FREE APIS: THE NEXT GENERATION

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BIG WORD ALERT!
## Essex County

97.6% Reporting

<table>
<thead>
<tr>
<th>Candidate</th>
<th>Percentage</th>
<th>Votes</th>
</tr>
</thead>
<tbody>
<tr>
<td>H. Clinton</td>
<td>77.1%</td>
<td>231,031</td>
</tr>
<tr>
<td>D. Trump</td>
<td>20.7%</td>
<td>62,059</td>
</tr>
<tr>
<td>G. Johnson</td>
<td>1.0%</td>
<td>3,028</td>
</tr>
<tr>
<td>J. Stein</td>
<td>0.9%</td>
<td>2,830</td>
</tr>
<tr>
<td>D. Castle</td>
<td>0.1%</td>
<td>277</td>
</tr>
<tr>
<td>R. De La Fuente</td>
<td>0.1%</td>
<td>295</td>
</tr>
<tr>
<td>A. Kennedy</td>
<td>0.0%</td>
<td>123</td>
</tr>
<tr>
<td>G. La Riva</td>
<td>0.0%</td>
<td>72</td>
</tr>
<tr>
<td>M. Moorehead</td>
<td>0.0%</td>
<td>93</td>
</tr>
<tr>
<td>Party</td>
<td>Candidate</td>
<td>Vote %</td>
</tr>
<tr>
<td>----------------------</td>
<td>-------------------------------</td>
<td>--------</td>
</tr>
<tr>
<td>Republican</td>
<td>Rodney Frelinghuysen <strong>Incumbent</strong></td>
<td>58%</td>
</tr>
<tr>
<td>Democratic</td>
<td>Joseph Wenzel</td>
<td>38.9%</td>
</tr>
<tr>
<td>Financial Independence</td>
<td>Thomas DePasquale</td>
<td>2.1%</td>
</tr>
<tr>
<td>Libertarian</td>
<td>Jeff Hetrick</td>
<td>1%</td>
</tr>
</tbody>
</table>

**Total Votes** 334,992

*Source: New Jersey Division of Elections*
Traveling Salesperson Problem

Given a list of points and the distances between each pair of points, what is the shortest possible route that visits each city and returns to the origin point?
20 (Canvassers) * 7 (Minutes a day saved) * 5 (Days a week we canvass) * 6 (weeks)

4200 Minutes
70 Hours
3 Extra Days of Canvassing
# Alaska House of Representatives
## District 1 Results

<table>
<thead>
<tr>
<th>Candidate</th>
<th>%</th>
<th>Votes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bart Lebon (R)</td>
<td>49.9%</td>
<td>2,663</td>
</tr>
<tr>
<td>Kathryn Dodge (D)</td>
<td>49.8%</td>
<td>2,662</td>
</tr>
<tr>
<td>Write-in votes</td>
<td>0.3%</td>
<td>17</td>
</tr>
<tr>
<td>Candidate</td>
<td>%</td>
<td>Votes</td>
</tr>
<tr>
<td>----------------------------</td>
<td>------</td>
<td>---------</td>
</tr>
<tr>
<td>Mikie Sherrill (D)</td>
<td>56.8</td>
<td>183,684</td>
</tr>
<tr>
<td>Jay Webber (R)</td>
<td>42.1</td>
<td>136,322</td>
</tr>
<tr>
<td>Robert Crook</td>
<td>0.7</td>
<td>2,182</td>
</tr>
<tr>
<td>Ryan Martinez (Libertarian)</td>
<td>0.4</td>
<td>1,386</td>
</tr>
</tbody>
</table>
Goals of this Application

- Allow users to send in a list of addresses into my application.
- Allow them to choose a specific starting point.
- Return to the user the list of addresses sorted in the order for them to visit, to optimize time.
88 West Road
697 Ross Corner Road
93 Oak St
33 Apple Way

Calculate Distance Between Each Pair of Points

API
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Application Programming Interface (API)

A set of subroutine definitions, communication protocols and tools for building software.
Client

Server
### Grubhub Menu

#### Sandwiches or Wrap

<table>
<thead>
<tr>
<th>Item</th>
<th>Price</th>
<th>Calories</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2 Turkey with Cheese</td>
<td>$3.48</td>
<td>560 Cal</td>
</tr>
<tr>
<td>1/2 Turkey with Cheese</td>
<td>$4.29</td>
<td>620 Cal</td>
</tr>
<tr>
<td>1/2 Turkey with Cheese</td>
<td>$5.50</td>
<td>720 Cal</td>
</tr>
<tr>
<td>1/2 Turkey &amp; Bacon</td>
<td>$3.98</td>
<td>480 Cal</td>
</tr>
<tr>
<td>Breakfast Cheeseburger</td>
<td>$1.98</td>
<td>370 Cal</td>
</tr>
<tr>
<td>Chicken Wrap</td>
<td>$1.98</td>
<td>280 Cal</td>
</tr>
</tbody>
</table>

#### Salads

<table>
<thead>
<tr>
<th>Item</th>
<th>Size</th>
<th>Calories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ham &amp; Chicken Salad</td>
<td>Full Size</td>
<td>470 Cal</td>
</tr>
<tr>
<td></td>
<td>Half Size</td>
<td>240 Cal</td>
</tr>
<tr>
<td>Bacon &amp; Chicken Salad</td>
<td>Full Size</td>
<td>500 Cal</td>
</tr>
<tr>
<td></td>
<td>Half Size</td>
<td>280 Cal</td>
</tr>
<tr>
<td>Chicken Caesar</td>
<td>Full Size</td>
<td>710 Cal</td>
</tr>
<tr>
<td></td>
<td>Half Size</td>
<td>420 Cal</td>
</tr>
</tbody>
</table>

