

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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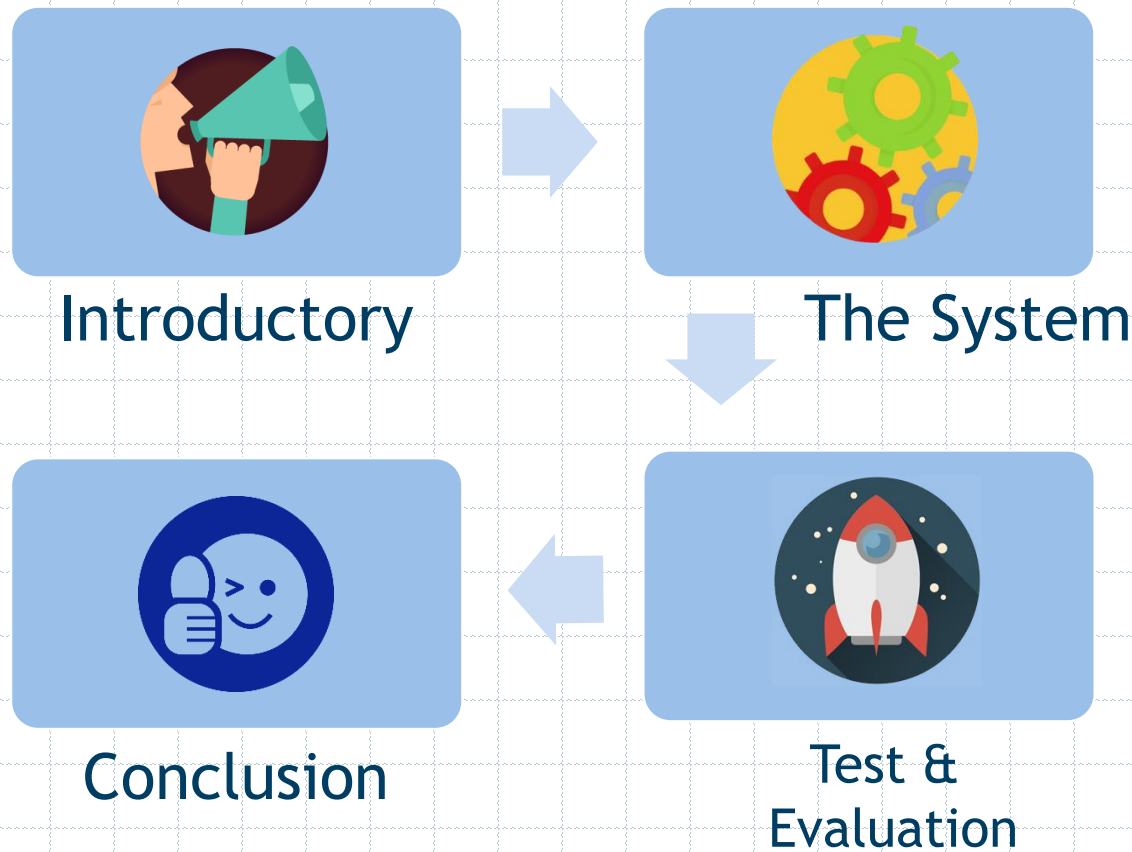
Supervisor:

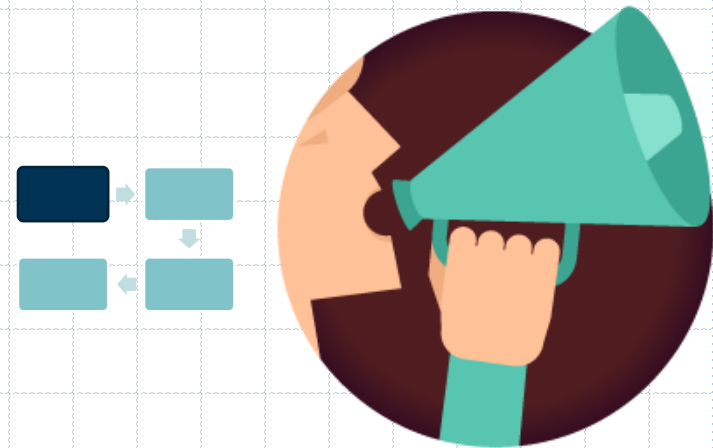
Rully Soelaiman, S.Kom., M.Kom.
Rizky Januar Akbar, S.Kom., M.Eng

