

WEB-BASED FOOD & BEVERAGE ORDERING INFORMATION SYSTEM, WEB-BASED INFORMATION SYSTEM AT TUTUG ONCOM RESTAURANT WITH USING THE FCFS METHOD

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ABSTRACT

In the current era, technological developments are developing rapidly in various regions. The technology that is currently popular, namely mobile technology, uses various sophistication in the world of entertainment, education to the business world. Advances in technology have many advantages and benefits that can streamline when doing work. as a model for ordering culinary and drinks at a restaurant. This food and beverage ordering software is used to make it easier for customers to place food and beverage orders without having to wait in long queues, so a food and beverage ordering software was built using the FCFS (First Come First Served) method on webservice- based QR Code technology. As long as there will be several tests, it can be concluded in this study that the average waiting value for customers is from three customers, namely 12.33 minutes, and from five customers, namely 42.4 minutes. create a webservice using the HTTP protocol with the flow of creating a database, service, web/ backend, using a UML waterfall.

Keywords: *UML, SQL, Database, FCFS, web/ backend*

1. INTRODUCTION

Along with the development of the times, information and communication technology at this time is very important growing rapidly and has spread to various culinary fields, for help human work to be more effective and efficient. Development this technology every day lots of new innovations from technology. The advantages of this technological development are: very helpful in people's daily activities. The role of information technology in all sectors of life have an impact on the economic side, human

society and culture. Development information technology is very rapid and supported by advanced computer technology Sophisticated makes all work digital based.

It is undeniable that the existence of food places that are popping up at this time more and more with the encouragement of today's technology, namely through social media, for example Instagram, Facebook, Tiktok, and many other platforms. In the digital age now ordering food and drinks so far many are still using it the manual way or ordering

normally where consumers will ask what menus are available along with the price at the restaurant.

In addition, difficulties in ordering are caused a large queue of orders, consumers will find it difficult to order so that consumers are not comfortable, as well as employees difficulties when customers have many order errors that have been ordered by consumers often happens, because they still use manual or written orders.

So to realize consumer satisfaction in ordering food and beverages a web-based food & beverage ordering information system with using the FCFS (First Come First Served) method to make more orders Computerization also makes consumers comfortable with ordering services .

2. LITERATURE REVIEW

a. System Information

An information system is an organized combination of people, hardware , software, communications networks and data resources that collects, transforms and disseminates information in an organization. In addition, Information Systems can be defined as a series of interrelated components that collect (and retrieve), process, store and distribute information to support decision making

and control of the company. (Mayssara A. Abo Hassanin Supervised *et al.* , 2019)

b. Booking

Ordering is the whole process of activities related to the process, manufacture, how to order or order. Also ordering can be interpreted as receiving orders from customers for a product, food, place, and others. (Hidayatullah, 2018)

c. Web

A website is a series of linked web pages and their files are interrelated. The web consists of the origin of the page or pages, as well as the formation of pages called the homepage . The homepage is at the top, with related pages below it. Generally any pages below the homepage are considered child pages, which contain hyperlinks to other pages on the web. (Fabiana Meijon Fadul , 2019)

d. PHP

PHP (Hypertext Preprocessor) is the script used to create dynamic Web page. Dynamic means which page will be display to be created when the page is requested by the client . The mechanism causes information Which accepted client always Which latest or up to date . And all scripts PHP is executed on the server where the script is executed. (Haerofifah , 2022)

e. MySQL

MySQL is a SQL database management system software (Structure Queries Language) or a multithreaded , multi-user DBMS . Also defined as a database management system . Database is a data storage structure for adding, accessing and processing data stored in A databases . Besides That MySQL can said as base data connected (Relational Databases Management System/RDBMS). Database servers MySQL has high access speed, easy to use and reliable . MySQL was developed to handle large databases quickly and has been used successfully. (Goods, Web and On, 2015)

f. UML

UML (Unified Modeling Language) is one of the most reliable tools in the world of object-oriented system development. UML has several or a number of graphic elements that can be combined into diagrams. The diagram will describe or document several aspects of a system. UML consists of structures classification , dynamic behavior , and management models . (Saputri *et al.* , 2019)

g. Laravel

Laravel is a PHP framework with open code (open source) with an MVC (Model-View- Controller) design that is used to build web applications . With

the many features provided by Laravel to make it easier for website application developers . (Widhi *et al.* , 2019)

h. Waterfalls

Waterfall is a much traditional software development process worn in project project device soft. (Fortune, Ramdhani and Hantoro, 2009) Waterfall has stages for software development:

1. Requirements This is the first and most important step of the Waterfall Model . It involves collecting information about the final solution from customer customer needs and understanding. This involves a clear definition of customer goals, expectations of the project and the problem the final product is expected to solve
2. Design This stage consists of how the software will be built, in other words planning software solutions.
3. Implementation The entire system design that has been prepared before will be converted into program codes and modules which will later be integrated into a system.
4. Verification Testing can be categorized into unit testing (performed on a specific module of code), system testing (to see how the system reacts when all module Which integrated) And reception testing (done with or the customer's name to

see if all the customer's needs are satisfied).

