RANCANG BANGUN APLIKASI WEB LELANG ONLINE (E-AUCTION) BERBASIS KERANGKA KERJA LARAVEL

Undergraduate Thesis's Presentation – Informatics Engineering Department
Institut Technology – Surabaya

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Supervisor:
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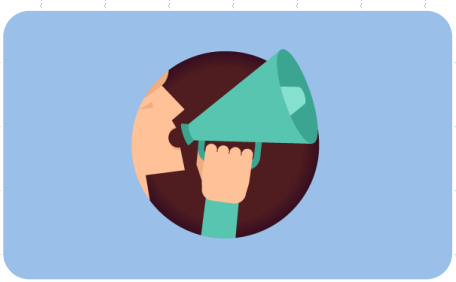
Rizky Januar Akbar, S.Kom., M.Eng

Audience

- Mr. Soelaiman, Rully
  Supervisor 1
- Mr. Januar A, Rizky
  Supervisor 2
- Mr. Ginardi, R. V. Hari
  Examiner 1
- Mr. Munif, Abdul
  Examiner 2

Presentation's Outline

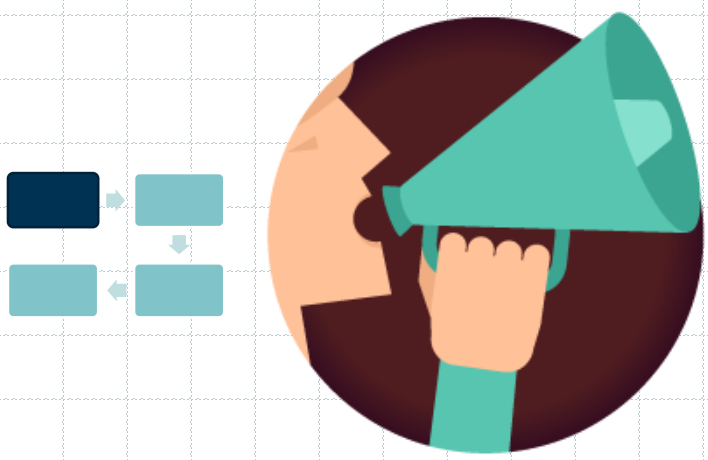


Introductory

The System

Test & Evaluation

Conclusion



Introductory

- Author Thesis's Summary
  Details & Limitations

Preliminary

Background

Digitizing conventional auction process

Learn from former online-auction platform failures

Problem Formulation

How to create online-auction web-app ?

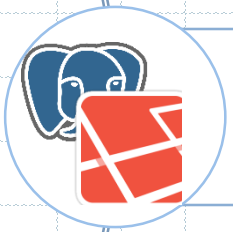
Application architecture that suits the base paper suggestion?

Objectives

Building an online-auction web-app that is credibel, according to the base paper

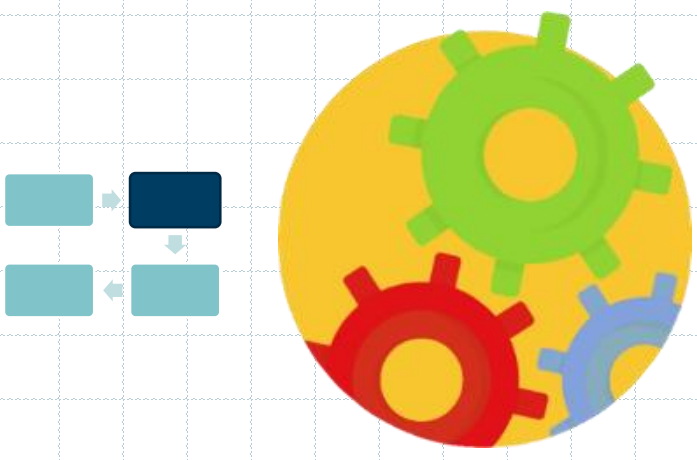
Limitations

A web-application based on PHP



Built upon Laravel and PostgreSQL

Didn’t cover the shipment, tracking and payment process



The System

- Preliminary
- About the System
  Architecture, Structure, and Tiers

Based from a Paper

- Based on a paper researching of online auction services in Taiwan
- Providing the added observed value to the online auction platform that satisfies the users

Electronic Commerce Research and Applications 10 (2011) 183–193

Contents lists available at ScienceDirect

Electronic Commerce Research and Applications

journal homepage: www.elsevier.com/locate/ecra

Online auction service failures in Taiwan: Typologies and recovery strategies

Ying-Feng Kuo [a,*], Shih-Ting Yen [b], Ling-Hsiu Chen [c]

[a] Department of Information Management, National University of Kaohsiung, 700, Kaohsiung University Road, Kaohsiung 811, Taiwan
[b] Department of Asia-Pacific Industrial and Business Management, National University of Kaohsiung, Kaohsiung 811, Taiwan
[c] Department of Information Management, Chaoyang University of Technology, Wufong, Taichung County 413, Taiwan

System Explanation

Basic Functionality Analysis

- Bid Items
- See the available items to bid
- See the bid history

Bidding

- Register items to sell
- Manage items
- See the bid process

Selling

- Insert reviews to seller/bidder
- See other's people reviews

Reviewing

- Submit coupon to a finished transaction

Coupon

*functionality features are based on paper

An Application of E-Commerce in Auction Process

AUTHOR
Mario Spundak

Combined with suggestions from base paper

System's Explanation

Non-Functional Requirement

Availability
Anytime, anywhere via internet-connected browser

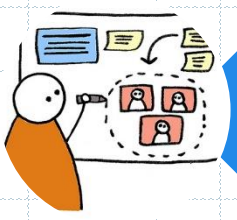
Languange
Using Bahasa as it's main languange

