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Analysis and Design Rent Toys Application in the Jakarta Region Based on Web

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Abstract*— Toys are a very important and influential party of many children.when children playgames barin start to grow and start to recognize shape and color. Usually toys have many forms with varietive prices, some are cheap and some are expensives. Some parents prefer buying cheap toys with assumtion toys are easely damaged and with exclusion of safety factors and age suitabilities. However parents from middle high social prefers buying high quality toys for safety reasons. The most importanting in choosing toys is age suitabilities with toy types. For that reason it is necessary to build a renting toy application with age classification. Analysis and development renting toys uses UML (Unified Modeling Language) and development system uses Prototype. The result of this is a toy renting application with age classification based on web.
Keywords*— Toy, Game, Prototype, Rent, Web.

INTRODUCTION

With the development of internet technology is a promotion media which is a very cheap and become a new business opportunity for a company to expand marketing with building a web.[1] Many technologies that provide ease in daily activities such as rental services children toys. Rent itself have meaning is a process of lending and borrowing activities,while rental is a activities that serve borrowing services with no ignore a conditions or agreement and terms applicable within the organization use achieve a common goal.[2] Usually toys have many forms with variety prices, some are cheap and some are expensives. Some parents prefer buying cheap toys with assumption toys are easily damaged. However parents from middle high social prefers buying high quality toys for safety reasons.

Basically, all types of games have the same goal of playing with fun. which distinguishes is influence or effect of the game type.[3] Playing activities can also help a child to know about himself, with whom he lives and the environment in which he lives, example his playing activities are game hide and seek, police game and villains.[4] Toys are the main support in play activities. MainaToys are present in various types, concepts, and aspect.[5] Games are a loyal contest between players who interact with each other by following certain rules to achieve a common purpose.[6] Type of game among others: [7] traditional game or commonly referred to as the game of the people the game that people do for generations and is the result from local cultural excavations which contained the values of education and cultural values, and can be fun to play it. Traditional games are generally played in groups or at least two people, [8] educational games are all forms of games designed to provide an educational experience or learning experience to their players, including traditional and modern

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games given educational and teaching content, as well as games by sex. [9] Based on research Dinella et al confirmed that toy type was a factor in determining children's interests, with boys reporting more interest in masculine toys than feminine toys, and girls expressing more interest in feminine toys than masculine toys. However, children also reported that they liked neutral toys the same amount as they liked the toys stereo typed for their own gender group.

Not always play is considered a waste of time. Play has a function for children as follows:[10] suggestions to bring to nature of society, Being able to know your own strength, Got a chance to develop a fantasy and bring a tendency of the carrier, Train forge feelings, Get a happiness, fun and satisfaction, Train yorself to obey with applicable regulations. Not all toys can be used, because there is an age limit on the toy. For that reason it is necessary to build a renting toy application with age classification and based on need. The purpose of making toy rental applications, is expected to help parents in the selection of toys that appropriate age of children.

I. RESEARCH METHODS

Data collection technique

To collect data on the design of the toy rental system using two approaches are interviews with parents have children with age range of one month to twelve years and then the questionnaire that can be filled by the general public.

Systems Development Method

To develop the toy rental system is using the Prototype method. Definition of Verdi Yasin (2012:19) prototyping paradigm begins with the collection of needs. Ideally the prototype serves as a mechanism to identify software requirements. [11]

Design Method

In designing a child toy rental system using Unified Modeling Language or UML is a standart set of diagramming techniques that provides a graphical representation to ilustrate modls on a system development project through implementation (Alan Dennis, 2015:34). [12]

II. RESULTS AND DISCUSSION

Analysis

The analysis stage is early stage on designing an app. On this stage an app will be created and designed. Business process flow on the toy rental system the tenant must create an account first, after that login to be able to access activity as a tenant. if already signed in on the main page the tenant can place an order, then make a payment. The owner will confirm the payment, if payment data already appropriate, then the owner will do the delivery item. Orders arrive at tenants, if already completed doing the renting, tenant will return the toy and the toy arrived at the owner.