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

- Author Thesis's Summary
Details & Limitations

Preliminary

Background

Digitizing
conventional
auction process

Learn from
former online-
auction platform
failures

Problem Formulation

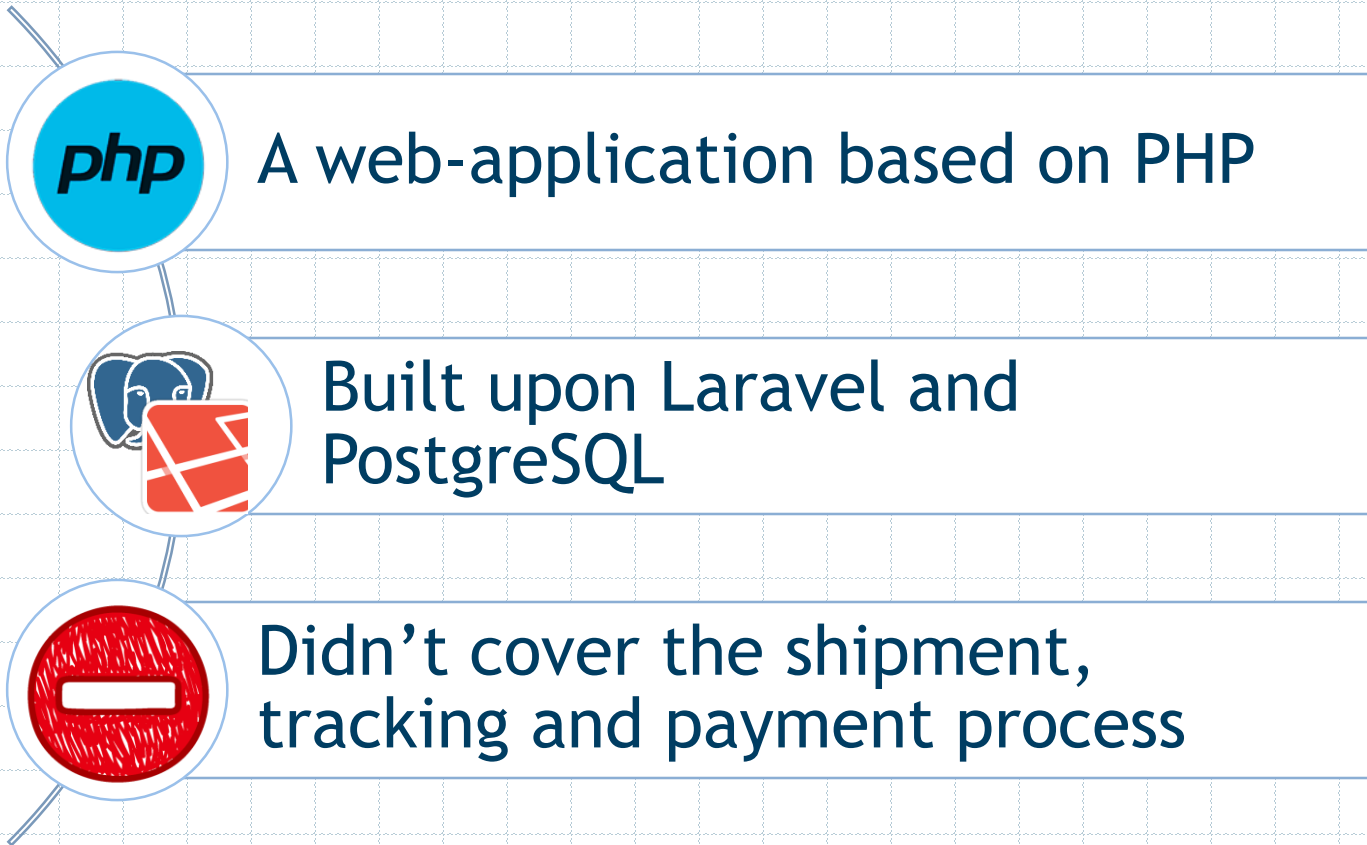
How to create
online-auction
web-app ?

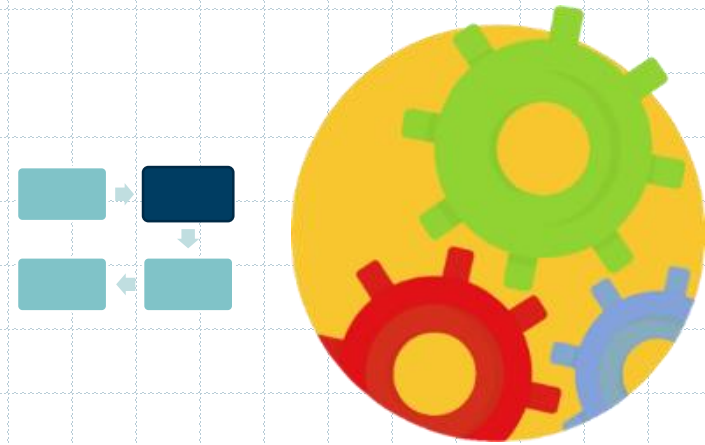
Application
architecture that
suits the base
paper suggestion?