Performance
A page is expect to be loaded <= 3s*

Non-Functional Requirement

Maintainability

Application design, constructing codes and structures should be maintainable since feature changes are often done



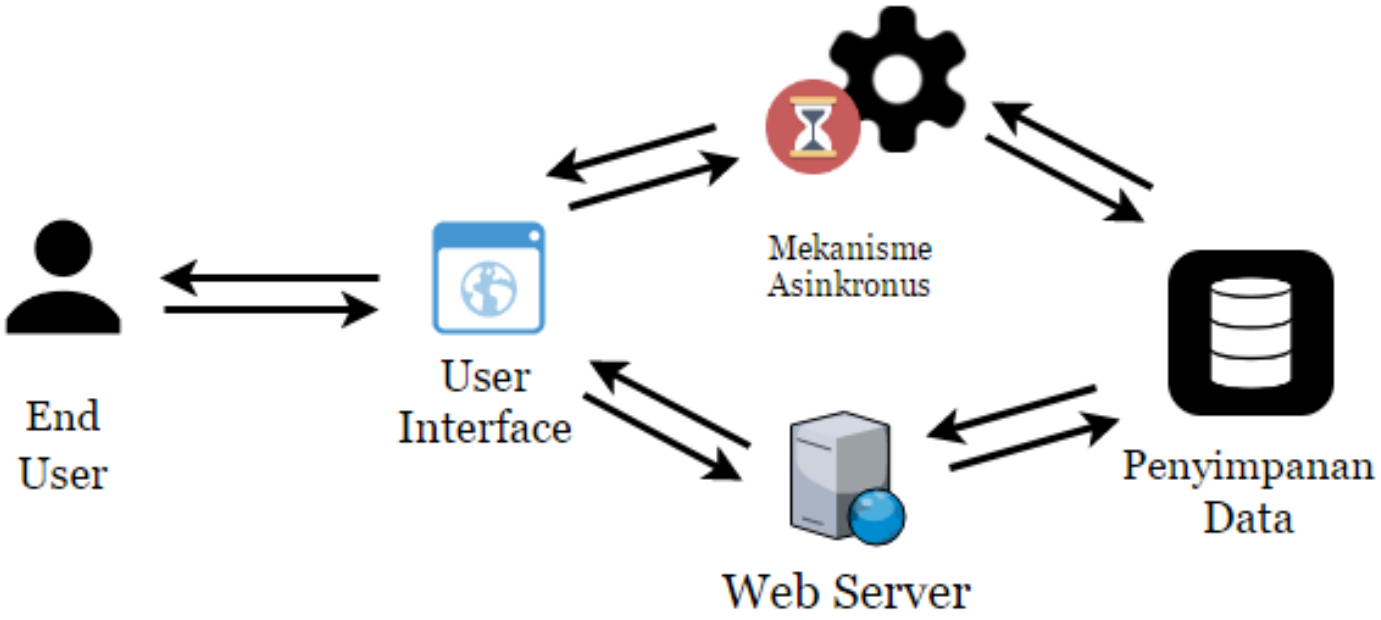
Positive User Experience

Must create a good impression via user experience

Authorization

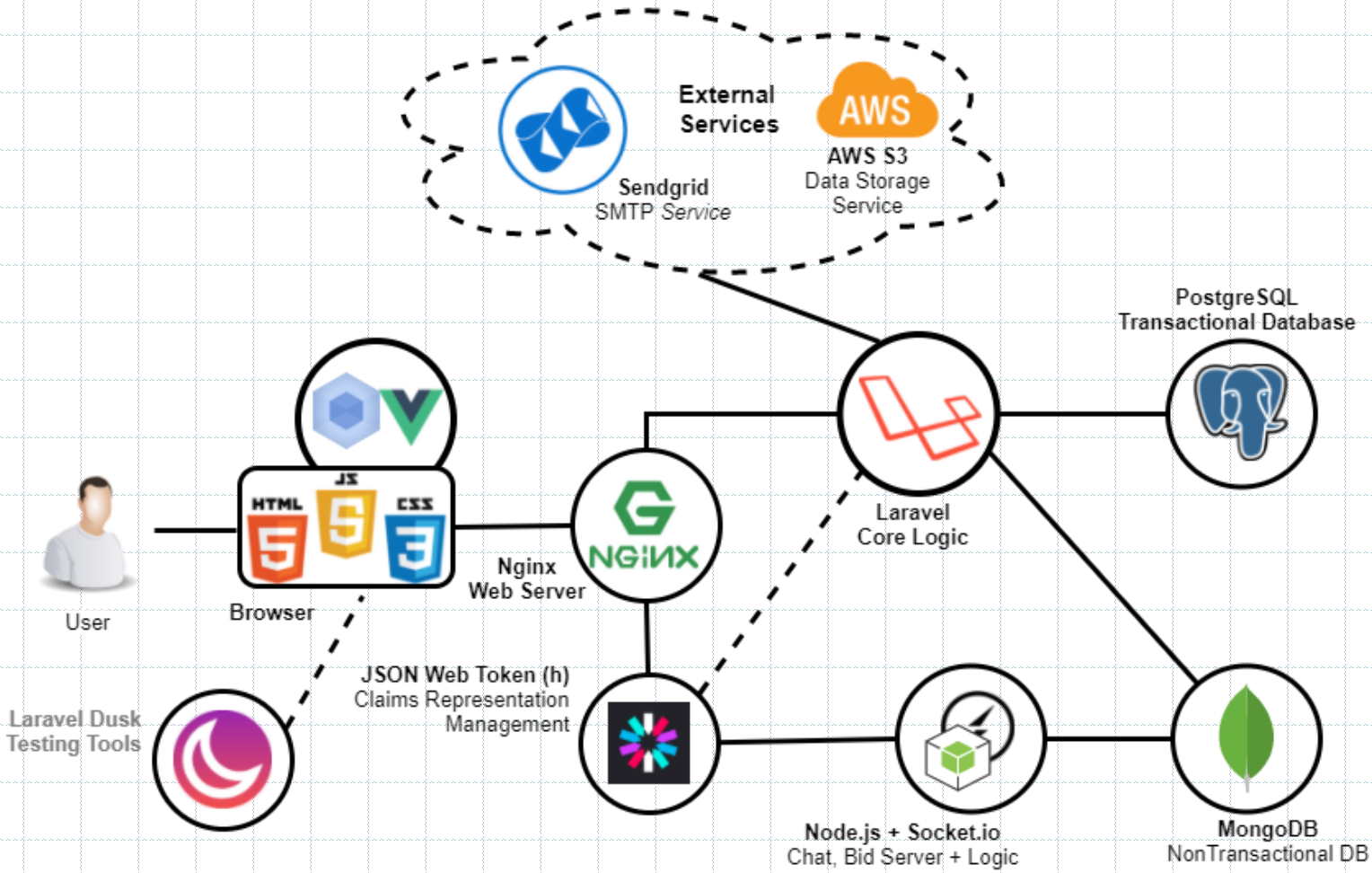
Each users provided an account (tested within functionality)