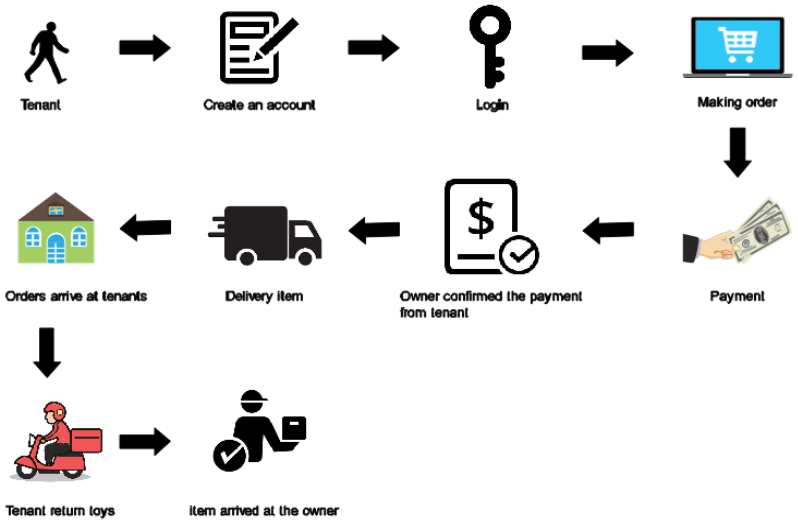

Figure 3.1 Business Process Flow

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SWOT Analysis

Table 3.1 SWOT Analysis

Strengh	• All processes are done through the system. • Items or toys already have SNI standard.
Weakness	• Can not see physical items directly. • Risk data security guarantee is still not accurate.
Opportunities	• Easy in choosing toys according to the needs and age of the child.
Threats	• Rivalry with other tenant apps.

SWOT Analysis Strategy

Table 3. 2 SWOT Analysis Strategy

Internal / **Eksternal**	**Strength** • All processes are done through the system. • Items or toys already have SNI standard.	**Weakness** • Can not see physical items directly. • Risk data security guarantee is still not accurate.
Opportunities • Easy in choosing toys according to the needs and age of the child.	**SO Strategy** Implementation of Rent Toys Application.	**WO Strategy** Build applications on toy rental and rental data security assurance is more accurate and more secure.
Threats • Rivalry with other tenant apps.	**ST Strategy** Provides quality toys with SNI standards and guaranteed toys for use by children.	**WT Strategy** Build toy rental applications guaranteed between items with pictures listed in the app..

