

**ANALISIS PEMBUATAN WEBSITE MARKETPLACE DIGITAL
LAPAK GAMING BERDASARKAN WEBSITE ITEMKU**

<https://lapakgaming.neoverse.my.id>

LAPORAN

Dosen Pengampu: Sarah Purnamawati, S.T., M.Sc.



Disusun oleh:

Kelompok 1

Nama	: Novri Ilyasah	251402005
	Muhammad Dzakwan Ismail Rangkuti	251402014
	Muhammad Ihsan Anwar	251402044
	Andika Chairul Ilham	251402047
Kelas	: B	
Mata Kuliah	: Sistem Basis Data	

**PROGRAM STUDI TEKNOLOGI INFORMASI
FAKULTAS ILMU KOMPUTER DAN TEKNOLOGI INFORMASI
UNIVERSITAS SUMATERA UTARA**

2026

DAFTAR ISI

DAFTAR ISI	i
BAB I PENDAHULUAN	1
1.1 Latar Belakang.....	1
1.2 Tujuan.....	2
1.3 Manfaat.....	2
1.4 Deskripsi Website.....	2
1.5 Aktor Sistem.....	3
1.5.1 Admin.....	3
1.5.2 Seller	3
1.5.3 Buyer.....	4
BAB II ANALISIS SISTEM	5
2.1 Business Rules.....	5
2.2 Business Proses Diagram	5
BAB III PERANCANGAN	6
3.1 Entity Relationship Diagram	6
3.2 Relational Schema	25
3.3 Kardinalitas.....	25
BAB IV IMPLEMENTASI	27
4.1 Screenshot Website	27
4.2 Screenshot Script DDL dan DML	33
4.3 Screenshot CRUD	34
BAB V PENGUJIAN QUERY	36
5.1 Screenshot Hasil Eksekusi Query Kompleks	36
5.1.1 Query Join.....	36
5.1.2 Query Aggregate.....	36
5.1.3 Query Subquery	36
5.1.4 Query View	37
BAB VI PENUTUP	38
6.1 Kesimpulan.....	38
6.2 Saran.....	38
DAFTAR PUSTAKA	39

BAB I PENDAHULUAN

1.1 Latar Belakang

Perkembangan teknologi digital telah membawa perubahan besar terhadap aktivitas ekonomi masyarakat, terutama dalam industri game online dan transaksi produk digital. Saat ini, kebutuhan pengguna terhadap layanan jual beli item game, voucher, akun game, top up, hingga produk digital lainnya semakin meningkat. Banyak pemain game membutuhkan platform yang aman, cepat, dan terpercaya untuk melakukan transaksi digital tanpa harus bertemu secara langsung.

Melihat perkembangan tersebut, marketplace digital menjadi salah satu solusi yang paling banyak digunakan karena mampu mempertemukan penjual dan pembeli dalam satu platform terintegrasi. Salah satu marketplace digital yang cukup dikenal di Indonesia adalah Itemku yang menyediakan layanan jual beli produk digital dan kebutuhan gaming. Sistem marketplace seperti ini memiliki kompleksitas tinggi karena harus mengelola data pengguna, transaksi, pembayaran, komunikasi, hingga keamanan transaksi secara bersamaan.

Berdasarkan kondisi tersebut, pada tugas besar Sistem Basis Data ini dikembangkan sebuah website marketplace digital bernama **Lapak Gaming** yang merupakan hasil duplikasi konsep bisnis dari platform Itemku. Website Lapak Gaming dirancang sebagai marketplace berbasis web yang menyediakan layanan transaksi produk digital seperti item game, akun game, voucher, game key, dan top up game.

Website ini dibangun menggunakan framework Laravel dengan konsep MVC (Model View Controller) serta menggunakan MySQL sebagai database utama. Basis data menjadi bagian paling penting dalam sistem karena seluruh aktivitas pengguna tersimpan dan saling terhubung melalui relasi antar tabel. Berdasarkan schema database yang telah dirancang, sistem memiliki berbagai entitas utama seperti users, products, orders, order_items, categories, wallets, wallet_transactions, reviews, conversations, messages, dan marketplace_notifications.

1.2 Tujuan

Tujuan dari pengembangan website Lapak Gaming adalah:

- a. Membuat sistem marketplace digital berbasis web.
- b. Menerapkan konsep basis data relasional pada studi kasus dunia nyata.
- c. Mengimplementasikan database menggunakan MySQL dan Laravel.
- d. Mengelola data transaksi secara terstruktur dan aman.
- e. Membuat sistem wallet digital dan escrow transaksi.
- f. Mengimplementasikan relasi antar tabel pada database marketplace.
- g. Mengembangkan fitur CRUD dan dashboard statistik.
- h. Mengimplementasikan query kompleks seperti join, subquery, aggregate, dan view.
- i. Melakukan normalisasi database hingga Third Normal Form (3NF).
- j. Memenuhi requirement tugas besar Sistem Basis Data.