Application Fundamental Architecture



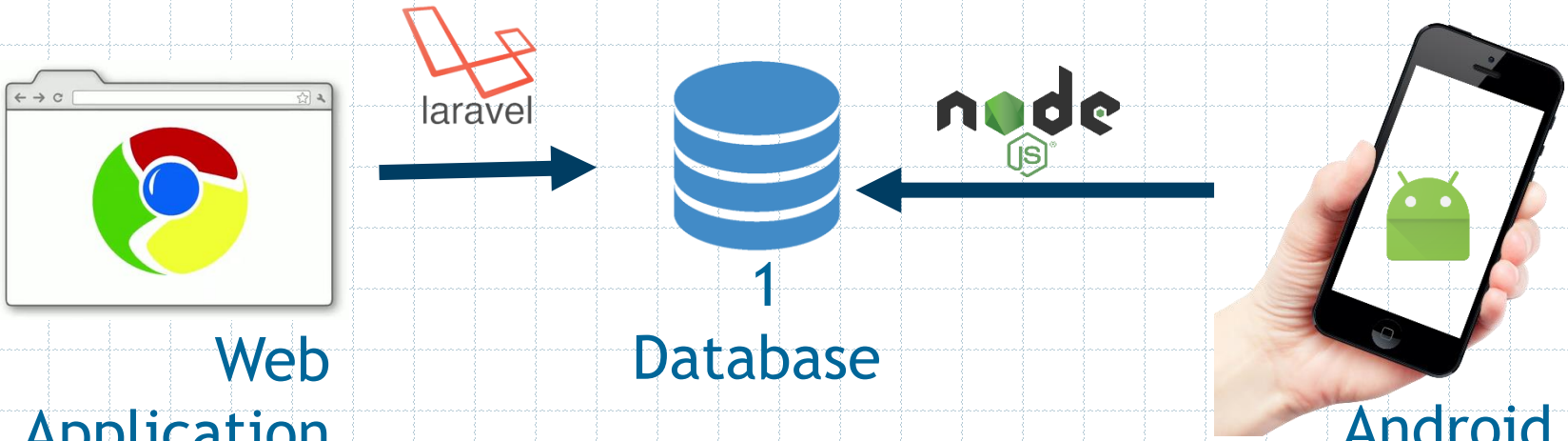
The System - Explanation

Technology Choosements



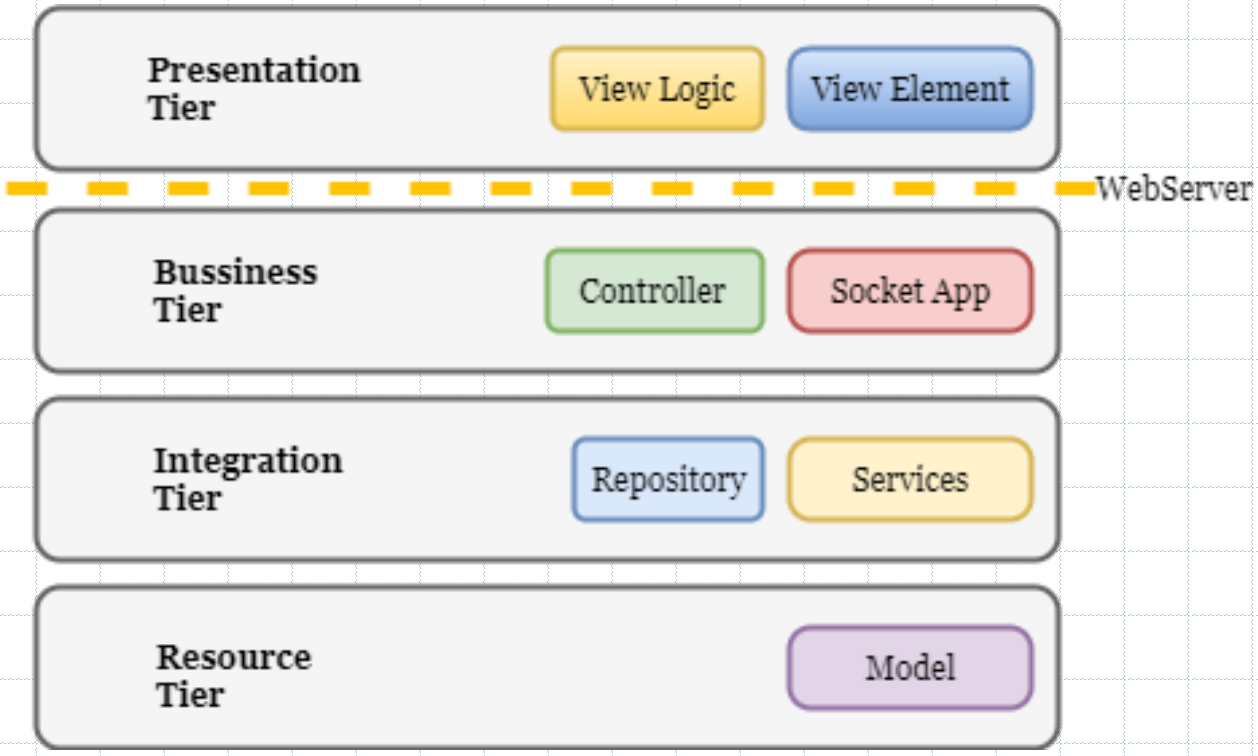
Relation to Andre's Work

- Different back end on each
- Same database



Tiers

Application consists of 4 layers, each of them own their responsibility.



