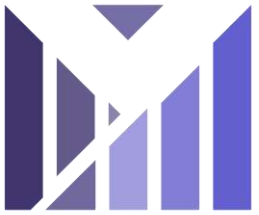
CDAP | Project Proposal Presentation

# AssembleMe



AssembleMe

## ARTIFICIAL INTELLIGENCE BASED PERSONAL COMPUTER PARTS ASSEMBLING ASSISTANT

Group : 19-069

# OUR TEAM

Supervisor :
Prof. Koliya Pulasinghe

Team :


H.K.S.P. Gunadasa

IT16010390


Sewwandi E.D.D.

IT15146816


M.A.V.L. Gunathilaka

IT16055186


Tharaka K.K.S.

IT16054578

# AGENDA

- ❑ Introduction
- ❑ Research Problem
- ❑ Research Gap
- ❑ Solution
  - High Level System Diagram
  - Assemble Personal Computer According to Game Requirement
  - Facebook Comments Analysis
  - Price Comparison and Optimization
  - Laptop Comparison
- ❑ Work Breakdown Structure
- ❑ Gantt Chart
- ❑ References

# INTRODUCTION

- Globally Faced issue.
- Affects different age gaps.
- Both IT experts and Non – IT experts are affected.
- Conventional methods are used. Namely,
  - Using Internet.(E.g. : websites, YouTube)
  - Inquire from experts.
  - Seller recommendations.

# RESEARCH PROBLEM

- Difficulty in finding compatible PC parts.
- Users have limited technical knowledge.
- Difficult to find PC parts matching the Gaming requirements.
- Limited sources to find best products for reasonable prices.
- Necessity to view analyzed customer comments
- Need to compare laptops and select the best one.


Image source : http://www.pngmart.com/image/87246

# SOLUTION

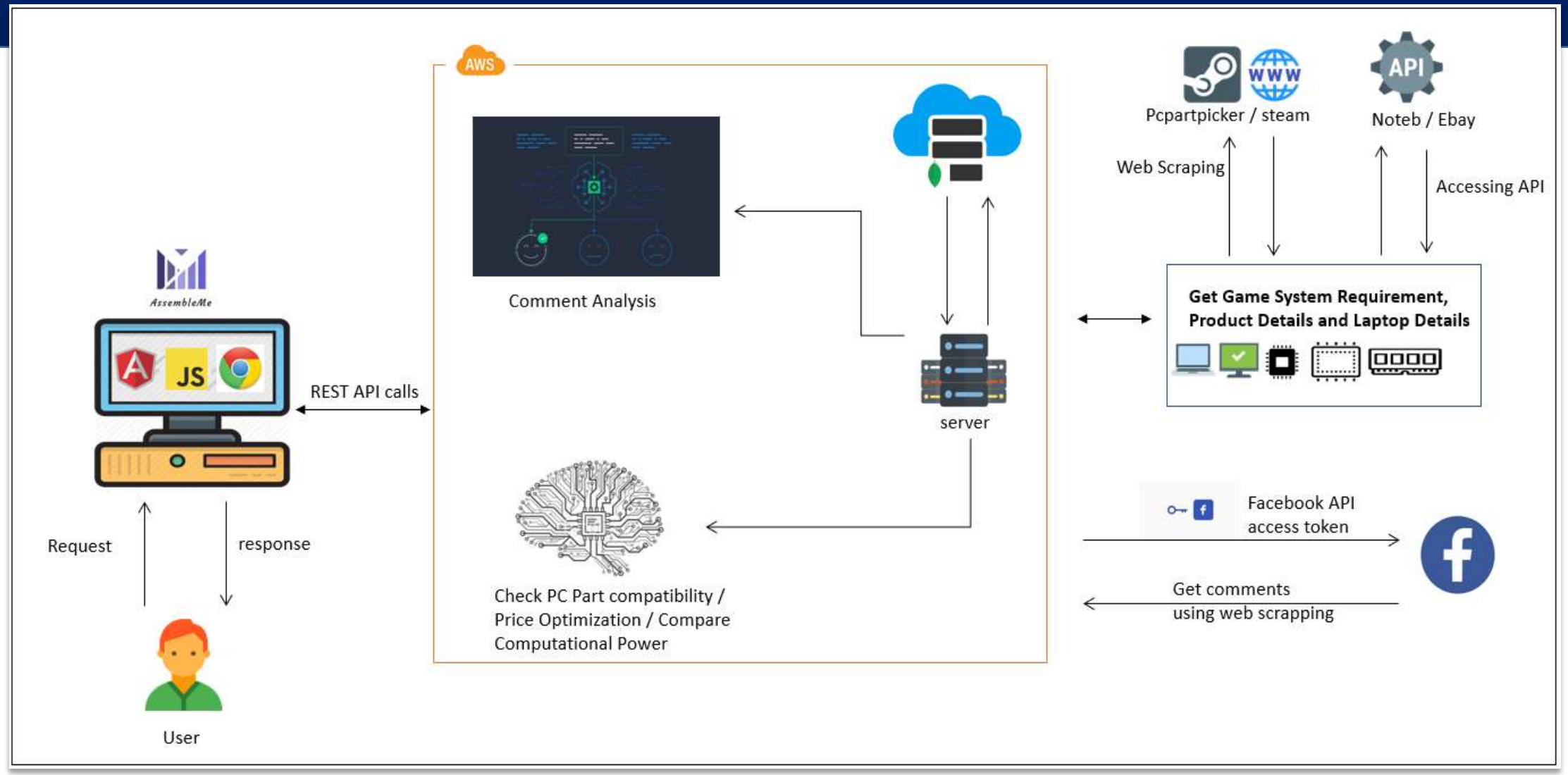
Our solution is based on below four research components.