Objectives

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

Starter Limitations





The System

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

System Explanation 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

^aDepartment of Information Management, National University of Kaohsiung, 700, Kaohsiung University Road, Kaohsiung 811, Taiwan

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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



Language

Using Bahasa as it's main language



Performance

A page is expect to be loaded $\leq 3s^*$

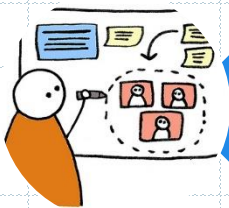


Non-Functional Requirement



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

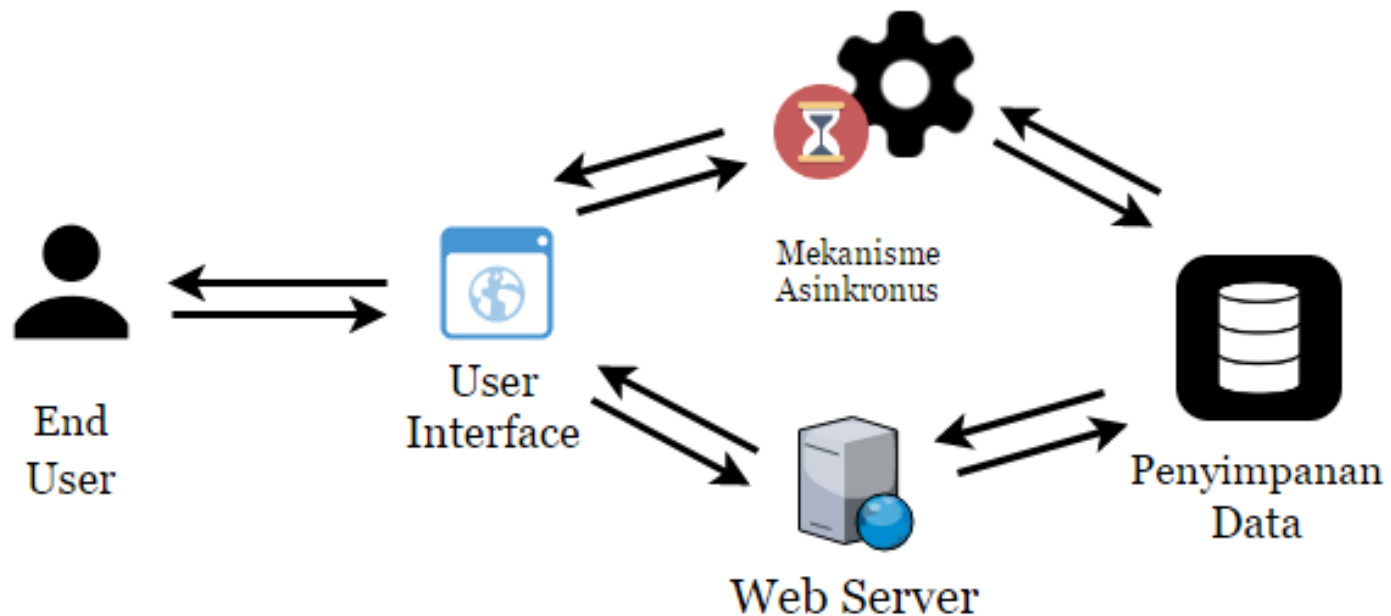


Authorization

Each users provided an account (tested within functionality)