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System Design

Use Case Diagram

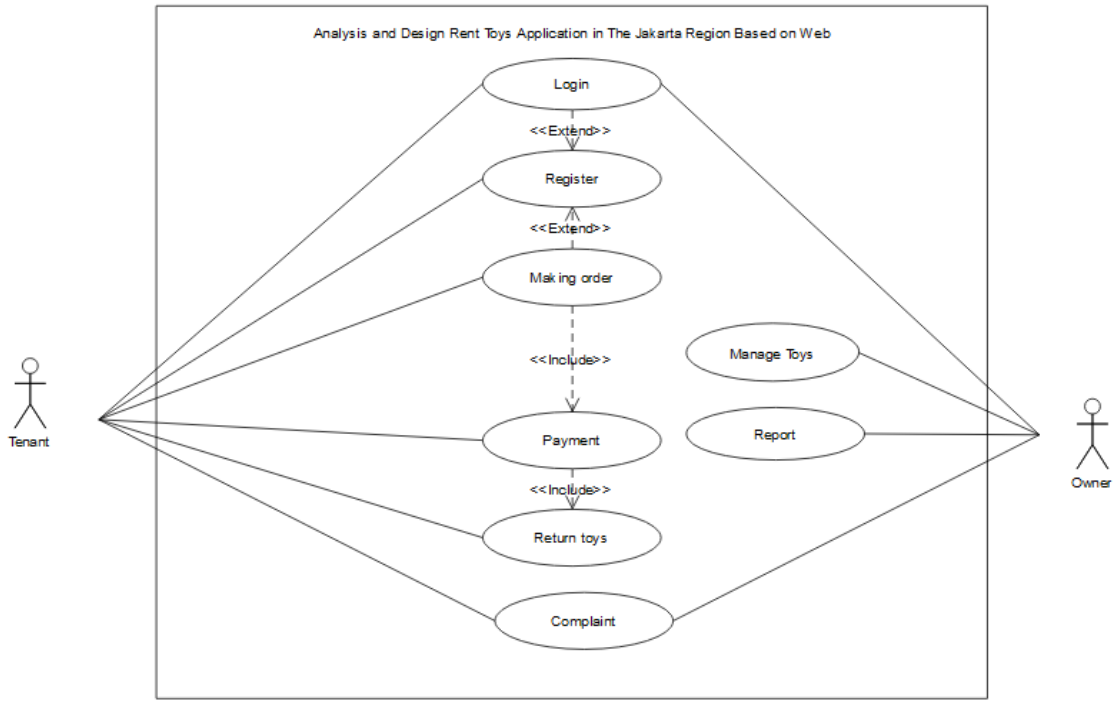

Figure 3.2 Use Case Diagram

Figure 3.2 describes the interaction between tenants and owners in the system to be built and designed.

Activity Diagram

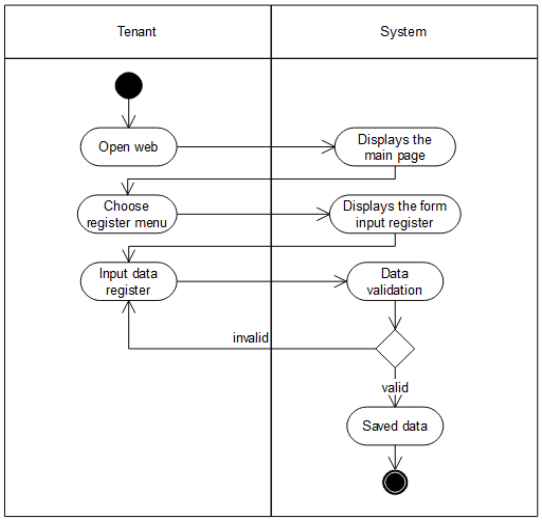

Figure 3.3 Activity Diagram Register

In figure 3.3 describes the tenant registering, in order to get a username and password to log in.

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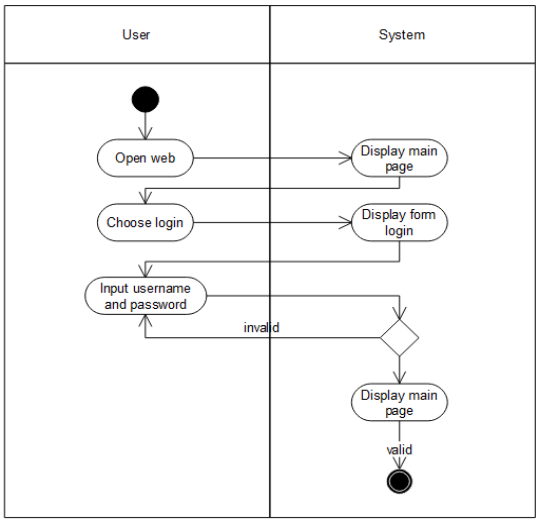

Figure 3.4 Activity Diagram Login

In figure 3.4 explain the user login by entering the username and password, if the data entered correctly will go to the main page, if the wrong data will return on the login page.

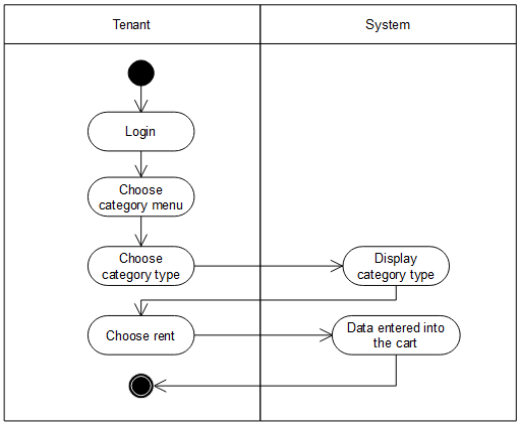

Figure 3.5 Activity Diagram Order

In figure 3.5 explain the tenant can order after log in.

