Requirement Classification

Hello!

NullPointerException Group

We are here to present about our group project, Requirement Classification.

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Introduction

What is Requirement Classification?

"Requirements are important data in order to develop something."

More Requirements?

- Able to limit the scope
- More accurate the product
- More options in negotiations

What if there were so many of them?

How do you manage it without mistakes?

Solution?

What if we said someone (or something) can do it for you?

Key Features

Priority

Categorize requirements into 3 priority levels: high, medium, and low.

Functionality

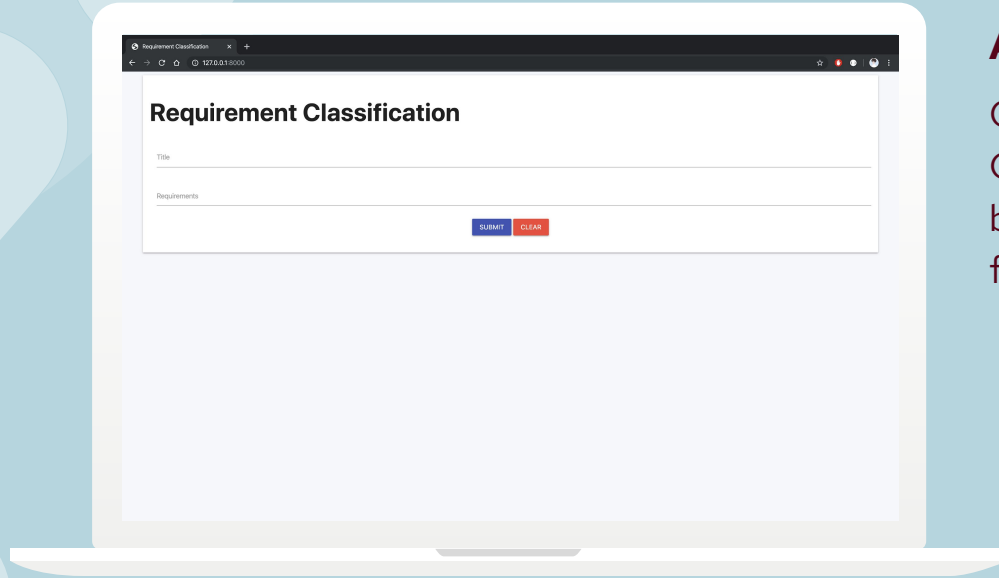Categorize requirements into 2 functionality types: functional and non-functional.

