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CAB301 Assignment 1

CAB301 – Algorithms and Complexity

Software Application for a Tool Library

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## Introduction

The purpose of this app is to view and analyse ‘happiness survey’ data drawn from a database exposed via a REST API. This data is collected from people in over 150 countries. Each variable measured reveals a population weighted average score on a scale running from 0 to 10 that is tracked over time and compared against other countries. It contains 935 records from surveys conducted from 2015 to 2020. There are different endpoints to retrieve different subsets of this data, some will require authentication through a registration system.

The app is comprised of three main modules, the Rankings module, the Factors module and the Authentication module. Each of the endpoints have been used, but some have been collated together to smoothen the user experience when interacting with the data. Using the ag-grid table API to retrieve displayed data to update graphs dynamically has led to a very responsive app which allows seamless access to all end points, using all the API parameters provided.

## Design and Analysis of Algorithms

#### Algorithm Design

Allowing for unauthenticated access, the Rankings module displays all of the data, but allows the user to filter server side by Year and Country, through search and drop down boxes. The search functionality is improved with the addition of auto-suggestions, using data retrieved from the countries endpoint. Users are also able to filter/search/sort client side with the inbuilt ag-grid functionality. Pagination has been included to manage the sometimes large amounts of return data.

#### Algorithm Analysis

Allowing for unauthenticated access, the Rankings module displays all of the data, but allows the user to filter server side by Year and Country, through search and drop down boxes. The search functionality is improved with the addition of auto-suggestions, using data retrieved from the countries endpoint. Users are also able to filter/search/sort client side with the inbuilt ag-grid functionality. Pagination has been included to manage the sometimes large amounts of return data.

## Software Test plan and results

## References

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<https://stackoverflow.com/questions/64071586/ag-grid-react-forgets-gridapi-after-it-has-been-set>