- ❑ Assemble PC according to game system requirements
- ❑ Facebook Comment Analysis
- ❑ Price Comparison & Optimization
- ❑ Laptops Comparison

# RESEARCH GAP

| Functions | PCPartPicker.com | NewEgg.com | Noteb.com | AssmbleME |
|---|---|---|---|---|
| Select Compatible PC-Parts | ✓ | | | ✓ |
| Build PC according to a System requirement Of a Game | | | | ✓ |
| Display prices and compare of different vendors | ✓ | | | ✓ |
| Analyze Comments and display rating based on that | | | | ✓ |
| Recommends assemble plan according to budget | ✓ | ✓ | | ✓ |
| Recommend the best PC part in a price range | | | | ✓ |
| Notify Price Drops to user | ✓ | ✓ | | ✓ |
| Laptop comparison | | | ✓ | ✓ |
| Recommending the best laptop | | | | ✓ |

# HIGH LEVEL SYSTEM DIAGRAM

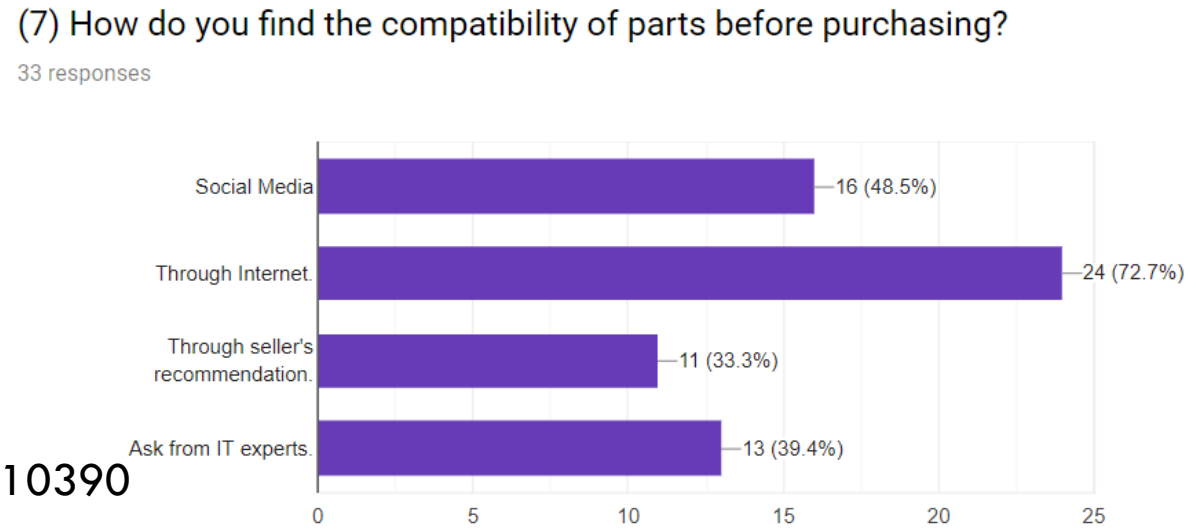


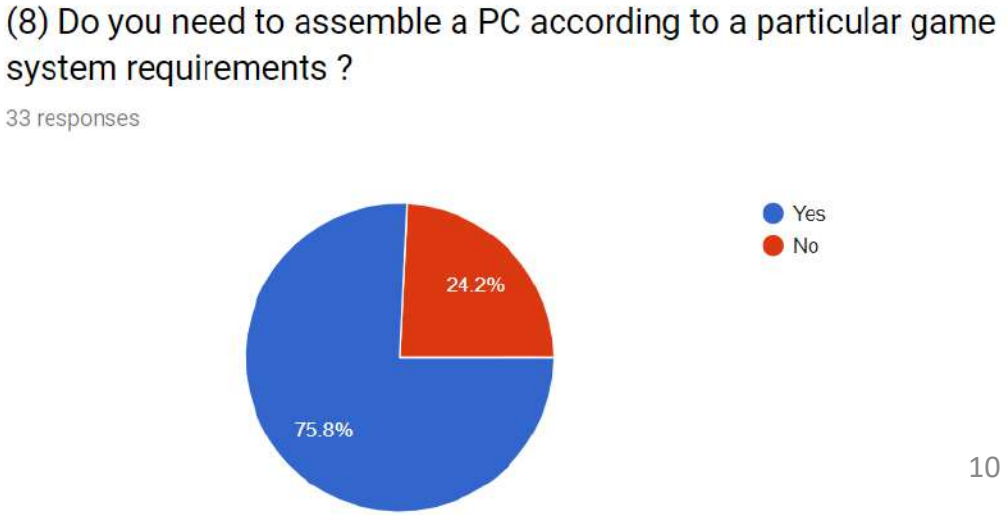
# ASSEMBLE PERSONAL COMPUTER ACCORDING TO GAME SYSTEM REQUIREMENTS

H.K.S.P Gunadasa
IT16010390

# ASSEMBLE PC ACCORDING TO GAME SYSTEM REQUIREMENTS

- Specific Objectives
  - Identify and check compatibility of each computer parts
  - Ability to assemble a pc according to a game system requirement
  - User can ensure the game is working properly on their PC



