0
style	Cool
labelthemes	everyday; party; vacation
type	AccessoryEye
villagerequippable	True
catelog	True
filename	AccessoryGlassBoston4
internalid	11199
uniqueentryid	KFNjnL6rqYckLECFB
Owned	No



https://nookipedia.com/wiki/Main_Page

new horizons content

containing...
new horizons content

Your community-driven *Animal Crossing* wiki encyclopedia!
Home to 11,693 articles... and growing!

1557 things to do

Topics	To-do's	Moves	Merges	Stubs	Stub sections	Rewrite	Cleanup	Outdated	Images	Image quality
30	55	5	1	373	158	13	9	7	335	564

Deletion	File del.	Unused	Categorize	Wanted
2	0	9400+	20+	10300+

Latest Updates

Free Update Current
Ver. 2.0.3 (November 23, 2021)

Happy Home Paradise Current
Paid DLC (November 5, 2021)

Full update history

Nookipedia News

There is an active Nookipedia Proposal!

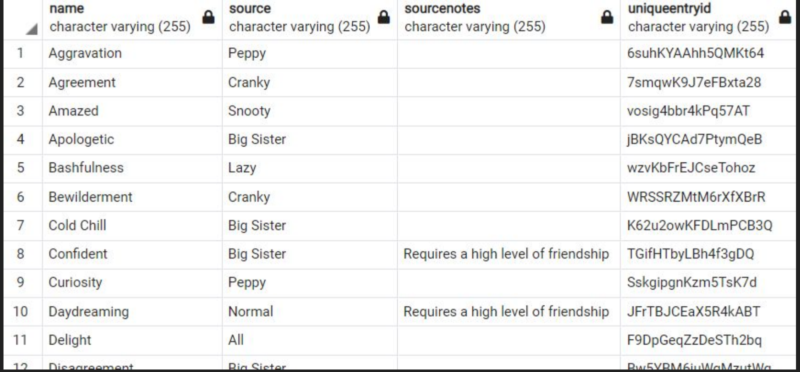
Data Set and Data Model

Data Set - Animal Crossing New Horizons Catalog

- 4 MB data set that contains information on all the content within ACNH
- 16,145 tuples the data set

Data Model - Row-Oriented Relational Data Model

- Data organized by rows
- Efficient in reading and writing rows



	name character varying (255)	source character varying (255)	sourcenotes character varying (255)	uniqueentryid character varying (255)
1	Aggravation	Peppy		6suhKYAAhh5QMKt64
2	Agreement	Cranky		7smqwK9J7eFBxta28
3	Amazed	Snooty		vosig4bbr4kPq57AT
4	Apologetic	Big Sister		jBKsQYCAd7PtymQeB
5	Bashfulness	Lazy		wzvKbFrEJCseTohoz
6	Bewilderment	Cranky		WRSSRZMtM6rXfXBrR
7	Cold Chill	Big Sister		K62u2owKFDLmPCB3Q
8	Confident	Big Sister	Requires a high level of friendship	TGifHTbyLBh4f3gDQ
9	Curiosity	Peppy		SskgipgnKzm5TsK7d
10	Daydreaming	Normal	Requires a high level of friendship	JFrTBJCEaX5R4kABT
11	Delight	All		F9DpGeqZzDeSTh2bq
12	Disagreement	Big Sister		Rw5YRM6iuWgMzutWg

Contributions - Alex

- Schema
    - Made the CREATE TABLE statements
- Data parser
    - Written in Python. INSERTED all data into proper tables
- GUI Application
    - Written in C#
    - Created UI Views, interactions, and flow
    - Filtering by category (SQL query)

Contributions - Trevor

- Searching and quarries
  - Creating sql queries to parse through the records
  - Creating the sql queries for finding tables and columns
- Creating index for faster searches
  - Testing indexes
  - Creating indexes
- Filtering
  - Added filtering options

Contributions - Kristian

- Owned content handling
  - XML file generation, loading, and updating
- Stats generation
  - txt file generation and updating
  - Calculations based on owned items
- Filtering improvements
  - Enables/Disables certain combo boxes if certain other filters are selected
  - Automatically apply filters to search when a selection is made
  - Owned/Unowned content filter added

Demo

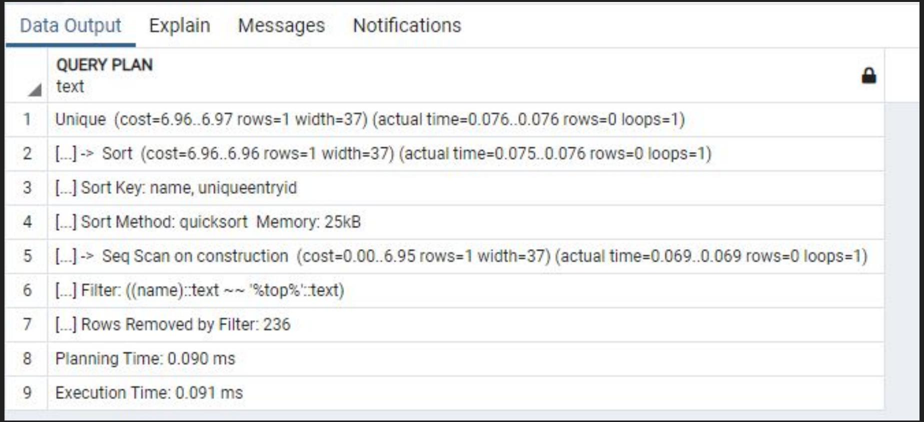
Results

Searching

- Due to the smaller size of the individual tables it was hard to get the indexes to be selected
- In theory the B+tree should have sped up the search progress as by using binary search

Accuracy

- Both algorithms proved to be 100% accuracy



```
QUERY PLAN
text
Unique  (cost=6.96..6.97 rows=1 width=37) (actual time=0.076..0.076 rows=0 loops=1)
[...] ->  Sort  (cost=6.96..6.96 rows=1 width=37) (actual time=0.075..0.076 rows=0 loops=1)
[...] Sort Key: name, uniqueentryid
[...] Sort Method: quicksort  Memory: 25kB
[...] ->  Seq Scan on construction  (cost=0.00..6.95 rows=1 width=37) (actual time=0.069..0.069 rows=0 loops=1)
[...] Filter: ((name)::text ~~ '%top%'::text)
[...] Rows Removed by Filter: 236
Planning Time: 0.090 ms
Execution Time: 0.091 ms
```

Future Work

- If more items and potentially different games are added to the dataset…
- If this application evolved to contain user accounts and friends....
- If the dataset grew with gigabytes of information...
    - Parallelization.
        - MapReduce for finding items that are similar to each other
        - MapReduce for finding how finding items in a certain price range
        - MapReduce for filtering items with more complexity

Questions?