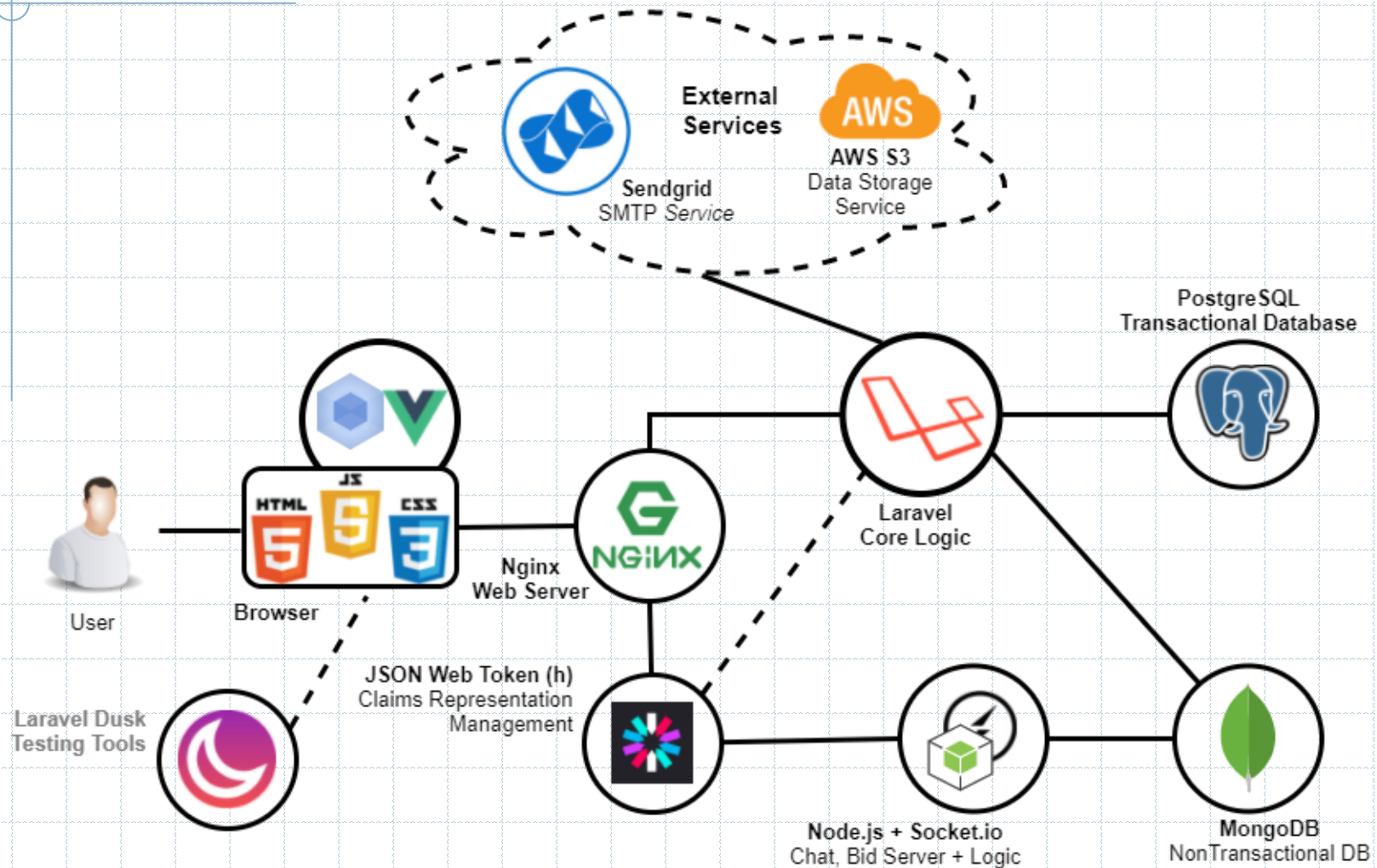
The System - Explanation

Application Fundamental Architecture



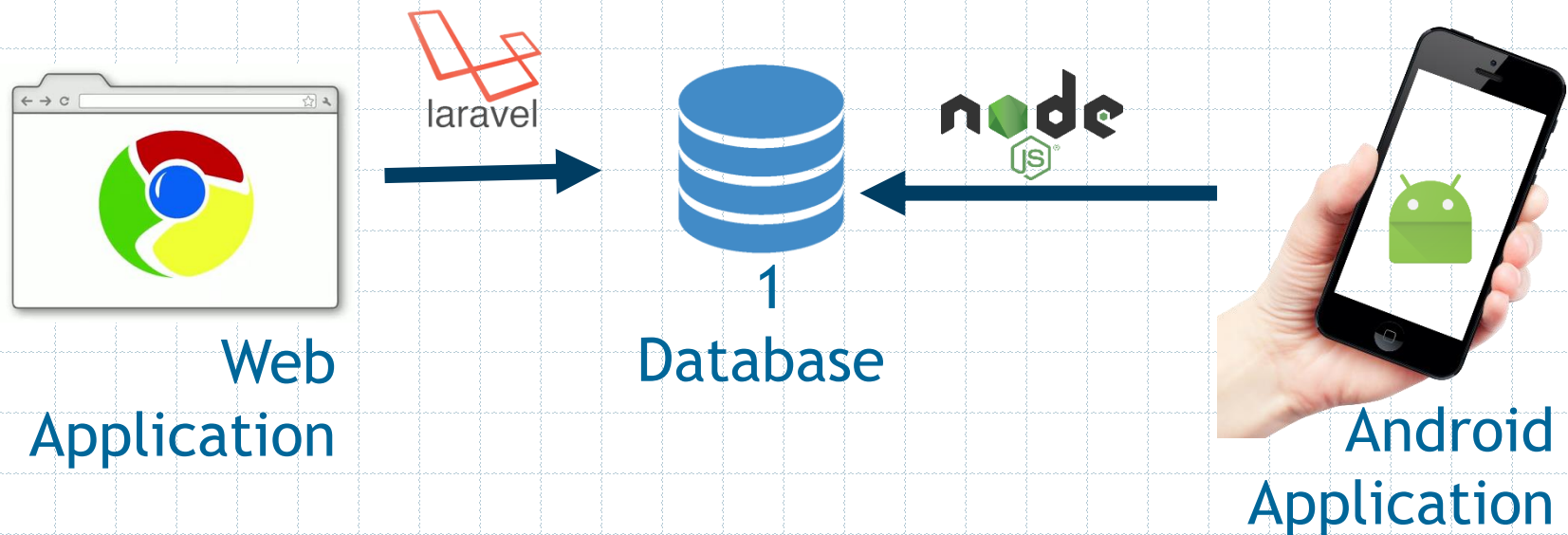
The System - Explanation

Technology Chooseements