5. Maintenance This phase occurs after the end-product has been tested and approved by the customer. A number of revisions are usually marked next to submission to facilitate updates or changes at a later stage.

i. FCFS (First come First served)

The FCFS (First Come First Served) method is the method used to perform queue Which Enough long And so that fast so need method Which very appropriate to be implemented in the application. In this method the queue to order food and drinks will be effective because the first order will

be served first and will be served first too. This method also assumes that it is first come first to be served . The process that first requests time allotment to use the application will be served first. On this scheme, that process request servers First time will allocated to servers. (Nasrallah Syariful Anam, 2018)

3. IMPLEMENTATION METHOD

3.1 Framework Work Study

Method Implementation program system booking food And drinks at the Tutug Oncom Restaurant will in describe in lower This :

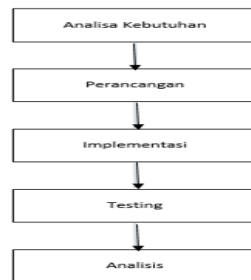


Figure 3.1 Methodological Process i Researcher i tian

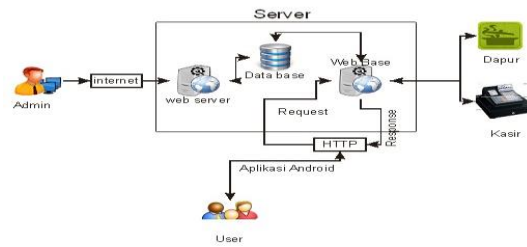
3.2 Design

This process used For replace needs - needs on as representation to the butt application . Design must Can implementing and documenting need system . in do planning as for terms _ _ become following :

- Overview _ System

Related process design use how the software will be running , processes that will happen in application

earlier , how are these processes each other related as well as as a result (outcome) on software. Process necessary drafted with ripe for software to be walk with Good and synchronous asa.In a way holistic , manufacturing system on the device soft This through a number of stage that is among other things to be following :



Picture 3.2 Description Design

3.3 Implementation

At this stage all the designs that have been made will be implemented into an application which will later be used to make it easier for users to order food and Drink. This application must follow the design flow that has been made before in order to minimize errors in making the application.

3.4 Testing

Deep testing stage This is try out application so that it really is in accordance with need . At stages this is done For find possible mistakes _ _ _ will happens in the application that is made. After checking out the whole the application so next testing For all versions that have been made using black container testing .

- Black box trying out
Black container checking out is carried out according to requirements functional from device soft , done No at the beginning stage testing , express errorf – error in the wrong function lost , inter advance , access to database external , performance ,

program initialization and termination .

3.5 Analysis

at stages This will need multiple device users soft to fill like questionnaire , so can know is device soft this is very useful for the user Alone or no . A number of benefit specifically for research _ _ This means : make effective moment booking culinary and beverage , customers only do payment If order Already reserved , origin party kitchen If order Already served then the user accepts notification . use exists stages This Can makes it easier to analyze application which designed .

3.6 Scenario Testing

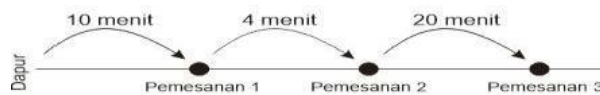
1 Testing QR code

On testing *QR code* researcher can test is Already Work with Good in system application Which Already built. Testing This Also test *QR code* Already Can in scans according to number table Which ordered And in do *login* to application Which Already in get up.

2 Testing FCFS

On booking food And drinks using

a *mobile application* by applying the FCFS method (*First come First served*). Researcher test at the *request stage* its purpose for know who Which will in response first *request* _ sent via a *mobile application* . There is a number of stage testing Which will applied :



Nama Pemesan	Waktu Tiba	Lama Eksekusi	Mulai Eksekusi	Selesai Eksekusi	Waktu Tunggu	TA
Pemesan 1	08.04	10	08.04	08.14	0	10
Pemesan 2	08.04	4	08.14	08.18	10	14
Pemesan 3	08.05	20	08.18	08.38	13	23
					$\sum TA = 47$	
					Rata - rata = 15.66	

a. On stage First will There is 3 request Which will order Eat in a manner together.