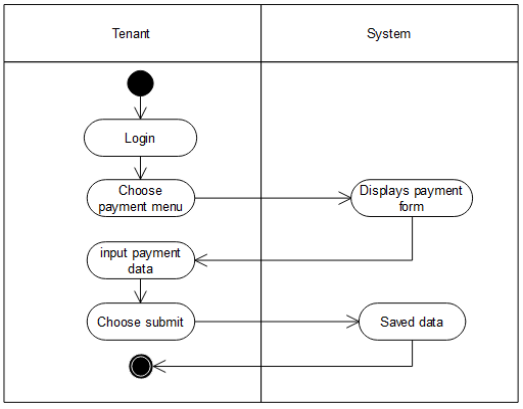

Figure 3.6 Activity Diagram Payment

In figure 3.6 explained that tenants can input payment data after log in.

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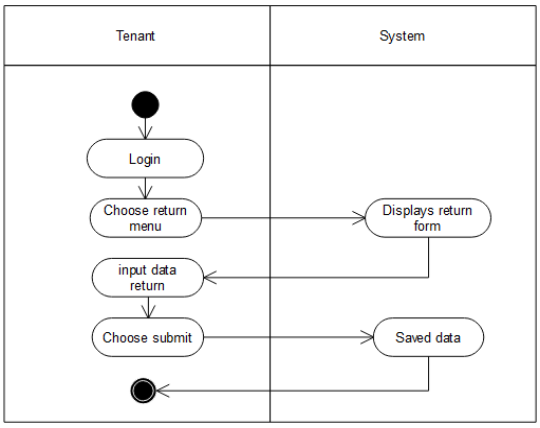

Figure 3.7 Activity Diagram Return Toys

In figure 3.7 explain the tenant can input the return data after log in.

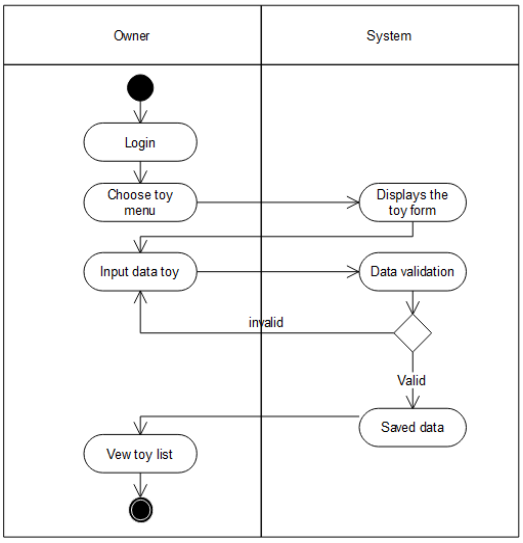

Figure 3.8 Activity Diagram Manage Toys

In figure 3.8 explain the owner can do input data toy after login.

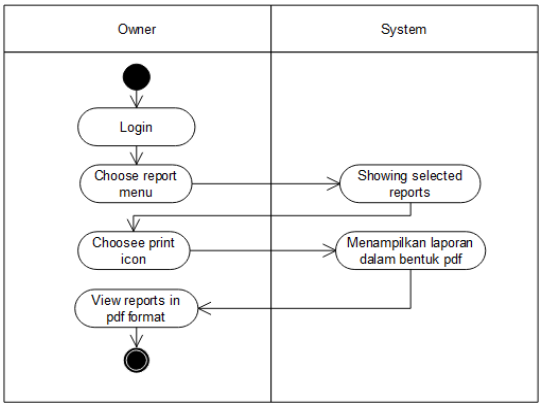

Figure 3.9 Activity Diagram Laporan

In figure 3.9 explain the owner can see reports such as payment reports, complaint reports, order reports, etc. after login.