#### Sides

<table>
<thead>
<tr>
<th>Item</th>
<th>Calories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sour Cream &amp; Cheese Baked Potato</td>
<td>500 Cal</td>
</tr>
<tr>
<td>Bacon &amp; Cheese Baked Potato</td>
<td>470 Cal</td>
</tr>
</tbody>
</table>

#### Dr. Pulp Two

Choose any 1/2 Size salad and 1 of these options: $5.78

- Chicken Wrap
- Small Sidekicks
- Bacon & Cheese Baked Potato
- Small Chilli
- Sour Cream & Cheese Baked Potato

2,000 calories a day is used for general nutrition advice, but calorie needs vary. Additional nutrition information available upon request.
Calculate Distance Between Each Pair of Points

88 West Road
697 Ross Corner Road
93 Oak St
33 Apple Way

697 Ross Corner Road
33 Apple Way
93 Oak St
88 West Road
The freedom to run the program as you wish, for any purpose (freedom 0).

The freedom to study how the program works, and change it so it does your computing as you wish (freedom 1). Access to the source code is a precondition for this.

The freedom to redistribute copies so you can help others (freedom 2).

The freedom to distribute copies of your modified versions to others (freedom 3). By doing this you can give the whole community a chance to benefit from your changes. Access to the source code is a precondition for this.

Address 1: 13 Gore Rd. Lyman, ME 04076
Address 2: 123 Bridge St Waterboro, ME 04061
Address 3: 58 West St. Alfred, ME 04065
Address 4: 697 Ross Corner Rd. Shapleigh, ME 04174
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Frameworks & Programming Languages

- Programming Language - The vocabularies developers use to build applications and tell a piece of software what to do, how to do it, and when to do it.
  - *E.g. JavaScript*

- Framework - The foundation on which software developers can build programs for specific platforms.
  - *Frameworks are written in a programming language.*
  - *E.g. React*

https://www.stackoverflowbusiness.com/blog/the-difference-between-programming-frameworks-and-
const App = () => {
  
  <CardGroup>
    
  <Card
    title="Design System with Figma"
    label="21AUG"
    caption="10 sections"
    image="dsf-background.jpg"
  />

  <Card
    title="React for designers"
    label="24JUL"
    caption="12 sections"
    image="rd-background.jpg"
  />

  </CardGroup>

  export default App;
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Transpiling

The process of taking the source code written in one language and rewriting it into another language.

https://stackoverflow.com/questions/44931479/compiling-vs-transpiling
A JavaScript script is not trivial if...

- It is referred to as an external script (from another page).
- It declares an array more than 50 elements long.
- It defines a named entity (function or method) that calls anything other than a primitive.
- It defines a named entity with more than three conditional constructs and loop construction.
- Code outside of named definitions calls anything but primitives and functions defined further up in the page.
- Code outside of named definitions contains more than three conditional constructs and loop construction, total.
- It does Ajax calls.
- It alters the DOM.
- It uses dynamic JavaScript constructs that are difficult to analyze without interpreting the program.

LibreJS
Free JavaScript in your browser

https://www.gnu.org/software/librejs/
Preferences
- Bracket matching
- Show whitespace characters: None
- Display variable values inline while debugging
- Enable CSS source maps
- Default indentation: 4 spaces

Performance
- Flamechart mouse action: Zoom
- High resolution CPU profiling
- Show native functions in JS Profile
- Hide chrome frame in Layers view

Debugger
- Disable JavaScript
- Disable async stack traces
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Development Kit

- a set of tools, libraries, relevant documentation, code samples, processes, and or guides that allow developers to create software applications on a specific platform.
OPEN JDK / Oracle JDK
Oracle’s JDK
- *Developers can use it freely in development and testing.*
- *If you use it in production, you must pay for it.*

Open JDK
- *Free Software*
- **Oracle’s JDK**
  - *If you are using Oracle’s JDK, you will get updates and supports.*

- **Open JDK**
  - *Oracle will not provide any new updates to past versions.*
Java SE 10 (JDK 10)
Your Maps API Implementation must be accessible to the general public without charge and must not require a fee-based subscription or other fee-based restricted access.

You must conspicuously display the "powered by Google" attribution (and any other attribution(s) required by Google in the Maps APIs Documentation) on or adjacent to the relevant Service search box and Google search results.
MY APPLICATION
MY APPLICATION
MY APPLICATION
Google Analytics
My Licensing
My Licensing

You cannot use my program to benefit Republican candidates or the Republican Party Committee
My Licensing

You cannot use this program to benefit Republican candidates or the Republican Party Committee
Ensuring your applications provide free access to their APIs is critical for the development of free software. If you are using an API that is not a free, no one can use your program freely. Since there are so many interconnected devices, it is easy for your software to get "infected". To prevent it from "infecting" other people, you must take responsibility and do an audit through your integrations.

It's not enough to provide access to code. You must provide it in the original framework that you wrote it in, not a transpiled version that is obscured.

It is more important to protect a user’s freedom rather than protecting how your application will be used.
Questions?