In conclusion is in process booking with method with n found flat – flat wait is 15.66 minute.

b. On stage second will There is 5 request order food in a manner random.

In conclusion is in

process booking with method random / *random* found the average waiting time is 19 minute.



Nama Pemesan	Waktu Tiba	Lama Eksekusi	Mulai Eksekusi	Selesai Eksekusi	Waktu Tunggu	TA
Pemesan 1	08.04	8	08.04	08.12	0	8
Pemesan 2	08.05	6	08.12	08.18	7	13
Pemesan 3	08.07	10	08.18	08.28	11	21
Pemesan 4	08.12	4	08.28	08.32	16	20
Pemesan 5	08.15	16	08.32	08.48	17	33
					$\sum TA = 95$	
					Rata - rata = 19	

1. Testing Memory

On testing this memory researcher test use memory *smartphone* device . What is meant is testing memory at this stage is test the memory size used when ordering application food installed successfully and run to in A device phone .

2. Network Testing

Network testing in stage This is monitoring level activities network

Which needed A device *device* .

4. RESULTS AND DISCUSSION

a. Implementation

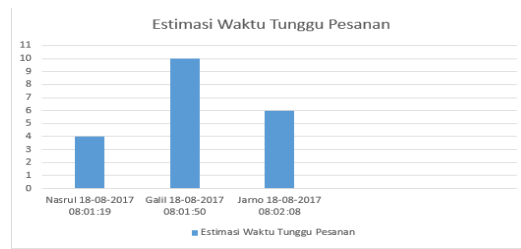
System implementation aims to ensure that the system built can work properly and as needed . Before the system is implemented, the system must be ensured free from errors.

b. Trials_Application

Trial ordering culinary and drinks

simultaneously using three different

devices and 3 different usernames .



Picture 4.1 Diagram booking simultaneously _ _

Nama Pemesan	Waktu Tiba	Lama Eksekusi	Mulai Eksekusi	Selesai Eksekusi	Waktu Tunggu	TA
Pemesan 1	08.01	4	08.01	08.05	0	4
Pemesan 2	08.01	10	08.05	08.15	4	14
Pemesan 3	08.02	6	08.15	08.21	13	19
					$\Sigma TA = 37$	
					Rata - rata = 12.33	

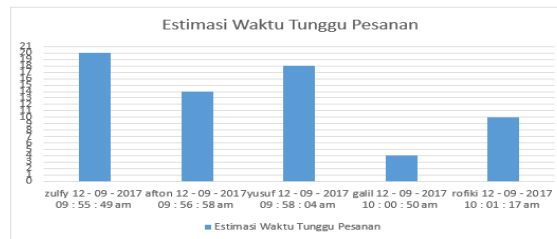
Table 4.5 Calculation *turn around* order simultaneously

Conclusion :

flat wait is 12.33 minute.

So customer order food in the same way but enter into the list booking food and drink do not coincide. And process booking with method together found flat –

a. Test try booking food And drink in a manner random / *random* with using 5 different devices and 5 different usernames



Picture 4.2 Diagram booking in a mannerrandom / *random*

Nama Pemesan	Waktu Tiba	Lama Eksekusi	Mulai Eksekusi	Selesai Eksekusi	Waktu Tunggu	TA
Pemesan 1	09.55	20	09.55	10.15	0	20
Pemesan 2	09.56	14	10.15	10.29	19	33
Pemesan 3	09.58	18	10.29	10.47	29	47
Pemesan 4	10.00	4	10.47	10.51	47	51
Pemesan 5	10.01	10	10.51	11.01	50	61
					$\Sigma TA = 212$	
					Rata - rata = 42.4	

Table 4.6 Calculation *turn around* booking in a manner random / *random*

Conclusion :

formerly enter in list order food And drink.

In chart in on can in See if each food order is made random / *random* with no time together. Order still message in accordance order Which especially

And process booking with *random* way found on average wait is 42.4 minute.

b. Test Try Evaluation *Databases*

Test try databases This tester try is

Already in accordance with web Which has made. For table *tb_dapur* , *approve* already cooked food finished cooked. For table *tb_dish* , input menu food and drink into the web and stored in *databases* which are already made. For table *tb_table* , enter table number with table that

already exists and will emerge code *QR bar code* For scan number table For order food And drink. For table *tb_order* , *approve* as a transaction payment with all menu Which has ordered by customer. For *tb_user* table , add user on side web.