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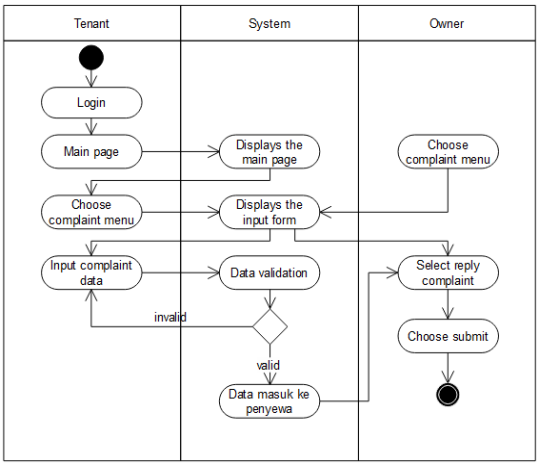

Figure 3.10 Activity Diagram Complaint

In figure 3.10 explained the tenant complained and the owner can reply to the complaint from the tenant.

Sequence Diagram

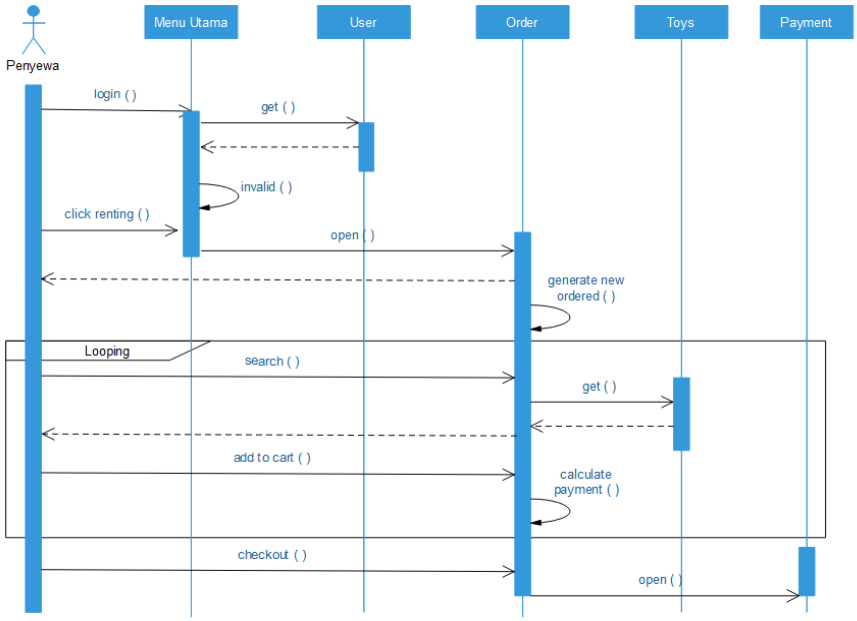

Figure 3.11 Sequence Diagram Order

In figure 3.11 explain the tenant in making an order and if the tenant has made an order and wants to add an order, the system will make a loop to add the order.