Keywords

Find keywords in all input requirements. Not more than 9 keywords will be listed, while less common keywords will not be shown.
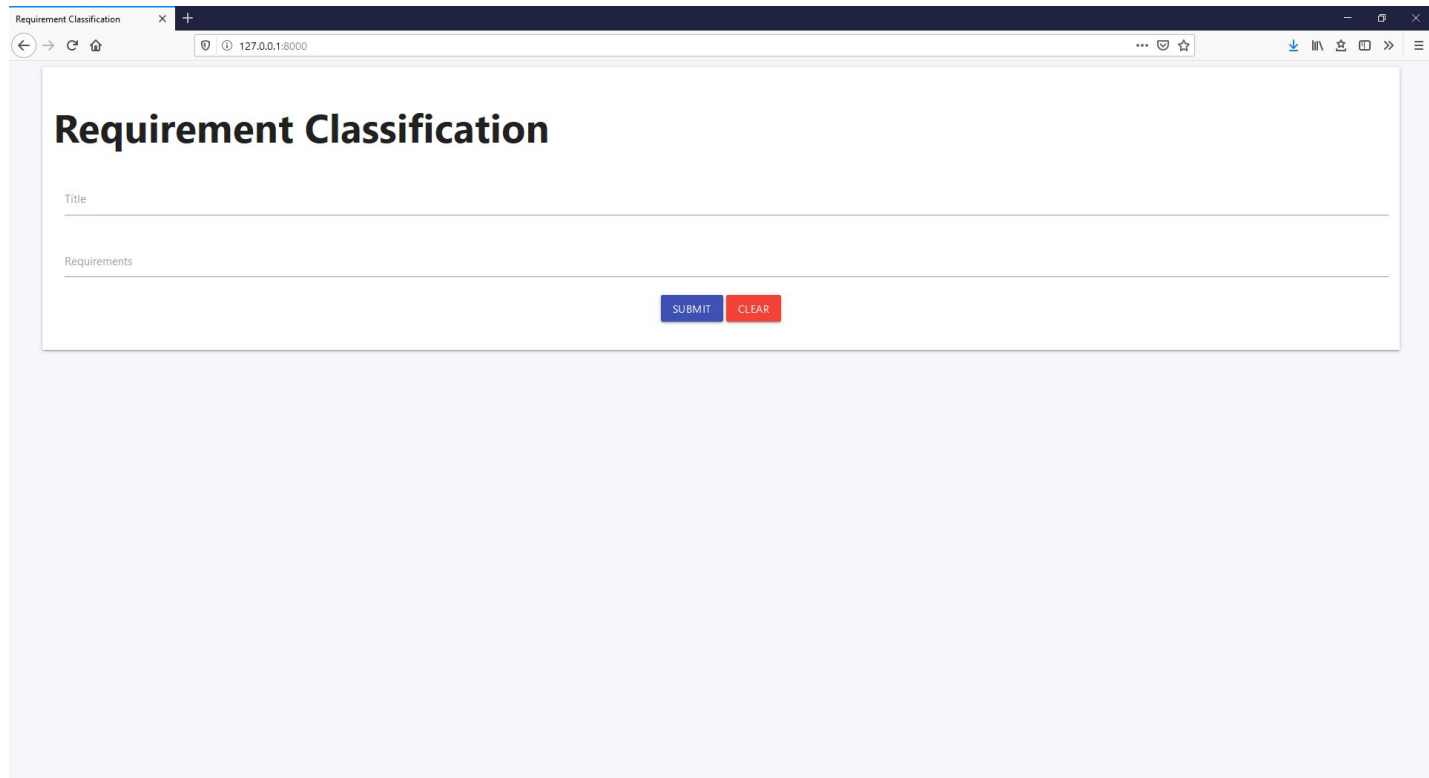
2

How to use it?

Guide for target users

Access

Once deployed, Requirement Classification Application can be accessed via web browser from any device.

Open the website

Enter title and all the gathered requirement, then submit.

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After click the SUBMIT button the web will show the analysis result

More result screen

More result screen

More result screen

You can select filter option and press FILTER button to show only the things you want (All Requirements)

You can select filter option and press FILTER button to show only the things you want (Priority)

You can select filter option and press FILTER button to show only the things you want (Functionality)

You can select filter option and press FILTER button to show only the things you want (Keywords)

3

How does it work?

Inside the code and algorithms

PyThaiNLP

Project mainly powered by PyThaiNLP, a natural language processing library in Python for Thai language.

3.1

Priority Categorization

High, Medium, and Low.

171 Samples

That's not much, but there will be more!

3 Steps Algorithms

Not much, but tightly-packed.

65% Satisfactory

Can be increased with better

algorithms and more sample data.

Priority Categorization Process

1 **Retrieve sample data**

Retrieve all sample data from database with a specific criteria.

2 **Turn it into a tree**

Turn all retrieved data from database into a data structure of a tree with a specific algorithms.

3 **Compare**

Take input requirements from user and make it into a tree and compare with all generated trees from step 2 to find the most accurate category for them.