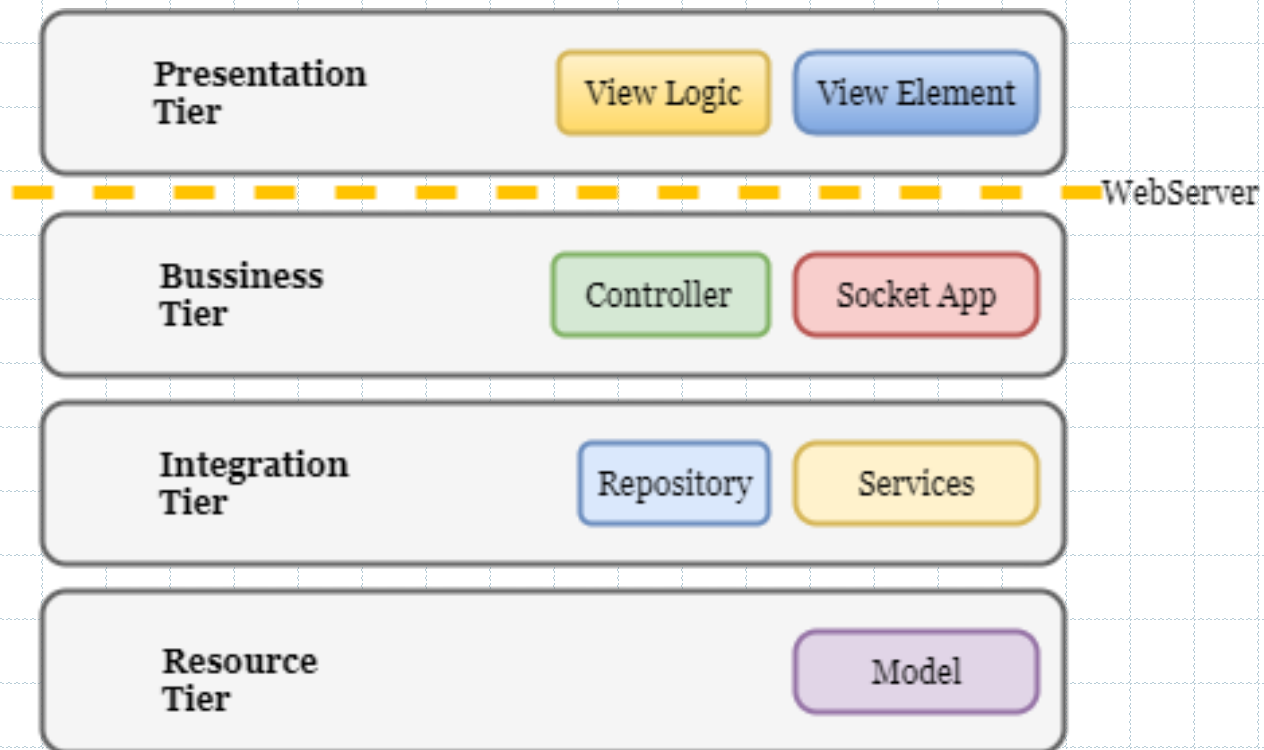
Relation to Andre's Work

- Different back end on each
- Same database

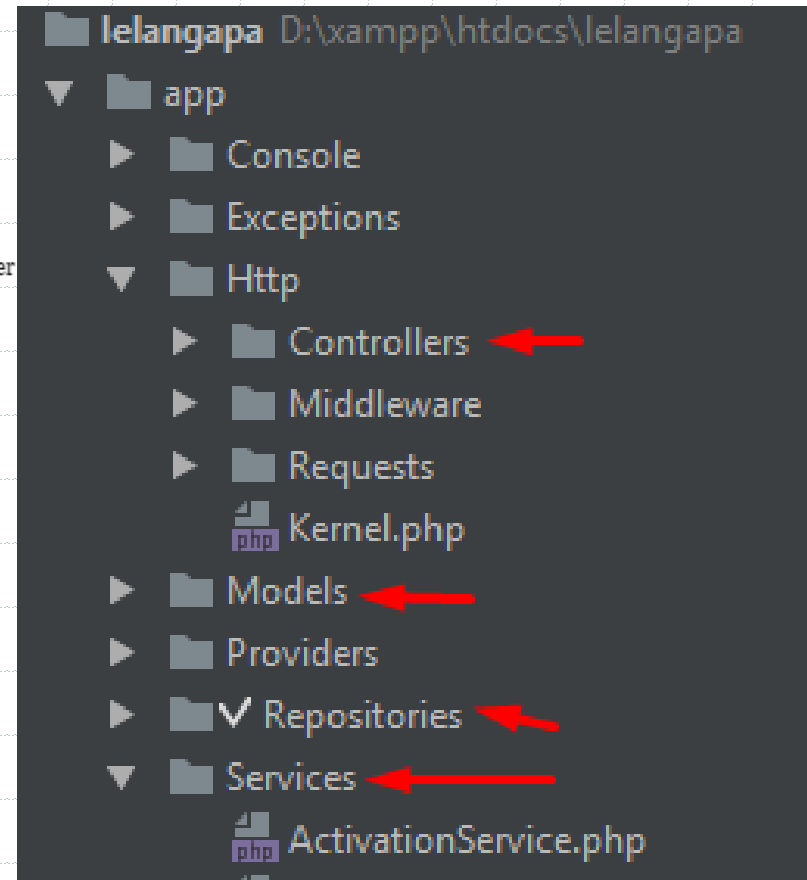
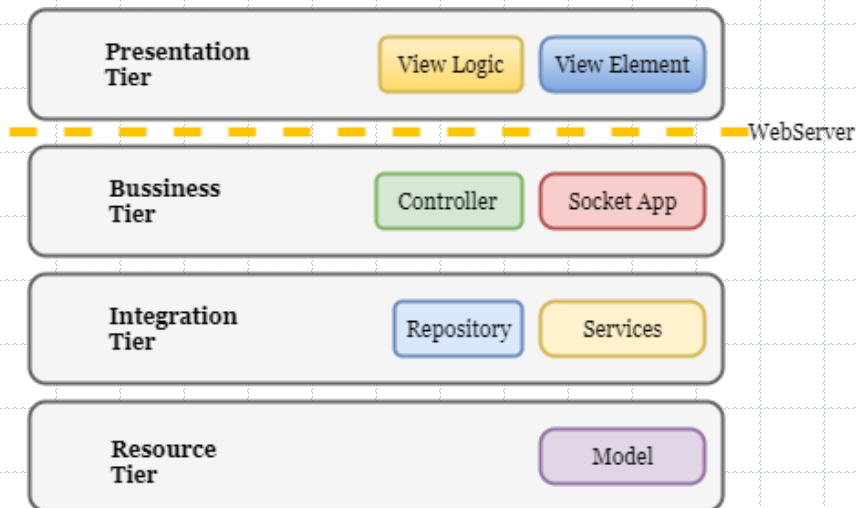


Tiers

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



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





Test & Evaluation

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Undergraduate Thesis Presentation (KI141502) - Plan B