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Class Diagram

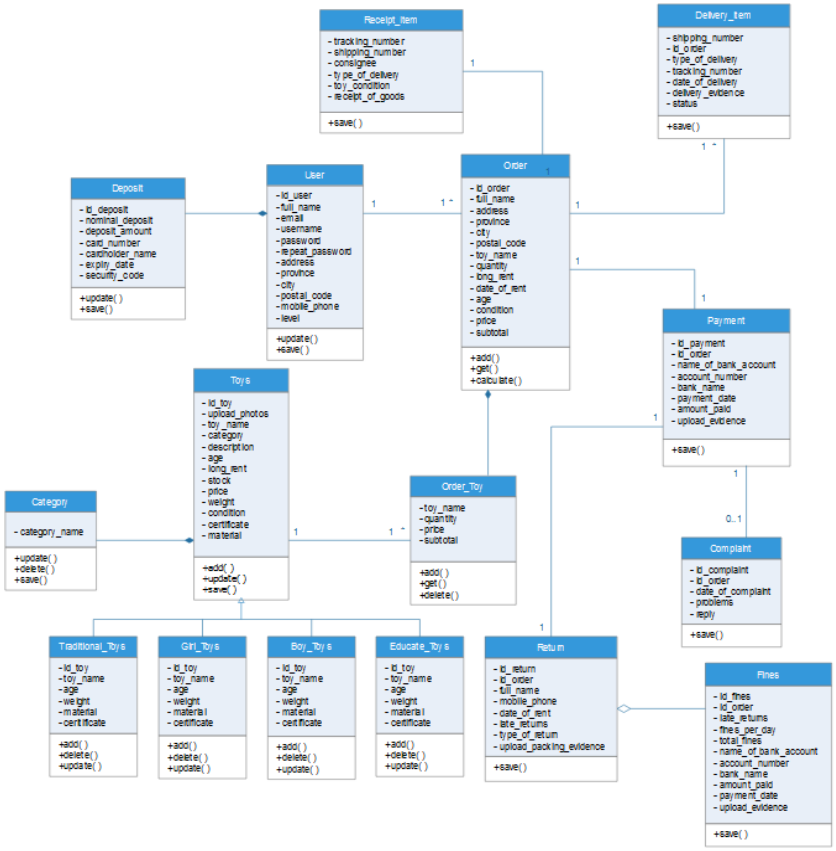

Figure 3.12 Class Diagram

In figure 3.12 a class diagram description that describes the functions, attributes and methods used in the system.

Screen Design

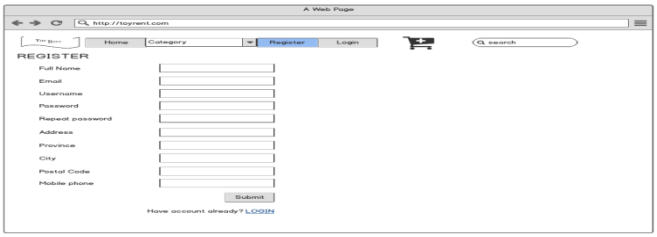

Figure 3.13 Screen Design Register

In figure 3.13 register page is a page if the user does not have an account to login.

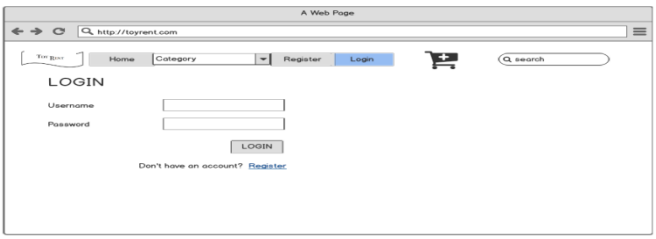

Figure 3.14 Screen Design Login

In figure 3.14 after creating an account, then the user can login using a username and password.

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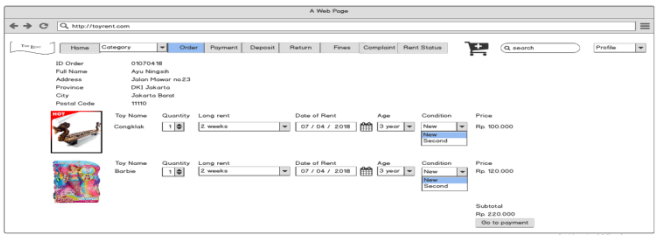

Figure 3.15 Screen Design Order

In figure 3.15 Order page is a page if the tenant has made an order or ordered the item.

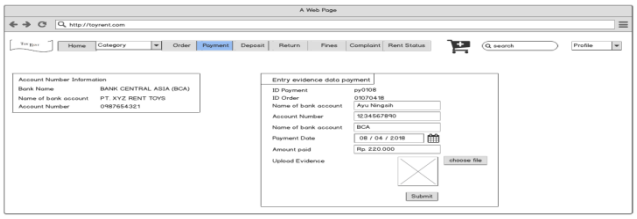

Figure 3.16 Screen Design Payment

In figure 3.16 Payment page is the tenant inputting payment data.