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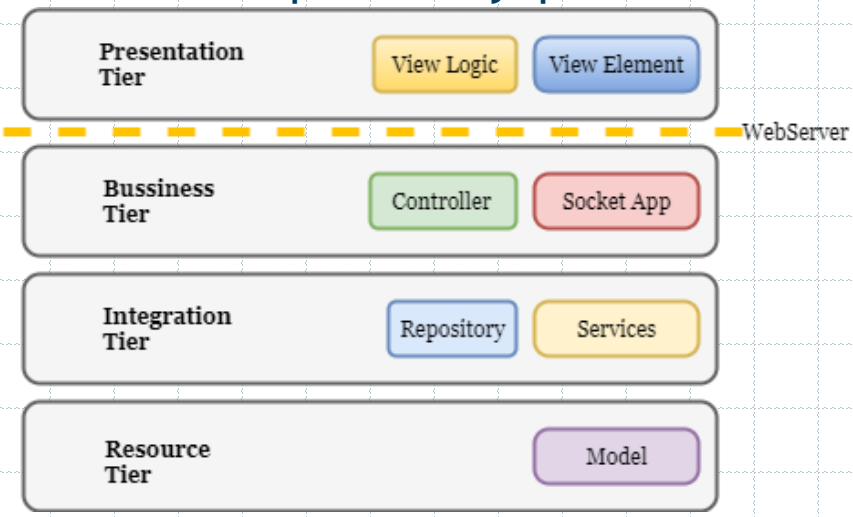
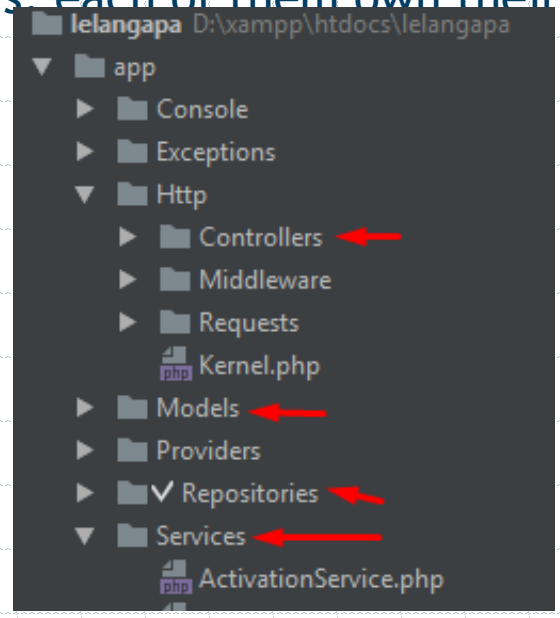




Test & Evaluation

Author :
Ronauli Silva Natalensis Sidabukke - 5113100142
Undergraduate Thesis Presentation (KI141502) – Plan B
Rancang Bangun Aplikasi Web Lelang Online Berbasis Laravel
Disclaimer Applied