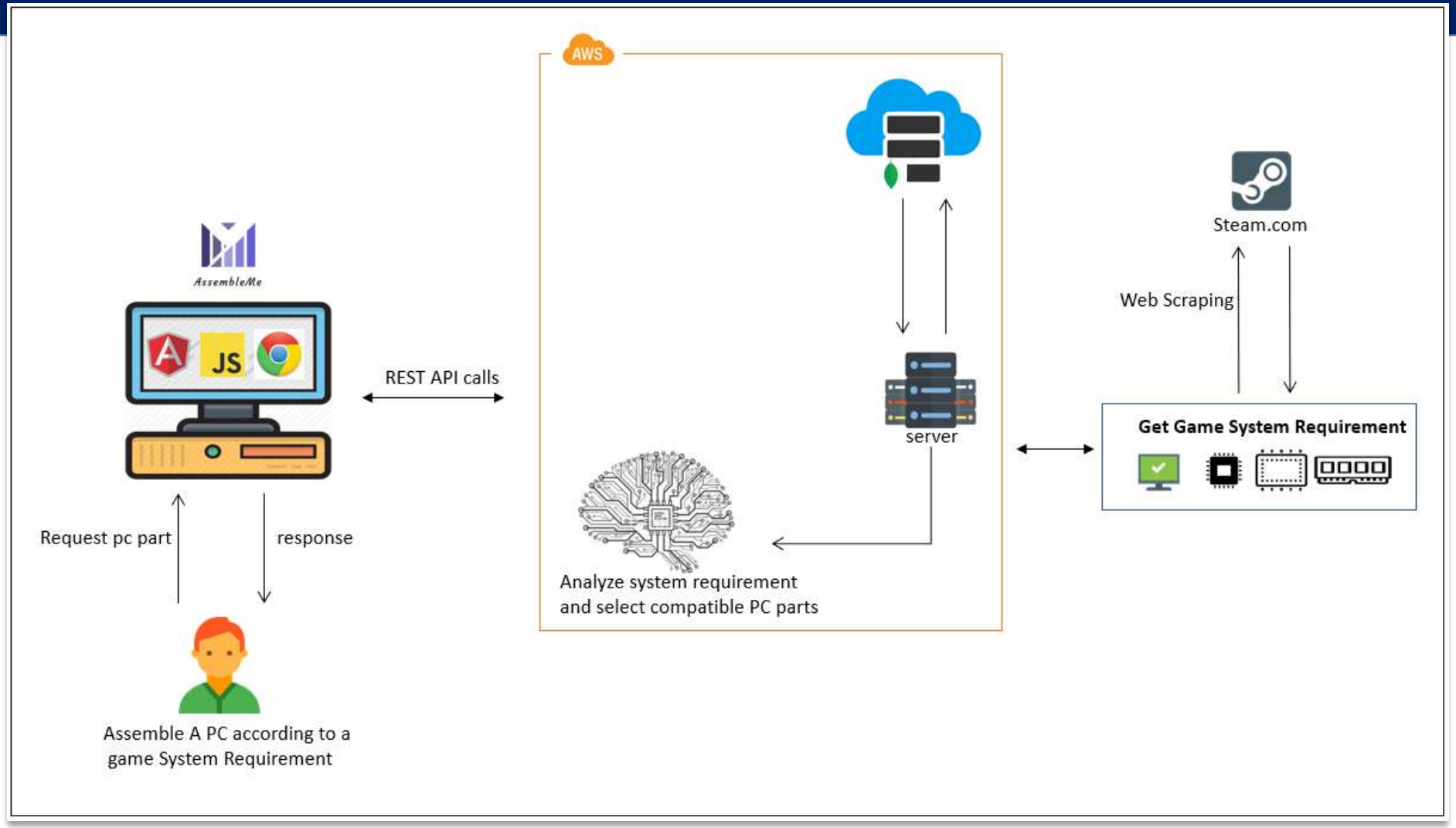



# WORK BREAKDOWN

- Get the system requirements of the selected game using web scraping (steam.com) and format real time
- Develop custom build sequence by using expert system and decision tree algorithm
- Using build sequence identify the compatibility of the parts which satisfy the requirement
- The build sequence will analyze the final product (assembled PC) as several sub components and match those specifications.

# SUB-COMPONENT ARCHITECTURE

(Assemble PC)

