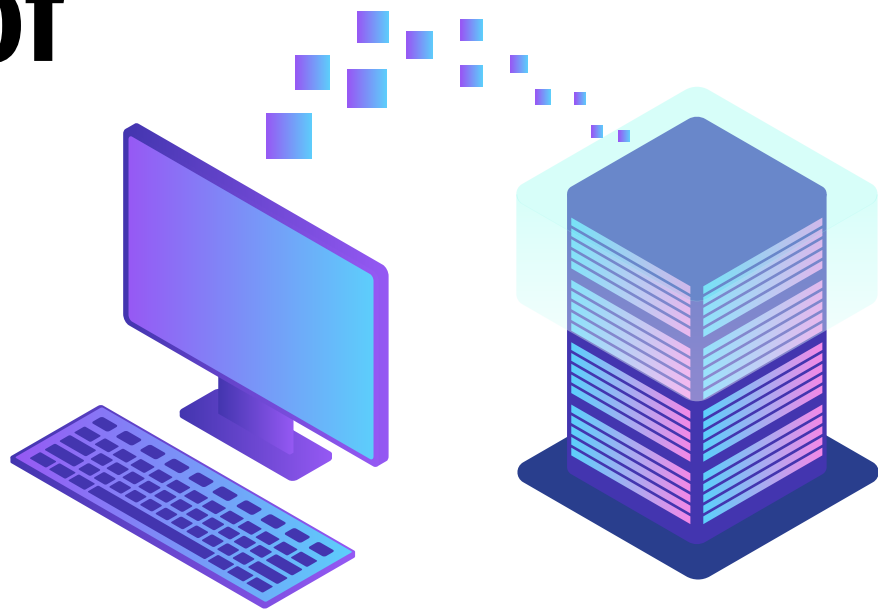


COMP90024 Team9 Project2

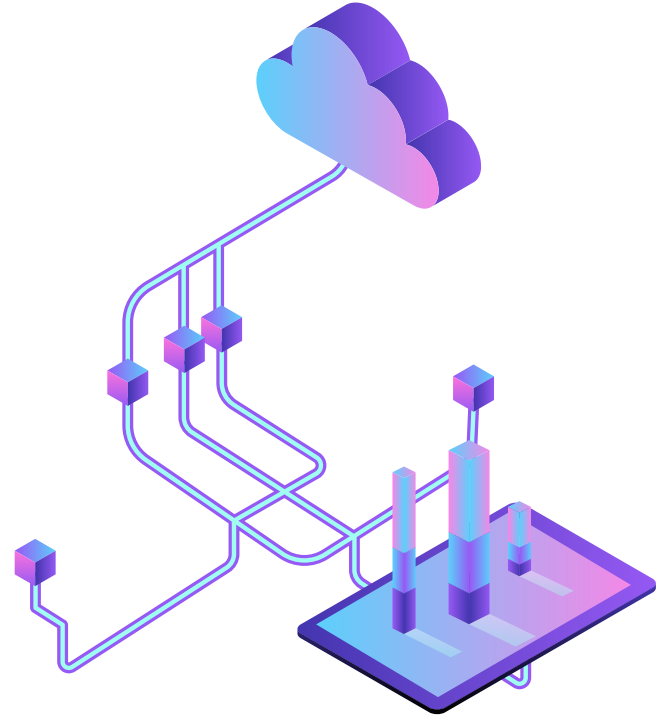
The liveability of Melbourne

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Introduction

The purpose of this study is to investigate liveability of Melbourne via building a cloud based system to harvest and assess the sentiment class of the Twitter data about these three scenarios from Melbourne on the UniMelb Research Cloud (MRC), analyze the Twitter data with the data from the Australian Urban Research Infrastructure Network (AURIN) platform in CouchDB database, then, visualizing the results in a front-end web application.