What is this mentioned-tree like?
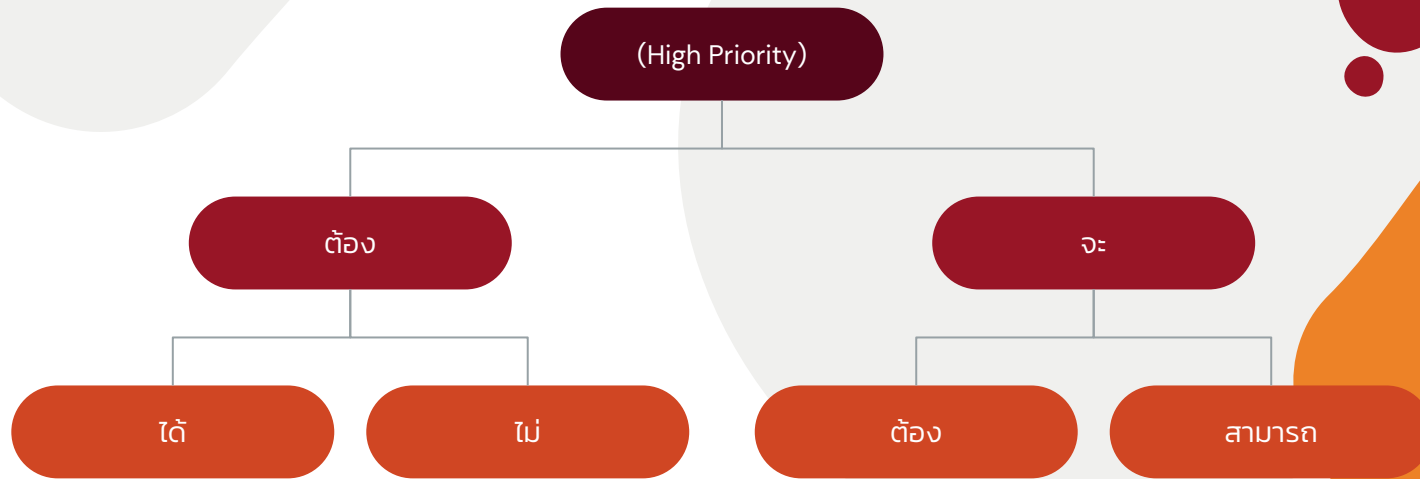
(High Priority)

ต้อง

จะ

ได้

ไม่

ต้อง

สามารถ

3.2

Functionality Categorization

Functional and Non-functional

Functionality Categorization Process

Retrieve keywords

1

Retrieve all keywords and its weight from 2 csv files.

Compare

2

Take input requirements from user and compare with retrieved keywords.

3.3

Keywords Catcher

Catch common keywords

Keywords Catcher Process

1 Retrieve input data
Retrieve all input data from user, make it into a list of word lists for easy processing.

2 Catch keywords
Catch all possible keywords and count them.

3 Filter
Filter out some less common keywords and show not more than most 9 common keywords.

4

Attempts

What have we tried? (and failed)

Priority Categorization Attempts

	Final Attempt	Satisfactory	Implemented
Keywords	**Success**	**3/5**	**No**
Similarity Comparison	**Failed**	**–**	**–**
Tree–Algorithm	**Success**	**4.5/5**	**Yes**

Functionality Categorization Attempts

	Final Attempt	Satisfactory	Implemented
Keywords	**Success**	**3/5**	**Yes**
Similarity Comparison	**Failed**	**-**	**-**
Tree-Algorithm	**Not Working Properly**	**0/5**	**No**

Keywords Catching Attempts

	Final Attempt	Satisfactory	Implemented
Most-Common	**Success**	**3.5/5**	**Yes**

Back-end Attempts

	Final Attempt	Satisfactory	Implemented
Database Encoding (UTF-8)	**Success**	–	**Yes**
Backend API	**Not Enough Time**	–	–
Deploy	**Failed**	–	–