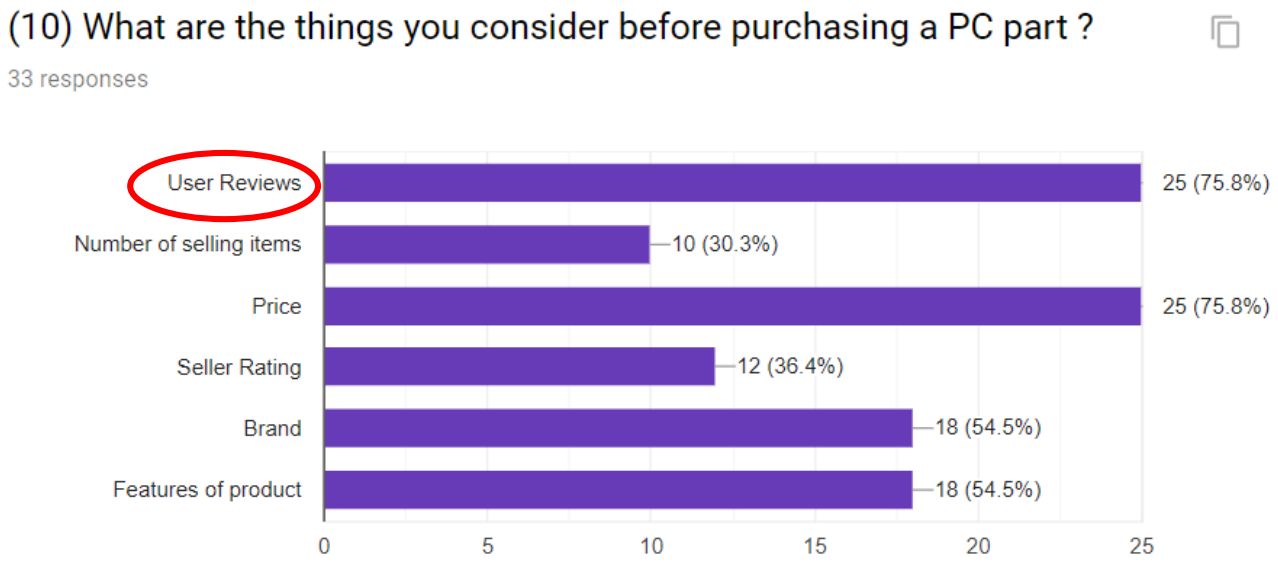


# FACEBOOK COMMENT ANALYSIS

Sewwandi E.D.D
IT15146816

# FACEBOOK COMMENT ANALYSIS

- Specific Objectives
  - Users can get feedbacks before purchasing a product.
  - Byers can ensure the product quality.
  - Useful for a product comparison.

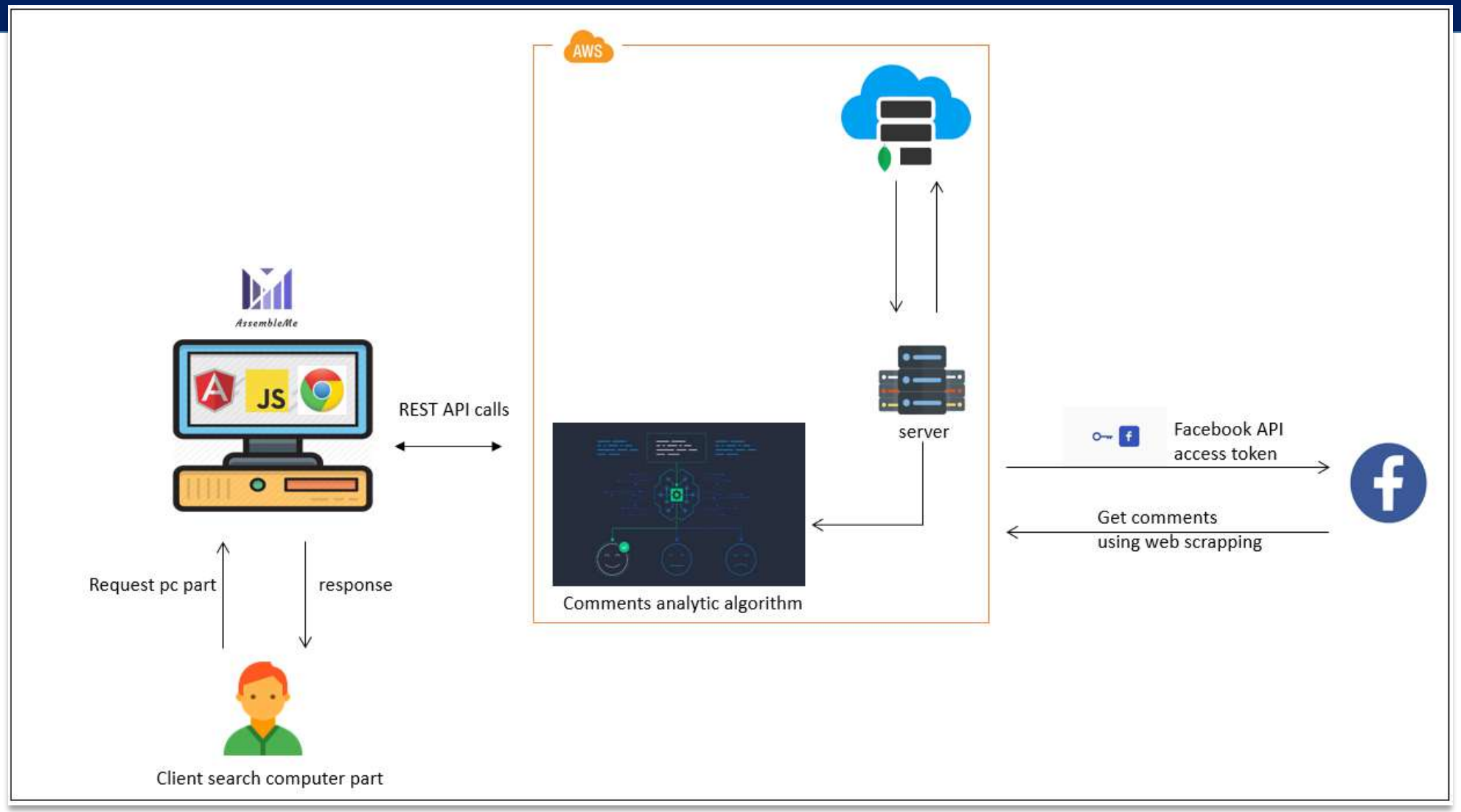


# WORK BREAKDOWN

- ❑ Get the required keyword from the search tags user has selected.
- ❑ Track the social media comments related to the keyword tags.
- ❑ Using a Facebook API (Graph API) Token comments will be accessed.
- ❑ Web scraping is used to extract the comments Real Time.
- ❑ Comments will undergo opinion mining procedure.
    - Determine the positivity or negativity of a comment
- ❑ Display the analyzed customer review summary.