Table 4.7 Evaluation Databases

No	Table	Field	Keterangan	Status
1	tb_dapur	-id_hidangan -jml -satuan	-menentukan id menu hidangan yang telah dipesan dengan itu nama hidangan mengikuti id yang telah dibuat -untuk jumlah menu yang dipesan oleh pelanggan. -untuk harga satuan yang dipesan.	Sesuai
2	tb_hidangan	-idhidangan -foto -namahidangan -harga	untuk menentukan id menu hidangan yang akan dipesan -menambahkan foto hidangan menu didalam pesanan. -input nama menu yang sudah dimasukkan. -mengetahui harga untuk setiap menu.	Sesuai
		-ket -waktum masak	-keterangan untuk menu (minuman/pasau dingin) -untuk estimasi waktu memasak tiap jenisnya.	
3	tb_maja	-idmaja -nomormaja	untuk menentukan meja -input nomor untuk mengidentifikasi kode meja.	Sesuai
4	tb_pemesanan	-id_pesanan -id_user -nomormaja -id_hidangan -tglpesan -qty -totalbiaya -status -waktu	untuk id pesanan yang sudah dipesan oleh pelanggan. -untuk nama pelanggan yang telah memesan. -untuk nama yang telah dipesan oleh pelanggan. -menentukan id menu hidangan yang telah dipesan dengan itu nama hidangan mengikuti id yang telah dibuat. -untuk tanggal yang telah dipesan oleh pelanggan. -untuk jumlah menu yang dipesan oleh pelanggan. -untuk total biaya semua pesanan yang sudah dipesan oleh pelanggan. -untuk mengetahui apakah pesanan kantong (belum dimasak), proses (sedang dimasak), terbayar (sudah melakukan pembayaran) -waktu pesanan masuk kedalam sistem admin web.	Sesuai
5	tb_user	-id_user -nama -password -level	untuk sebagai key/rolan tabel utama. -nama untuk melakukan login web. -untuk kunci agar dapat masuk kedalam halaman web utama. -untuk hak akses masuk kedalam web.	Sesuai

c. Test Try Evaluation *webservice*
Test try *webservices* when process POST and GET from web side to android side. *webservice* This use model JSONs For exchange data

And using the HTTP protocol. In the table under This will explained service process to send data. For implementing *code* included in Attachment 2.

Table 4.8 Evaluation webservice

No	Nama File	Keterangan
1	listmakanan.php	Untuk menambah menu – menu makanan dan minuman dengan cara disimpan terlebih dahulu kedalam database yang sudah dibuat dan terhubung dengan koneksi.php
2	koneksi.php	Sebuah penghubung dari android ke <i>webservice</i> kedalam database.
3	detail.java	Proses memilih dan menampung semua pesanan yang sudah dipilih untuk nantinya akan dikirimkan kedalam keranjang pesanan.
4	cart.java	Semua pesanan akan masuk kedalam keranjang pesanan untuk nantinya akan di POST kedalam database.
5	api_pesanan.php	Proses <i>webservice</i> disini dari dalam database akan dikirim ke bagian web pemesanan. Sehingga dapat dilakukan proses pemasakan dan transaksi pembayaran.
6	pemesanan.php	Menampilkan semua pesanan yang telah disimpan didalam database dari kiriman <i>webservice</i> untuk dilakukan <i>approve</i> transaksi pembayaran.

4.3 Test Analysis

From a number of testing in on come to the conclusion that all testing is in accordance with the scenario testing. Testing *QR code* has come to that conclusion Already Can *login* with Correct in application *smartphones* . Testing from the method side FCFS Also running properly And according to the method used. There is a number of conclusion, because there are 2 types of research in in this method. Namely 3 customers sent And get conclusion that average time Wait 12.33 minute. In 5 order Also get conclusion that order average time Wait 42.2 minute. Besides testing method Also applied test *webservice* , channel data exchange between *android* side And side web Already in accordance.

The weakness of the analysis the research above, from the side of *QR testing Code* . If you want to use the application android This, so must have software *barcodes scanners* especially formerly so that Can do *scanners* on order food and drink. On the FCFS method side has weaknesses Also, If There is 2 order. customer first order the consuming menu time Wait 20 minute And order second order food with time wait 4 minutes. So if you use method This order second must waiting for 20 minutes meanwhile order order second only 4 minute. Hence the weakness of the method FCFS must be

done by another method in order the ordering time Wait A little come first. Weakness from sidememory in study This , If the application is always used to order food And drink. Must have a larger ROM in order can keep application Which has worn. From side network, researcher find weakness in use of this application. Network Which used must have data Internet And speed Internet Which tall.