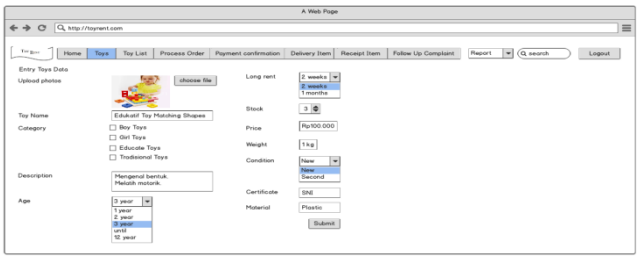

Figure 3.17 Screen Design Input Toy

In figure 3.17 displays the input data page of the toy that the owner can do.

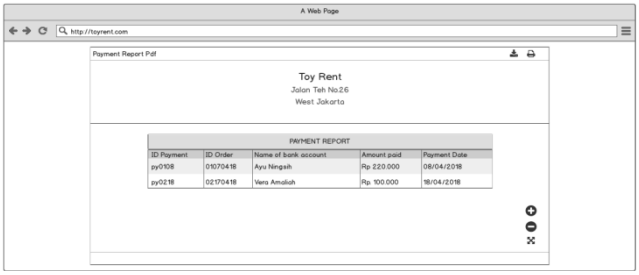

Figure 3.18 Screen Design Payment Report

In figure 3.18 showing one of the reports that the payment report can be made by the owner.

III. IMPLEMENTASI DAN TESTING

Spesification

Hardware:

- Processor Intel(R) Celeron(R) CPU 1019Y @ 1.00GHz 1.00GHz
- Memory 2GB DDR3 L Memory
- Storage 500 GB HDD
- 11.6 inch monitor

Software:

- Operating system Windows 7 or other
- XAMPP
- Programming language PHP, CSS, JavaScript, dan HTML
- MySql system database
- Browser Google Chrome or other

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Scenario Testing

Table 4.1 Scenario Testing

No	Interface	TrialsS	Application Status	Scenario Testing	Expected results
1	Register page	Test the input data register	Enter the register page	Input data register, then click "submit"	If the inputted data is correct, then the data will be stored in the database
2	Login page	Test the login process	Log in to the login page	Input username and password, then click "login"	If the data entered is correct, it will go to the main page, if it is wrong then repeat the login process.
3	Main page	Test all links	Enter the main page	Click on the menu on the main page	The links on the menu can be used and can be opened.
4	Order page	Test all links	Enter the order menu	Click the order menu	The selected link may open
5	Payment Page	Testing payment data input	Enter the payment menu	Input payment data	If the entered payment data is correct, it will be saved into the database.
6	Login page	Test the login process	Enter the login page	Input username and password, then click "login"	If the data entered is correct, it will go to the main page, if it is wrong then repeat the login process.
7	Main page	Test all links	Enter the main page	Click on the menu on the main page	The links contained on the main page menu can be used and can be opened.
8	Order Confirmation Page	Test the order process	Enter the order confirmation menu	Click the order confirmation menu	If the payment data made by the tenant is correct, then click "accepted", if not appropriate then click "rejected".
9	Payment Confirmation Page	Test the payment process	Enter the payment confirmation menu	Input payment data	If the entered payment data is correct, it will be saved into the database.

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Database Design

User

No	Attributes	Type	Length	Information
1	id_user	varchar	6	Primary Key
2	full_name	varchar	30	
3	email	varchar	20	
4	username	varchar	20	
5	password	varchar	8	
6	repeat_password	varchar	8	
7	address	text		
8	province	varchar	23	
9	city	varchar	14	
10	postal_code	int	5	
11	mobile_phone	int	13	
12	level	varchar	6	

Order

No	Attributes	Type	Length	Information
1	id_order	int	8	Primary Key
2	full_name	varchar	30	
3	address	text		
4	province	varchar	23	
5	city	varchar	14	
6	postal_code	int	5	
7	toy_name	varchar	40	
8	quantity	int	3	
9	long_rent	varchar	8	
10	date_of_rent	date		
11	age	int	2	
12	condition	varchar	7	
13	price	int	10	
14	subtotal	int	10	