Testing & Evaluation

Test Methodologies

Functional Testing
manually

Speed Test
Recorded Chrome Developer Tools

User Experience Assesment
via Survey

Maintainability Assesment
via Developer Survey

Functionality Test

- Scoreboard:
  - Passed : 14/17
  - (Once passed) : 1 Reviews
  - Unfinished : 1 feature (searching)

- Buggy features:
  - Automated mail : Expired free account, have to reconfigure all the settings on new account

Recaps

Misconception between Developers

- On Management Review Function
- Creating duplicate tables & mechanism for same feature

Premature Optimization

- Want to implement service worker in Vue for better performance
- Learning gaps for vue is actually high, cannot be finished

Speed Test Insights

Google Browser Developer Tools record the time log based on this segmentation:

DOM Loading

- The time html page returned from web server

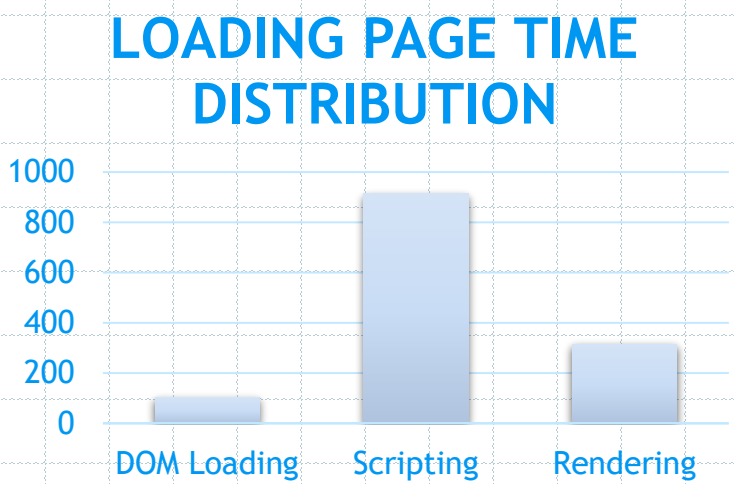
Scripting

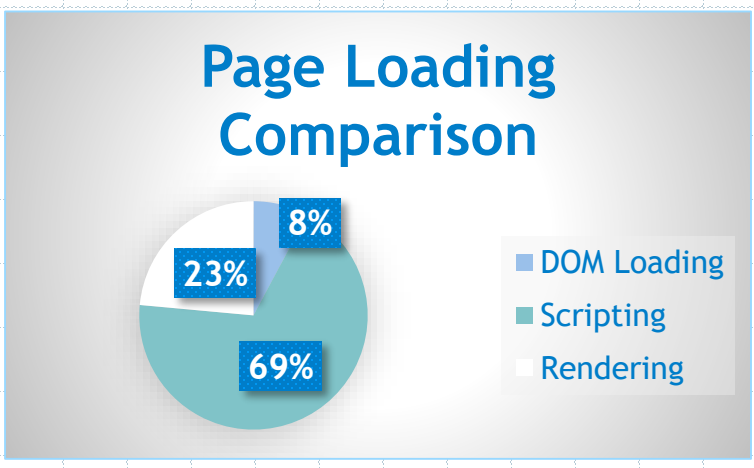
- Time taken to fetch scripts and assets