# SUB-COMPONENT ARCHITECTURE

(Facebook Comments Analysis)



# PRICE COMPARISON AND OPTIMIZATION

M.A.V.L Gunathilaka
IT16055186

# PRICE COMPARISON AND OPTIMIZATION

- Specific Objectives
  - Ability to search different products of different vendors in the same place and the same time.
  - Suggest the best PC part in a given price range.
  - Suggest PC parts and where customers can purchase them to assemble a PC for the optimum budget plan.
  - Notify the price drops to customers, if the price of the product meets the customer budget.



Image source : https://www.google.com/search?q=price+comparison

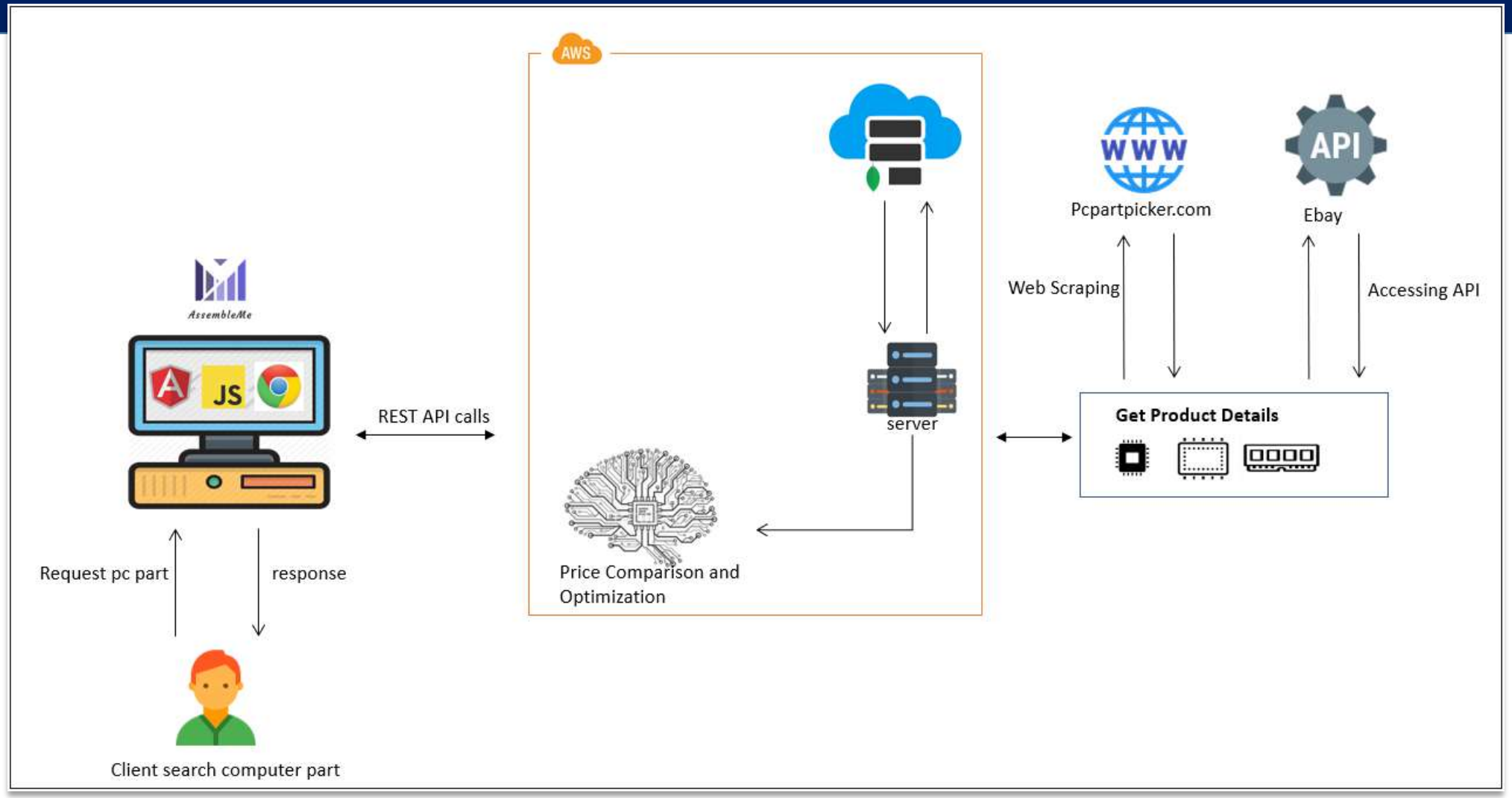
# WORK BREAKDOWN

- The process of extracting data
  - Ebay, Amazon and Ali Express are the e-commerce websites.
  - Web scraping and their web APIs are used.
  - Local vendors can manage their user account to update products.

- Product features, customer feedbacks, prices and number of selling items are considered.
- Develop an algorithm to recommend PC parts for the lowest budget.