Rancang Bangun Aplikasi Web Lelang Online Berbasis Laravel

Disclaimer Applied



Functional Testing

manually



Speed Test

Recorded Chrome Developer Tools



User Experience Assessment via Survey



Maintainability Assessment via Developer Survey

- 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

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

DOM Loading

- The time html page returned from web server

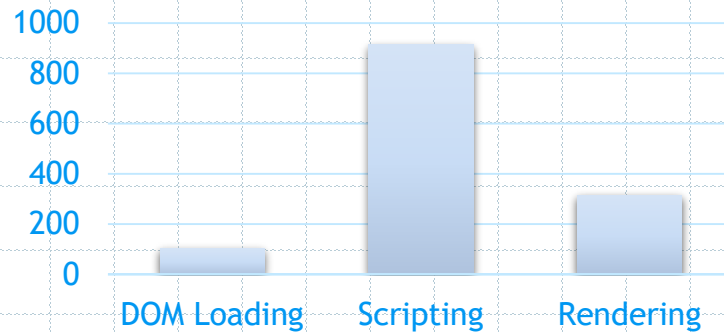
Scripting

- Time taken to fetch scripts and assets

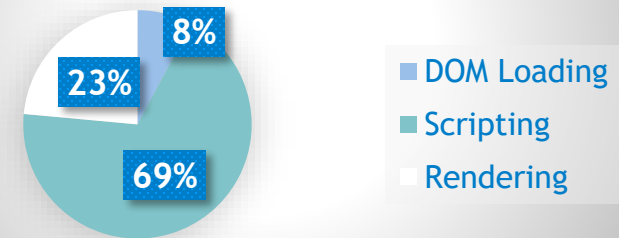
Rendering

- Rendering all content, scripts and assets to browser page

LOADING PAGE TIME DISTRIBUTION

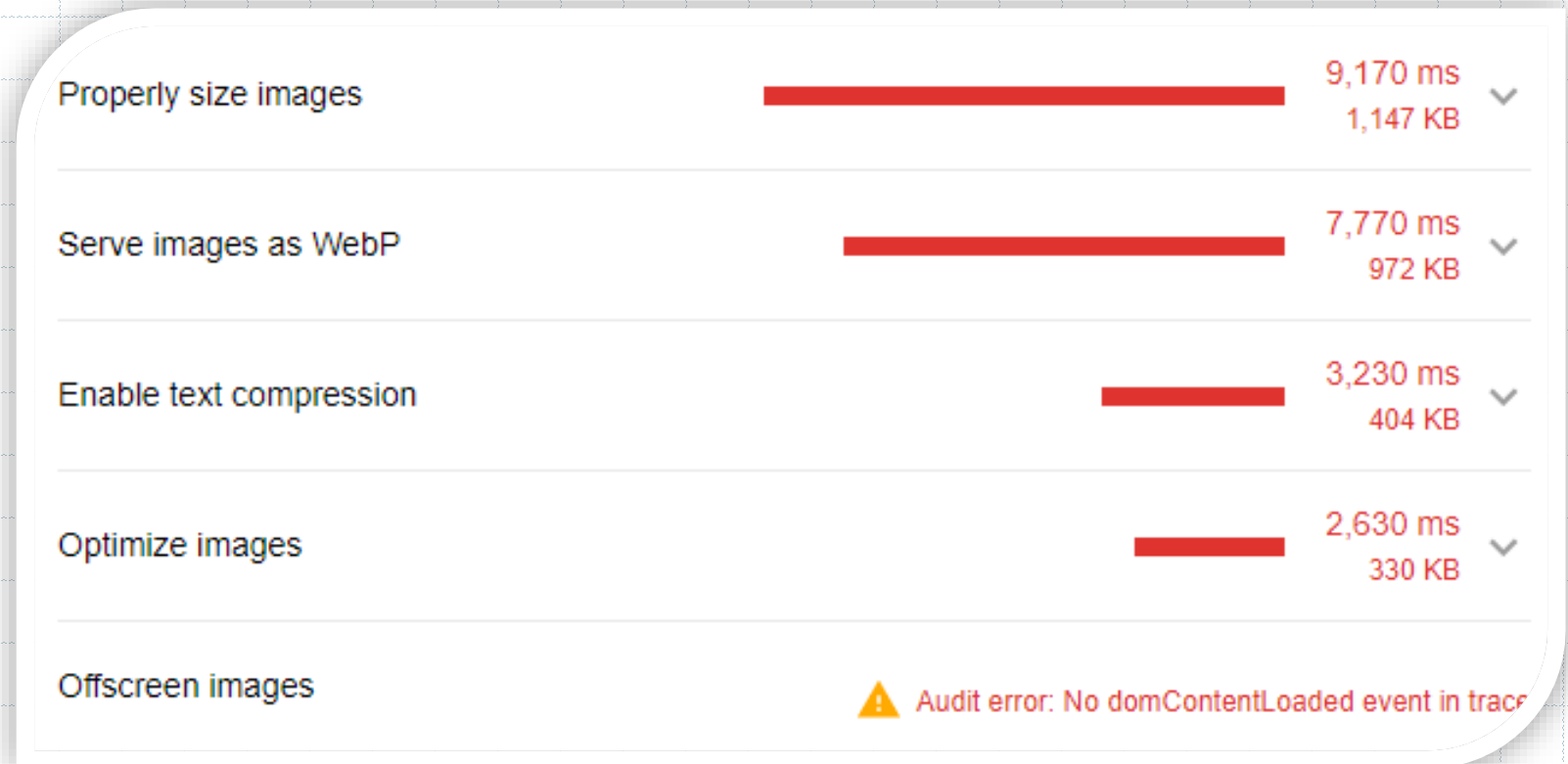


Page Loading Comparison



- 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

- Opportunity analysis from Lighthouse on the slowest page



Testing & Evaluation - Maintainability Assessment

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

Testing & Evaluation - Maintainability Assessment

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

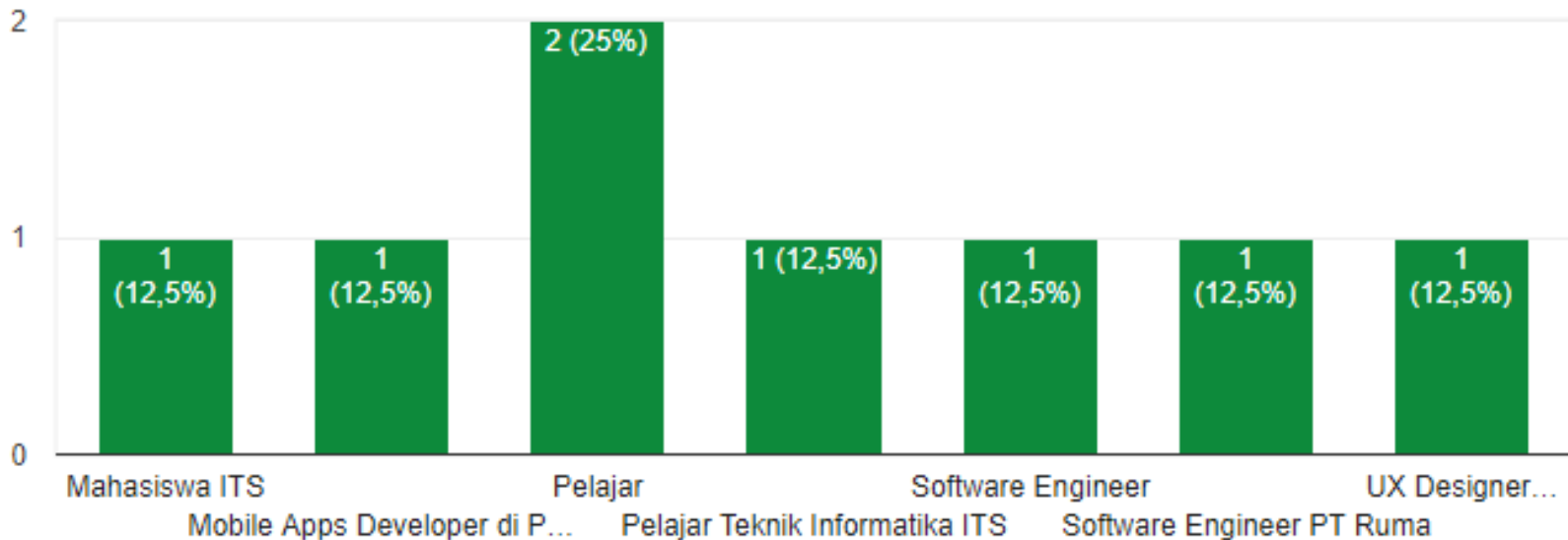
Mangga ..