Rendering

- Rendering all content, scripts and assets to browser page

The Result

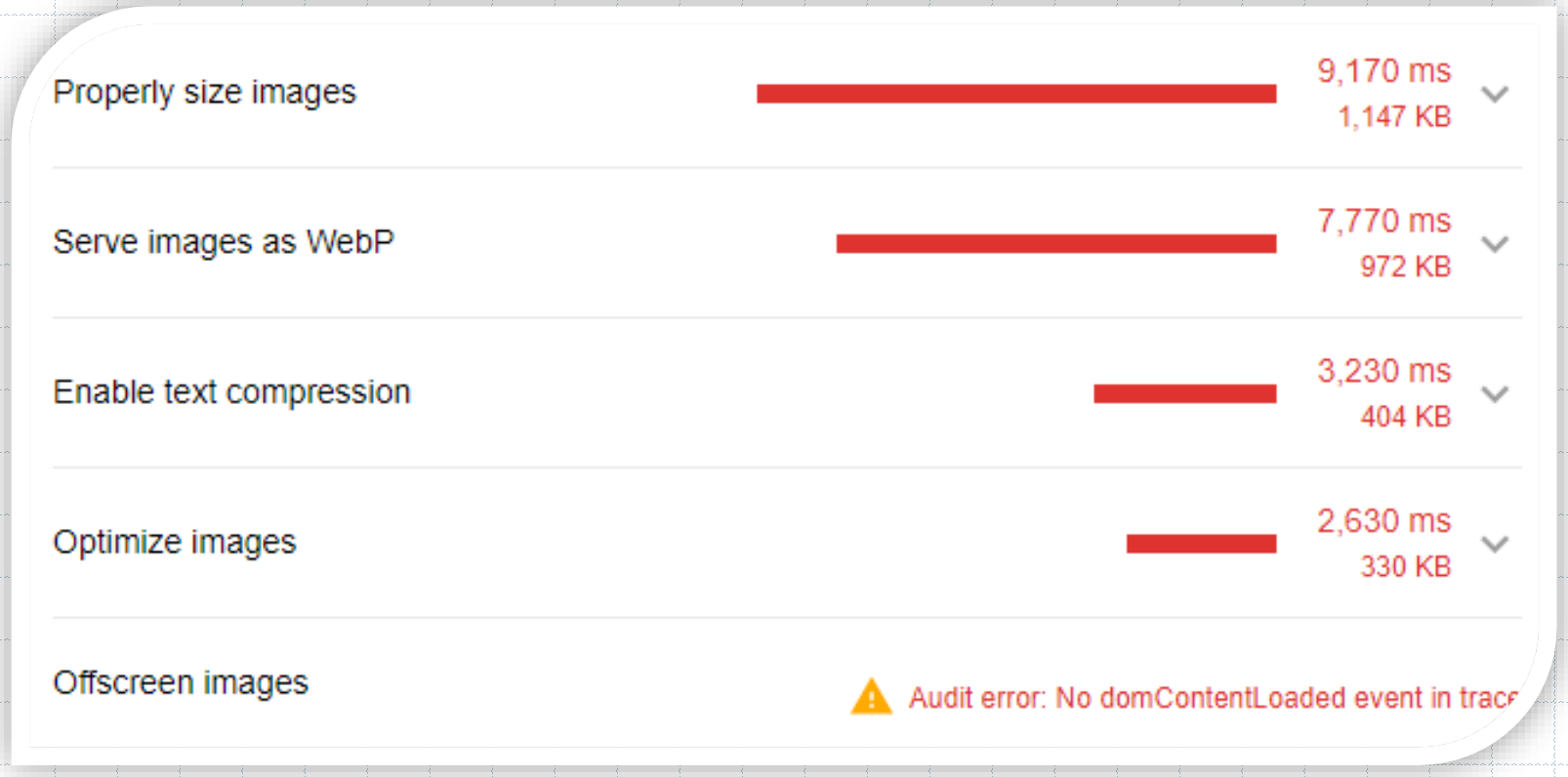




- Average Loading Time : 2,9 ms
- Back-end is fast enough, but scripting (fetching assets) are slower anyone else
  Scripting takes 75% of the loading time
- Slowest loading is on item show page
  Main culprit : Uncompressed Image

Result Analysis

- Opportunity analysis from Lighthouse on the slowest page



Questionnaire Design

KPI Based on A Software Maintainability Evaluation Methodology
Peercy, David E. IEEE TRANSACTIONS ON SOFTWARE ENGINEERING, VOL. SE-7, NO. 4, JULY 1981

Defined on papers that:

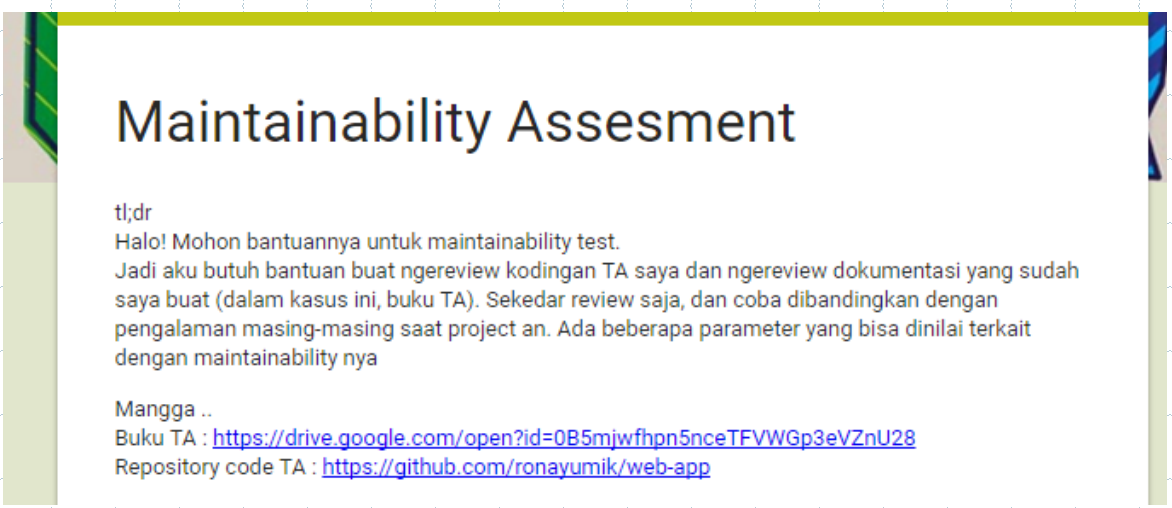
- Maintainability lies on 2 fundamentals Documentation(40%) & Source Code(60%)
- Can be measured through 5 parameters beside
- Measured in 5-scale (Completely Agree to Comp. Disagree)
- Evaluator agreement goal is 0.8

Parameter
Modularity
Descriptiveness
Consistency
Simplicity
Trackability

Survey Methodologies

KPI Based on A Software Maintainability Evaluation Methodology
Peercy, David E. IEEE TRANSACTIONS ON SOFTWARE ENGINEERING, VOL. SE-7, NO. 4, JULY 1981

- Conducted online (via google forms)
- Reviewing code via github and reviewing documentation via undergraduate thesis book (buku TA)