# SUB-COMPONENT ARCHITECTURE

## (Price Comparison & Optimization)



# LAPTOP COMPARISON

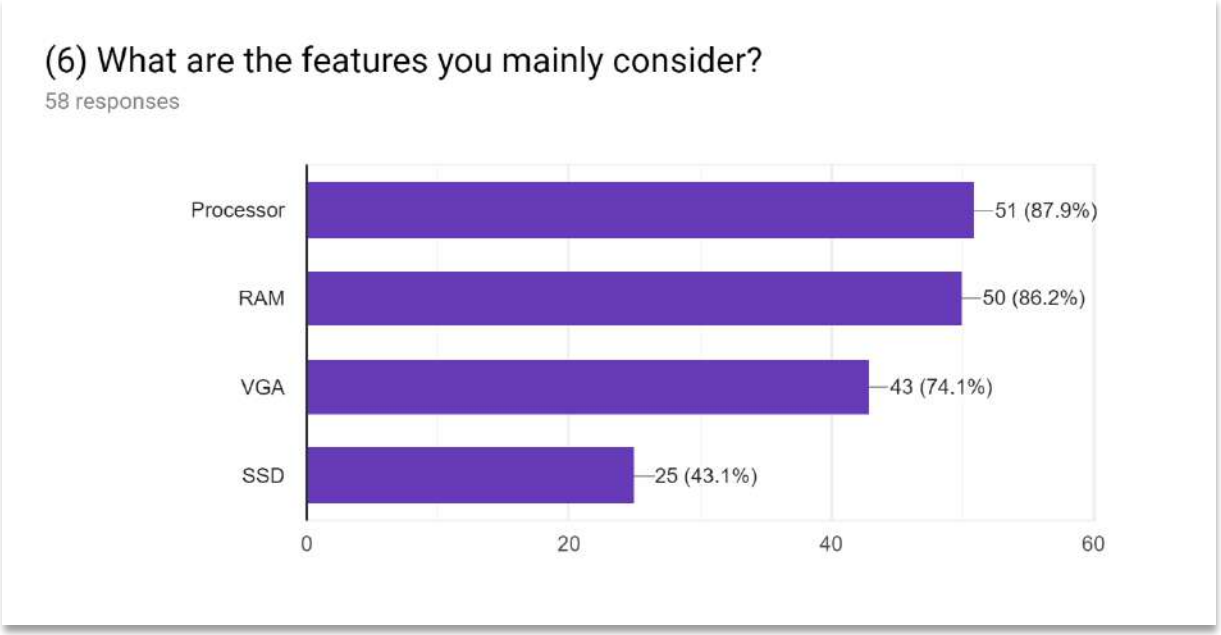
Tharaka K.K.S
IT16054578

# LAPTOP COMPARISON

- Specific Objectives
  - Before Purchasing a laptop user can compare computational power
  - By comparing suggest the best laptop
  - Ability to compare and choose best laptop for non-technicians

# Survey Results

Survey findings on what are the things user consider when buying a laptop



# WORK BREAKDOWN

- Process of getting data
  - Get laptops details from noteb API
  - Format that data and store in the database
- Develop artificial intelligence expert system to compare and recommend best laptop and suggest
- Develop user friendly interfaces

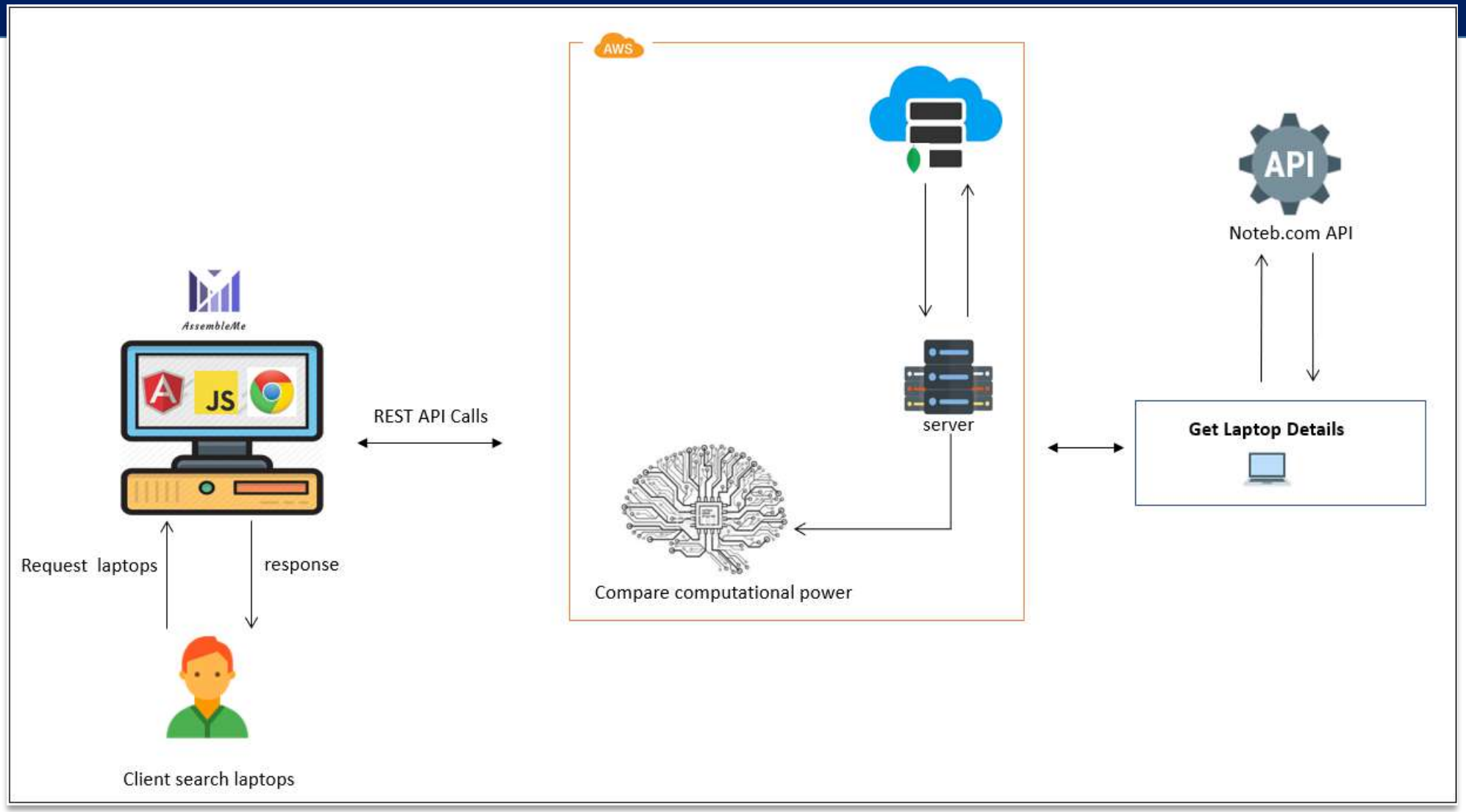
# WORK BREAKDOWN (CONTD.)