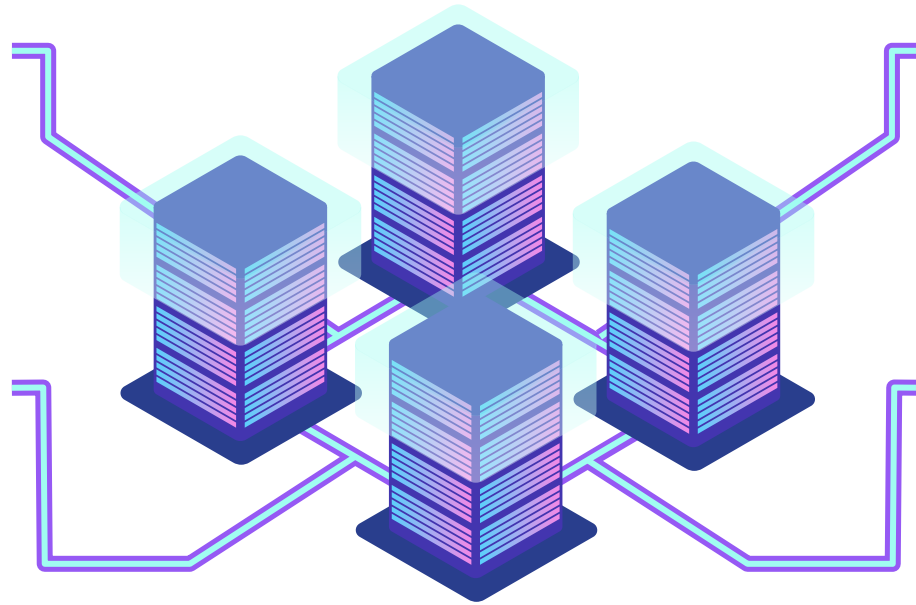
Content

1. System Architecture

2. System Design

3. Scenario Discussion

4. Data Visualization
& Analysis



1.System Architecture

1
Resource Allocation

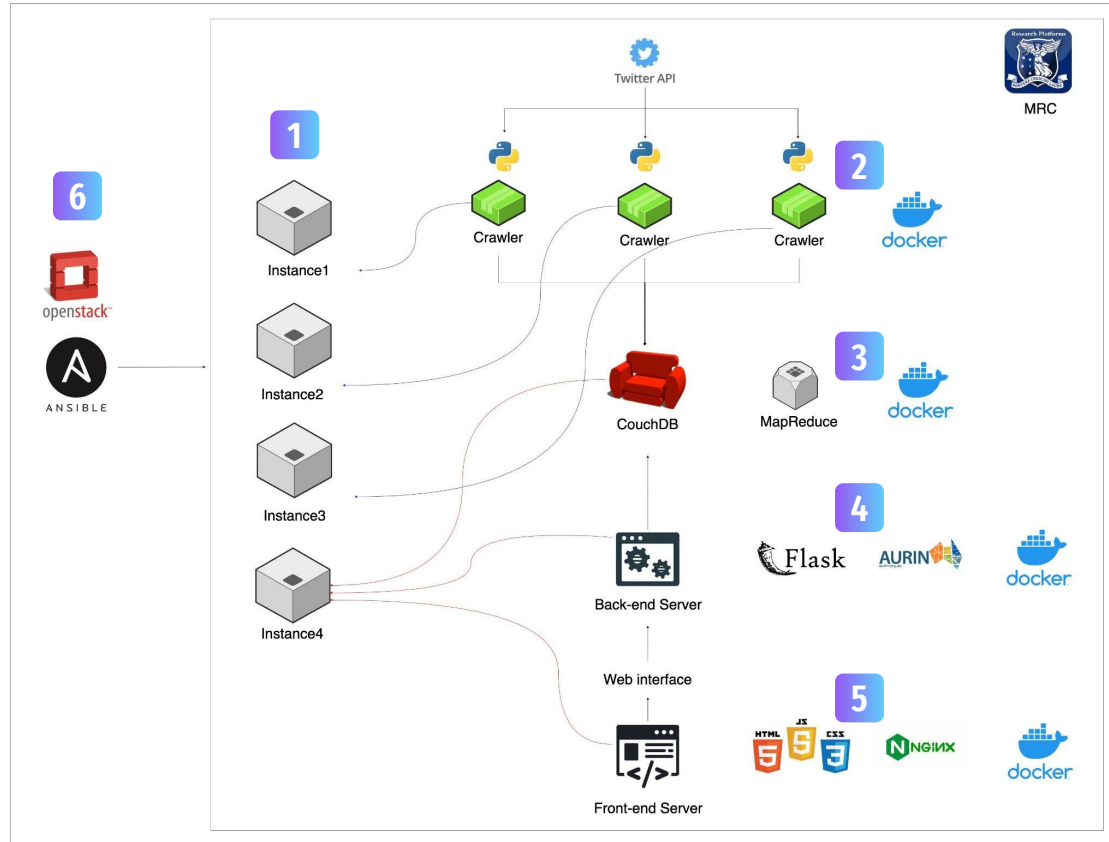
2
Crawlers

3
CouchDB

4
Back-end Server

5
Front-end Server

6
Ansible Automation



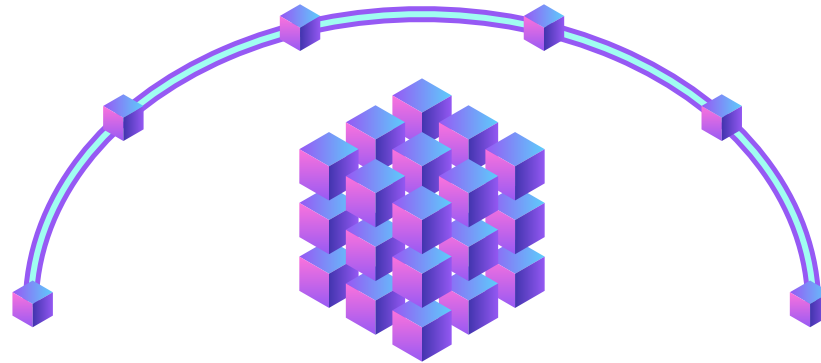
MRC Resource allocation

Instance	Flavor	Functionality	Volume
Instance 1	uom.mse.2c9g	Crawler(Data harvesting)	50 GB
Instance 2	uom.mse.2c9g	Crawler(Data harvesting)	50 GB
Instance 3	uom.mse.2c9g	Crawler(Data harvesting)	50 GB
Instance 4	uom.mse.2c9g	Docker and CouchDB deploying, Front-end and Back-end	200 GB

2. System Design Detail

2.How to retrieve data to the front-end?