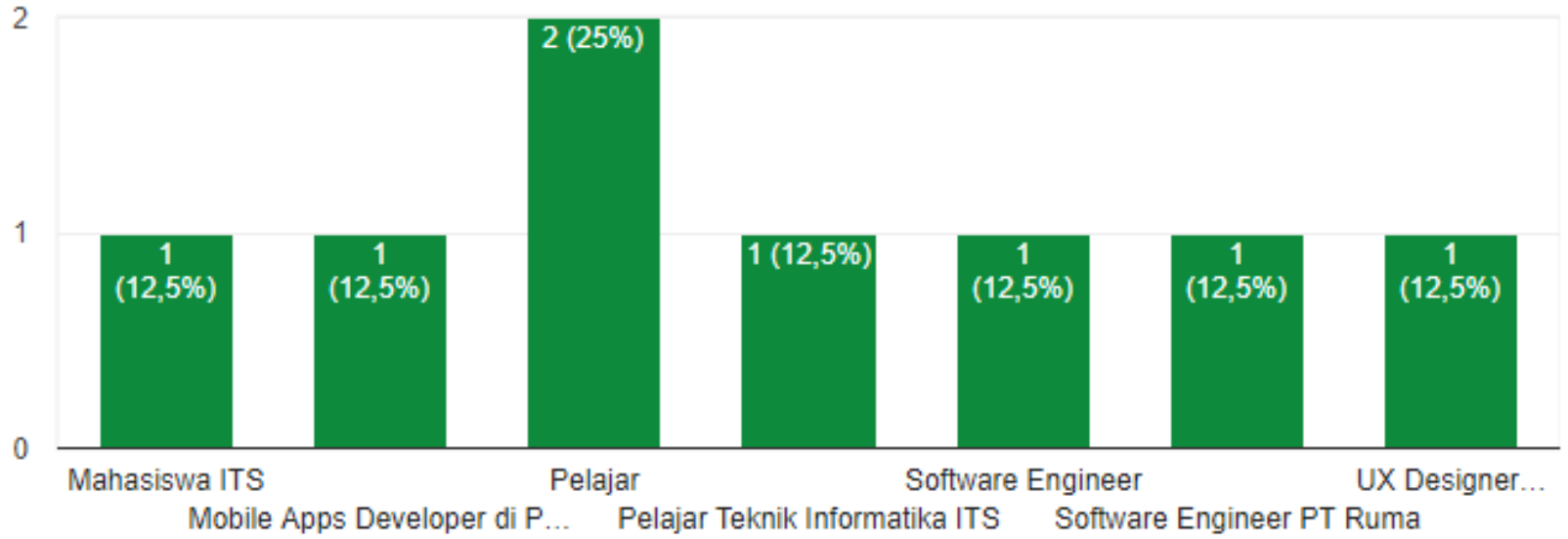
Maintainability Assesment

tl;dr
Halo! Mohon bantuannya untuk maintainability test.
Jadi aku butuh bantuan buat ngereview kodingan TA saya dan ngereview dokumentasi yang sudah saya buat (dalam kasus ini, buku TA). Sekedar review saja, dan coba dibandingkan dengan pengalaman masing-masing saat project an. Ada beberapa parameter yang bisa dinilai terkait dengan maintainability nya

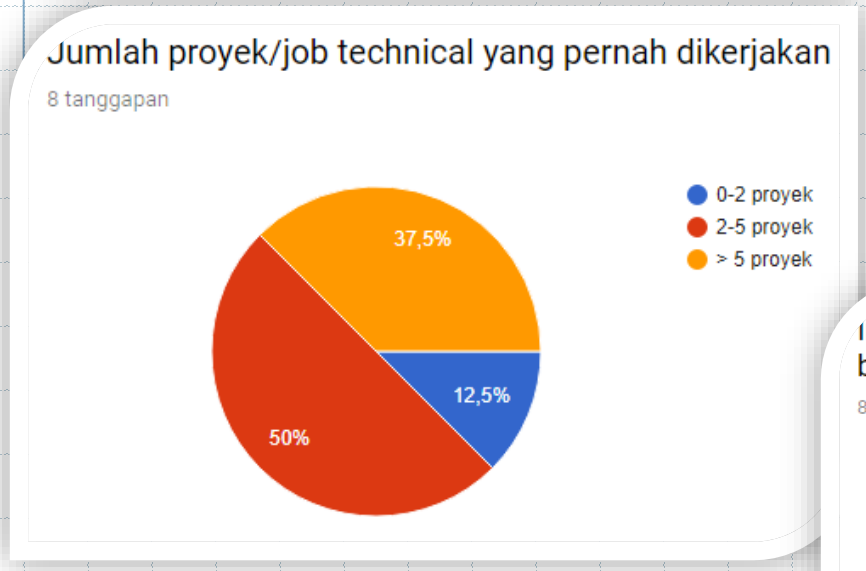
Mangga ..
Buku TA : https://drive.google.com/open?id=0B5mjwfhpn5nceTFVWGp3eVZnU28
Repository code TA : https://github.com/ronayumik/web-app

Respondent's Statistics (1)

- 8 respondents, all are already experienced medium to high tensity projects , some of them already works on IT Companies (all of them are TC's alumnaes)



Respondent's Statistics (2)



Testing & Evaluation – Maintainability Assesment

The Result

KPI Based on A Software Maintainability Evaluation Methodology
Peercy, David E. IEEE TRANSACTIONS ON SOFTWARE ENGINEERING, VOL. SE-7, NO. 4, JULY 1981