Front-end Attempts

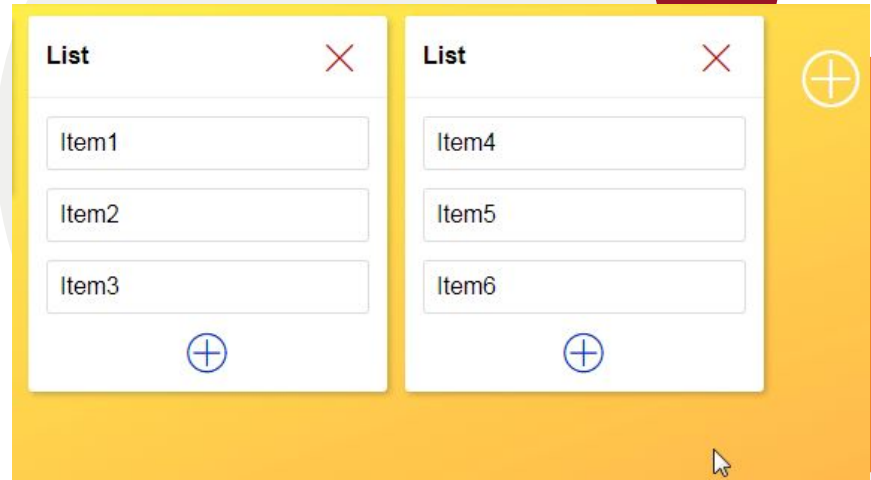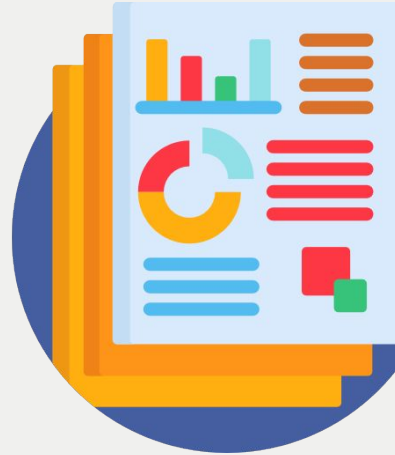|	Final Attempt	Satisfactory	Implemented
Using WebApp	**Success**	2/5	**No**
Drag and Drop	**Failed**	–	–
Responsive	**Not Working Properly**	2/5	**No**

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Ideas

Future Ideas and Possibilities

User Interaction: Drag and Drop

Users can drag and drop requirement objects on the website to rearrange things to their likings.

File Export

Users can export analysis result into a file.

User Contribution: Report Inaccuracy

Users can send reports if a certain requirement is categorized incorrectly. Reported requirement will be added to database for higher categorization accuracy.
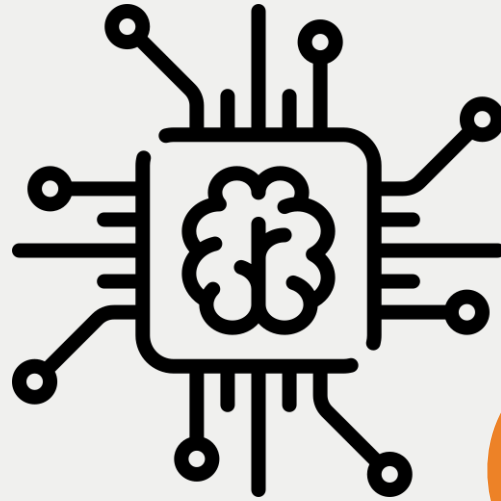
Improved Performance

Current performance is considered to be slow, which is around 3-5 seconds response time per user.
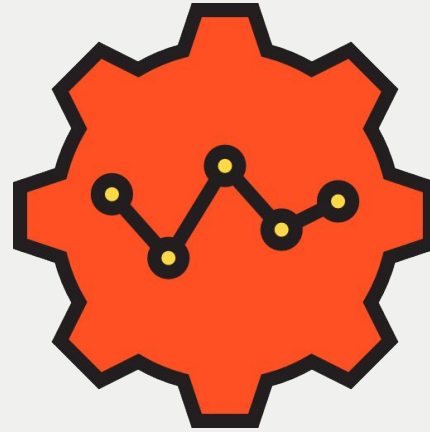
Improved Algorithms

Improving algorithms can lead to better performance and better accuracy.

Thanks!

Any Questions?

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