- When comparing two laptops mainly consider
  - Processor
  - Random Access Memory (RAM)
  - Hard Disk Drive
  - Graphics Processing Unit (GPU)
  - Battery Life

- **Best Laptop } Processor | RAM | Hard Driver | GPU| Battery Life**

# SUB-COMPONENT ARCHITECTURE

(Laptops Comparison )



# USED TECHNOLOGIES

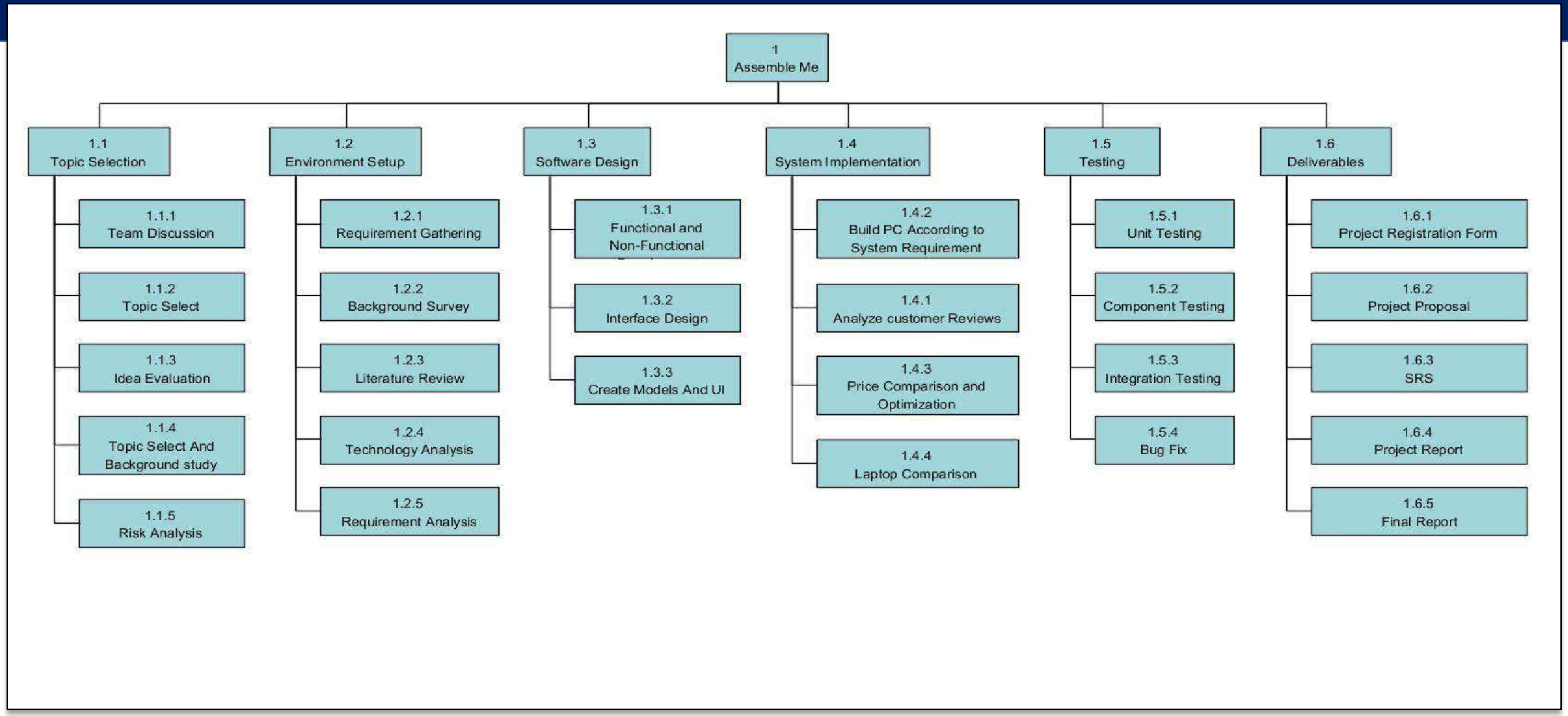
| Technologies |
| --- |
| ❑ Python 3.7.1 |
| ❑ Java (spring boot framework) |
| ❑ Angular 6 |
| ❑ NodeJS |

| Tools |
| --- |
| ❑ Jupyter Notebook |
| ❑ Robo 3T |
| ❑ Microsoft Visual Studio Code |
| ❑ Spring Tool Suite |