Parameters	Source Code	Documentation	Average
Modularity	83%	83%	83%
Descriptiveness	83%	78%	80%
Consistency	78%	73%	75%
Simplicity	75%	73%	74%
Trackability	75%	73%	0,77
Average	79%	76%	77%
Weights	60%	40%	
Final Score	**77%** (96% accomplished to target score)		

Questionnaire Design & Technique

KPI Based on **Development of an Instrument Measuring User Satisfaction of the Human-Computer Interface**
Proceedings of ACM CHI'88 Conference on Human Factors in Computing Systems 1988-05-15 p.213-218

Aplikasi Lelang Online Lainnya	Skala					Aplikasi Lelang Online "Lelangapa"	Skala				
	Kurang		*Baik*		*Excellent*		*Kurang*		*Baik*		*Excellent*
1. Desain & Impresi Web	1	2	3	4	5	2. Desain & Impresi Web	1	2	3	4	5
3. Kejelasan & Konsistensi Sistem	1	2	3	4	5	4. Kejelasan dan Konsistensi Sistem	1	2	3	4	5
5. Kemudahan Penggunaan	1	2	3	4	5	6. Kemudahan Penggunaan	1	2	3	4	5
7. Kejelasan status proses	1	2	3	4	5	8. Kejelasan status proses	1	2	3	4	5
9. *Error Message* yang jelas	1	2	3	4	5	10. *Error Message* yang jelas	1	2	3	4	5
11. Performa (kecepatan, *reliability)*	1	2	3	4	5	12. Performa (kecepatan, *reliability)*	1	2	3	4	5
13. Rating Keseluruhan	1	2	3	4	5	14. Rating Keseluruhan	1	2	3	4	5
15. Akan merekomendasikan ini pada teman?	1	2	3	4	5	16. Akan merekomendasikan ini pada teman?	1	2	3	4	5

Testing & Evaluation - *User Experience*

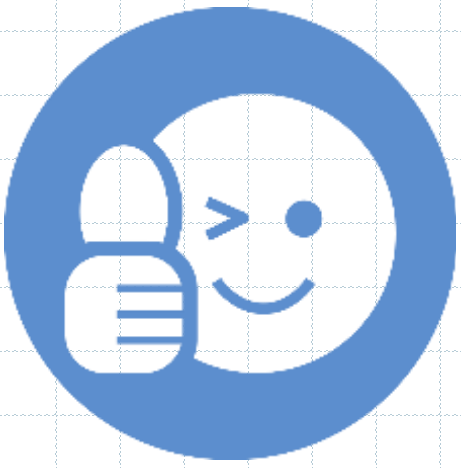
The Results

Parameters	Other App's Average Score	Lelangapa App's Average Score	Difference (in %)
Design & Web Impression	3,3	4,1	↑ 20%
Consistency & Descriptiveness	3,5	4,2	↑ 17%
Easiness	3,1	3,9	↑ 21%
Clear Error Message	3,7	3,9	↑ 5%
Clear Process Status	3,3	4	↑ 18%
Performance	3,7	3,8	↑ 3%
Rating on average	3,7	4,3	↑ 14%
Would recommend this to friend?	3,4	4,0	
Total Average			**↑ 15%**

Result's Summary

Evaluation's Summary

Test	Score	Conclusion
Functionality	14/17	82,3 % finished
Speed	3.2 s	Exceeds 6% Notot too bad either
Maintainability	77%	96% accomplished
User Experience	+15%	Good



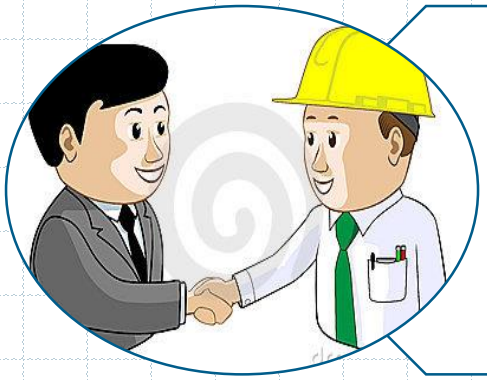
Finale

- Conclusions
- Suggestions
- Future Enchancements

Finale

Conclusions

Software Design Initiation is really important for a flexible and long-lasting software (which is really needed)



Bussiness aspects is important to create an e-commerce related application, if we want to create a fully-functioned app.

Finale

Suggestions

JWT Expiration

- Take care of JWT Token Expiration & Refresh Token Mechanism and its coordination to Back-end server

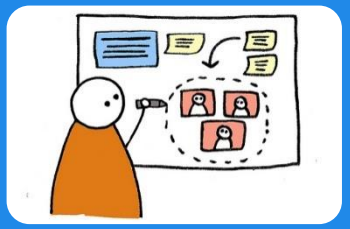
Legal Involvements

- Involve a legal financial authority in the bussiness process design & monitoring of online auction app.

Finale

Further Enchancements

Image Compression (often called Image Optimization) in optimizing a website's performance



User Experience's Impact to Business Matter Delivery

- How the Google Search Delay Impacts on Its Revenue
- Analyzing the eye movements to the information-eyecatchiness to deliver key values to the customers

Early Fraud Detection & Succesful Transaction Pattern Rate using Machine Learning Methods

- Credit Scoring from Customer Purchasement & Transaction's Pattern
- Early Fraud Detection from Bid Activities

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Thank you.

This is the end of this presentation.