1.How to remove duplicated tweets?



3.Which API we used in this system?

3. Scenario Discussion

Scenario 1

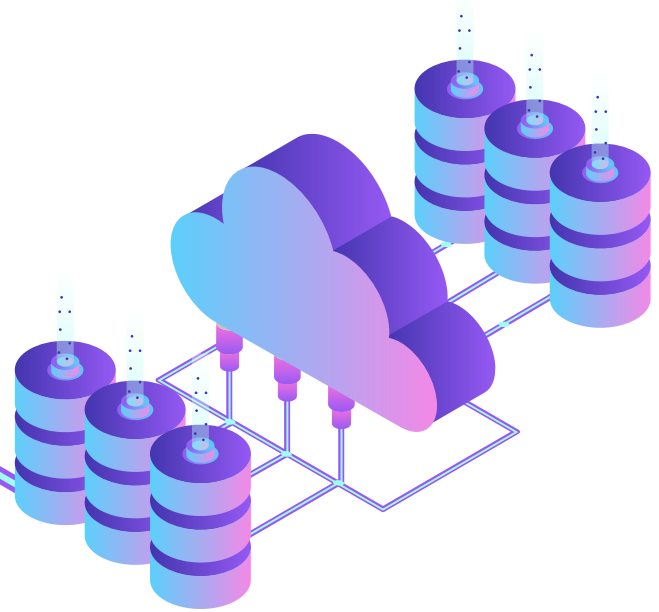
Whether the number of employed people in Melbourne on AURIN is positively correlated with the number of tweets that talk about recruitment towards a positive attitude.

Scenario 2

The correlation between the number of graduate students and the number of tweets with positive attitudes towards education.

Scenario 3

The relationship between the number of languages used in each suburb and the number of people whose salary reached median employment income.



4. Data Visualization & Analysis



Web App Link: <http://172.26.132.76:3000/>

1 Interactive maps

To show the population distribution of each suburb.

2 Histograms

To reveal the data from tweets analysis.

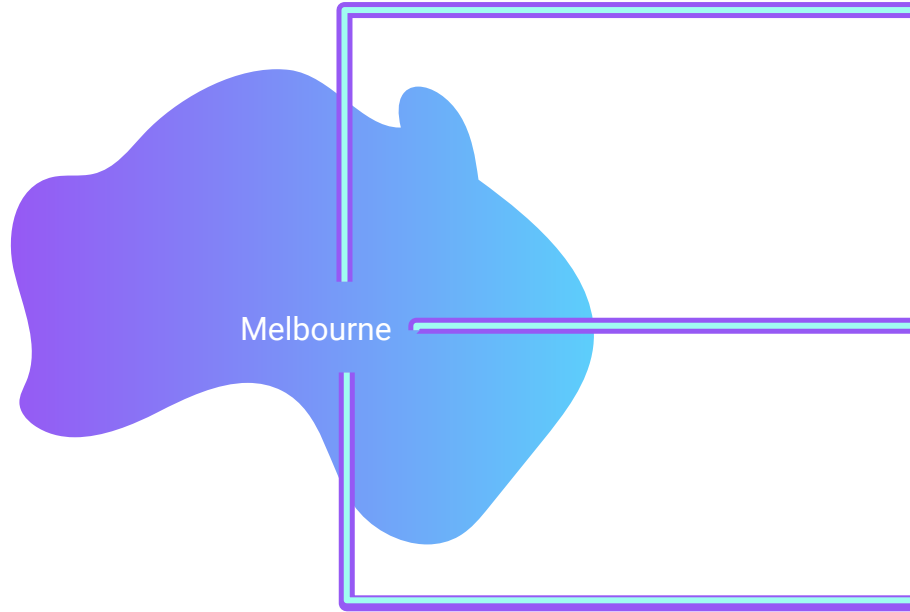
3 Pie charts

To display the data from AURIN we selected.

4 Linear Regression

To verify the hypothetical correlation for each suburb.

Conclusion



For scenario 1

The number of recruitment tweets towards a positive attitude is positively correlated with the number of employed people from AURIN.

For scenario 2

The correlation between the number of tweets with positive attitudes towards education is positively correlated with the number of graduate students from AURIN.

For scenario 3

The correlation between the number of languages used is positively correlated with the number of people whose salary reached median employment income from AURIN for the given suburbs in Melbourne.



Thank you for watching!

Team 9

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