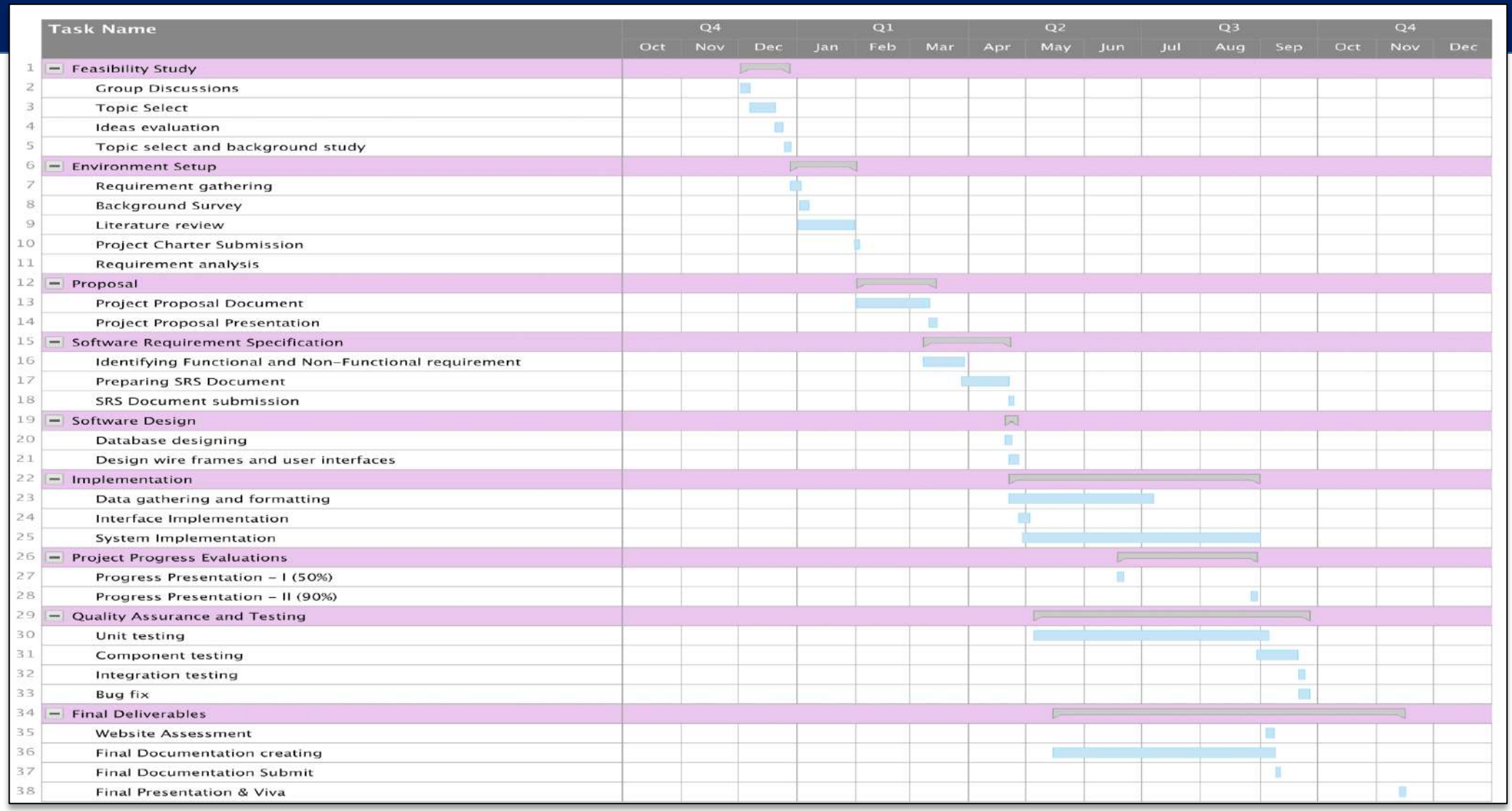
| Database |
| --- |
| ❑ MongoDB 4.0.0 |



# WORK BREAKDOWN STRUCTURE



# GANTT CHART


Task Name
Q4
Q1
Q2
Q3
Q4
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1 Feasibility Study
2 Group Discussions
3 Topic Select
4 Ideas evaluation
5 Topic select and background study
6 Environment Setup
7 Requirement gathering
8 Background Survey
9 Literature review
10 Project Charter Submission
11 Requirement analysis
12 Proposal
13 Project Proposal Document
14 Project Proposal Presentation
15 Software Requirement Specification
16 Identifying Functional and Non-Functional requirement
17 Preparing SRS Document
18 SRS Document submission
19 Software Design
20 Database designing
21 Design wire frames and user interfaces
22 Implementation
23 Data gathering and formatting
24 Interface Implementation
25 System Implementation
26 Project Progress Evaluations
27 Progress Presentation – I (50%)
28 Progress Presentation – II (90%)
29 Quality Assurance and Testing
30 Unit testing
31 Component testing
32 Integration testing
33 Bug fix
34 Final Deliverables
35 Website Assessment
36 Final Documentation creating
37 Final Documentation Submit
38 Final Presentation & Viva

# REFERENCES


- F. N. Leo Rizky Julian, "THE USE OF WEB SCRAPING IN COMPUTER PARTS AND ASSEMBLY PRICE COMPARISON," 2015.
- N. D. Udi Boker, "Comparing Computaional Power," 2015.
- C. Kocas, "Online price competition within and between Heterogeneous Retailer Groups," 2004.
- A. Salinca, "Business reviews classification using sentiment analysis.," 2016.
- Y. N. A. O. I. O. BabolaT. Issac, "Assemblin a Desktop Computer System with In-Bult Uninterrupted Power Supply.," 2017.

# THANK YOU