Deposit

No	Attributes	Type	Length	Information
1	id_deposit	varchar	8	Primary Key
2	nominal_deposit	int	10	
3	deposit_amount	int	10	
4	card_number	int	10	
5	cardholder_name	varchar	30	
6	expiry_date	int	4	
7	security_code	varchar	3	

Order Toy

No	Attributes	Type	Length	Information
1	toy_name	varchar	40	Primary Key
2	quantity	int	3	
3	price	int	10	
4	subtotal	int	10	

Toys

No	Attributes	Type	Length	Information
1	id_toy	int	15	Primary Key
2	upload_photos	text		
3	toy_name	varchar	40	
4	category	varchar	20	
5	description	text		
6	age	int	2	
7	long_rent	varchar	8	
8	stock	int	2	
9	price	int	10	
10	weight	int	2	
11	condition	varchar	7	
12	certificate	varchar	10	
13	material	varchar	15	

Payment

No	Attributes	Type	Length	Information
1	id_payment	varchar	6	Primary Key
2	id_order	int	8	
3	name_of_bank_account	varchar	20	
4	account_number	varchar	17	
5	bank_name	varchar	20	
6	payment_date	date		
7	amount_paid	int	10	
8	upload_evidence	text		

Girl Toys

No	Attributes	Type	Length	Information
1	id_toy	int	15	Primary Key
2	toy_name	varchar	40	
3	age	int	2	
4	weight	int	2	
5	certificate	varchar	10	
6	material	varchar	15	

Boy Toys

No	Attributes	Type	Length	Information
1	id_toy	int	15	Primary Key
2	toy_name	varchar	40	
3	age	int	2	
4	weight	int	2	
5	certificate	varchar	10	
6	material	varchar	15	

Educate Toys

No	Attributes	Type	Length	Information
1	id_toy	int	15	Primary Key
2	toy_name	varchar	40	
3	age	int	2	
4	weight	int	2	
5	certificate	varchar	10	
6	material	varchar	15	

Traditional Toys

No	Attributes	Type	Length	Information
1	id_toy	int	15	Primary Key
2	toy_name	varchar	40	
3	age	int	2	
4	weight	int	2	
5	certificate	varchar	10	
6	material	varchar	15	

Complaint

No	Attributes	Type	Length	Information
1	id_complaint	varchar	4	Primary Key
2	id_order	int	8	
3	date_of_complaint	date		
4	problems	text		
5	reply	text		

Fines

No	Attributes	Type	Length	Information
1	id_fines	varchar	4	Primary Key
2	id_order	int	8	
3	late_returns	int	2	
4	fines_per_day	int	4	
5	total_fines	int	5	
6	name_of_bank_account	varchar	20	
7	account_number	varchar	17	
8	bank_name	varchar	20	
9	amount_paid	int	10	
10	payment_date	date		
11	uplad evidence	text		

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Return

No	Attributes	Type	Length	Information
1	id_return	varchar	4	Primary Key
2	id_order	int	8	
3	full_name	varchar	30	
4	mobile_phone	int	13	
5	date_of_rent	date		
6	late_returns	int	2	
7	type_of_return	varchar	15	
8	upload_packing_evidence	text		

Category

No	Attributes	Type	Length	Information
1	category_name	varchar	20	Primary Key

Delivery Item

No	Attributes	Type	Length	Information
1	shipping_number	varchar	6	Primary Key
2	id_order	int	8	
3	type_of_delivery	varchar	14	
4	tracking_number	varchar	18	
5	date_of_delivery	date		
6	delivery_evidence	text		
7	status	varchar	8	

Receipt Item

No	Attributes	Type	Length	Information
1	tracking_number	varchar	18	Primary Key
2	shipping_number	varchar	6	
3	consignee	varchar	7	
4	type_of_delivery	varchar	14	
5	toy_condition	varchar	13	
6	receipt_of_goods	text		

Figure 3.19 Design Database

In figure 3.19 Database design that provides information between tables such as attributes, type, length and information..

IV. CONCLUSION

Analysis and design of the children's toy rental system in the Jakarta area is expected to be able to help parents in choosing toys according to the child's age.

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