Buku TA : <https://drive.google.com/open?id=0B5mjwfhp5nceTFVWGp3eVZnU28>

Repository code TA : <https://github.com/ronayumik/web-app>

Respondent's Statistics (1)

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

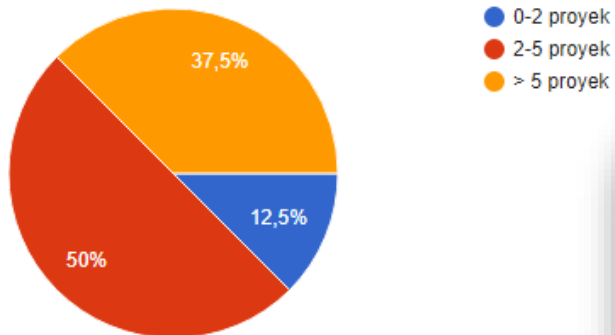


Testing & Evaluation - Maintainability Assesment

Respondent's Statistics (2)

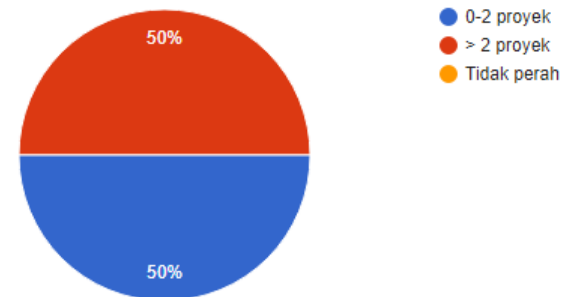
Jumlah proyek/job technical yang pernah dikerjakan

8 tanggapan



Intensitas keterlibatan dalam pengerjaan proyek skala medium-besar dan fitur perubahan yang sangat cepat?

8 tanggapan



Testing & Evaluation - Maintainability Assessment

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)		

Testing & Evaluation - User Experience

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				
	K	u	r	a	n		K	u	r	a	n
	g	Baik	E	x	c		g	Baik	E	x	c
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%

Testing & Evaluation - User Experience

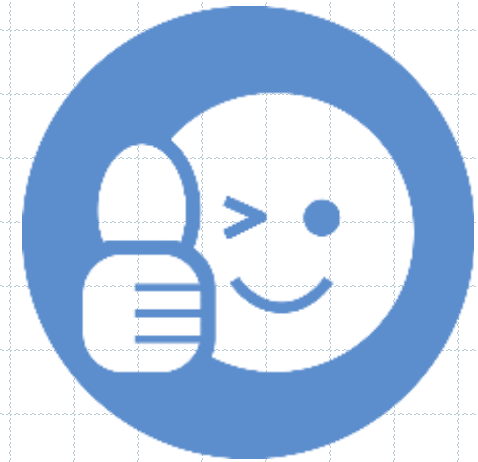
Result's Summary



Testing & Evaluation

Evaluation's Summary

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



Finale

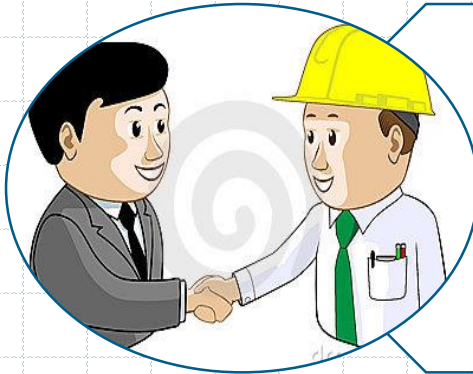
- Conclusions
- Suggestions
- Future Enhancements



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

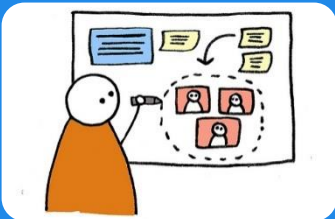
- Involve a legal financial authority in the bussiness process design & monitoring of online auction app.



Further Enhancements



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 & Successful Transaction Pattern Rate using Machine Learning Methods

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

Thank you.

This is the end of this presentation.