5. CONCLUSION

5.1 Conclusion

1. Application booking food And drink in House Eat Tutug oncom , in for use protocol HTTP with channel making databases , *services* , *web / backend* .
2. The results of trials conducted with two method testing, that is method simultaneously and randomly obtained results average. Method together long time results Wait booking from 3 order 12.33 minute, whereas method random long time results Wait from 5 order 42.2 minute with method random. And results from test try on *webservice* Already appropriate .

5.2 Suggestion

Based on experience in process making this application, there are a number of suggestion Which proposed by composer

related For development application more carry on. Suggestion – suggestion the between other :

1. On study This Not yet available for iOS *platforms* and feature support time reporting, so that For study next it will be better if added reporting features and *platform* Ios .
2. Application method FCFS on application booking food and drinks have results relative waiting time long. Method This apply order First Which must served especially formerly, by Because That applied method other so that time Wait relatively short.
3. Test result on application booking food And drink found network a number of *provider* Which No stable on ordering application. So must use network Which stable like *Wi-fi* .

6. LIST REFERENCES

- Goods, P., web, B. and On, M. (2015) 'Chapter 2 review library and base theory 2.1', (2010), pp . 3–6.
- Danilo Gomes de Arruda (2021) 'DESIGN OF A WEB-BASED FOOD ORDERING INFORMATION SYSTEM AT FOODCOURT RSKIA BANDUNG', 2(10), p. 6.
- Fabiana Meijon Fadul (2019) ' websites ', pp . 11–31.
- Haerofifah , D. (2022) 'Design of Web-Based Food Ordering Applications', *Nuances of Informatics* , 16(1), pp . . 101–107. doi: 10.25134/nuansa.v16i1.4771.
- Hidayatullah, D. (2018) 'Chapter II Theory Foundation', *Journal of Chemical Information and Modeling* , 53(9), pp . . 8–24.
- Inayati, I. (2015) 'Web-Based Food Ordering Application', *e-NARODROID* , 1(2). doi: 10.31090/narodroid.v1i2.71.
- Mayssara A. Abo Hassanin Supervised , A. *et al.* (2019) ' Online-Based Accounting Information Systems ', *Paper Knowledge . Towards a Media History of Docs* , 7(1), pp . 1–33. Available chat : https://www.bertelsmannstiftung.de/fileadmin/files/BSt/Publikationen/GrauePublikationen/MT_Globalization_Report_2018.pdf
- 0Ahttp://eprints.lse.ac.uk/43447/1/India_gobalisation%20societyandinequalities%28lsero%29.pdf%0Ahttps://www.quora.com/What-is-the.
- Nasrallah Syariful Anam, V. W. (2018) 'Implementation Method FCFS (First come First served) On the Food Ordering Application Using a Web Service- Based QR Code Case Study : Mie Kober Jember Nasrullah

- Syariful Anam (1310651018)
Viktor Wahanggara , S . Kom, M.
Kom Engineering Study Program'.
- Rejeki, S., Ramdhanisa, KF and Hantoro,
K. (2009) 'INFORMATION
SYSTEMS WEB BASED FOOD
MENU ORDERING Sri Rejeki 1 ,
Khairunisa Fadhillah Ramdhanisa 2 ,
Kusdarnowo Hantoro 3 1', *Computer
Science* .
- Saputri, Z. R. *et al.* (2019) 'Design Get up
Information Systems Food Ordering
Web-Based At Cafe Surabiku ',
*Journal of Technology and
Information* , 9(1), pp . . 66–77. doi:
10.34010/jati.v9i1.1378.
- Syofian , S. and Damar, AA (2020)
'Implementation of the First Come
First Served Dan Haversine
Algorithm On Application Booking
Food', *Journal Science And
Technology UNSADA* , X(1), pp .
31–40. Available at :
[https://unsada.e-
journal.id/jst/article/view/75](https://unsada.e-journal.id/jst/article/view/75).
- Widhi, AN *et al.* (2019) 'Journal SCRIPT
Vol . 7 No. _ December 2, 2019
USE OF FRAMEWORK Laravel
FOR DEVELOPMENT Journal
SCRIPT Vol . 7 No. 2 December
2019 E-ISSN : 2338-6313', 7(2), pp .
232–238.