1.3 Manfaat

Adapun manfaat dari project ini adalah sebagai berikut:

Bagi Mahasiswa

- Menambah pemahaman mengenai perancangan sistem basis data.
- Melatih kemampuan dalam pengembangan website berbasis database.
- Memahami implementasi query SQL dan relasi antar tabel.

Bagi Pengguna

- Memberikan kemudahan dalam mencari dan membeli produk digital.
- Mempermudah proses transaksi secara online.

Bagi Pengembangan Teknologi

- Menjadi contoh implementasi marketplace digital sederhana berbasis web.
- Menjadi referensi pembelajaran dalam pengembangan sistem informasi marketplace.

1.4 Deskripsi Website

Lapak Gaming merupakan website marketplace digital yang digunakan untuk melakukan transaksi berbagai produk digital dan kebutuhan gaming. Website

ini mengadopsi konsep bisnis dari Itemku dengan beberapa penyesuaian fitur dan desain sistem.

Pada website ini, pengguna dapat melakukan aktivitas seperti:

- a. Membeli item game
- b. Menjual akun game
- c. Menjual voucher game
- d. Membeli game key
- e. Melakukan top up game
- f. Memberikan review produk
- g. Berkomunikasi melalui fitur chat

Lapak Gaming menyediakan sistem transaksi yang aman dengan konsep escrow, yaitu saldo transaksi akan ditahan sementara hingga pesanan selesai. Setelah transaksi berhasil, saldo akan masuk ke wallet seller.

Sistem juga memiliki fitur seller level yang memungkinkan seller mendapatkan tingkatan tertentu berdasarkan jumlah penjualan dan performa toko. Selain itu, terdapat sistem notifikasi marketplace untuk memberikan informasi terkait transaksi, pesan, dan aktivitas pengguna lainnya.

1.5 Aktor Sistem

1.5.1 Admin

Admin memiliki hak akses penuh terhadap sistem, seperti:

- a. Mengelola kategori
- b. Mengelola banner
- c. Memverifikasi seller
- d. Mengelola laporan transaksi
- e. Mengelola data pengguna
- f. Mengawasi aktivitas marketplace

1.5.2 Seller

Seller merupakan pengguna yang menjual produk digital pada platform.

Seller dapat:

- a. Menambahkan produk

- b. Mengedit produk
- c. Menghapus produk
- d. Mengelola stok
- e. Melihat pesanan
- f. Berkomunikasi dengan buyer
- g. Mengelola wallet

1.5.3 Buyer

Buyer merupakan pengguna yang membeli produk digital. Buyer dapat:

- a. Melihat produk
- b. Menambahkan produk ke cart
- c. Melakukan checkout
- d. Mengunggah bukti pembayaran
- e. Memberikan review
- f. Mengirim pesan kepada seller

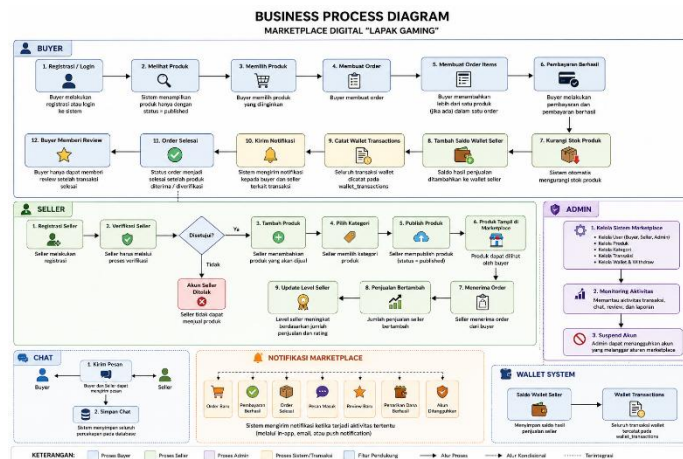
BAB II ANALISIS SISTEM

2.1 Business Rules

Berikut business rules pada sistem Lapak Gaming:

- a. Satu pengguna hanya memiliki satu role utama yaitu buyer, seller, atau admin.
- b. Seller harus melalui proses verifikasi sebelum dapat menjual produk.
- c. Satu seller dapat memiliki banyak produk.
- d. Satu kategori dapat memiliki banyak produk.
- e. Buyer dapat membeli lebih dari satu produk dalam satu transaksi.
- f. Setiap order memiliki banyak order_items.
- g. Produk hanya dapat ditampilkan jika status produk adalah published.
- h. Sistem otomatis mengurangi stok produk setelah transaksi berhasil.
- i. Buyer hanya dapat memberikan review setelah transaksi selesai.
- j. Sistem wallet digunakan untuk menyimpan saldo hasil penjualan seller.
- k. Seluruh transaksi wallet tercatat pada wallet_transactions.
- l. Buyer dan seller dapat melakukan percakapan melalui fitur chat.
- m. Sistem mengirim notifikasi marketplace ketika terjadi aktivitas tertentu.
- n. Seller level akan meningkat berdasarkan jumlah penjualan dan rating seller.
- o. Admin dapat menanggukhkan akun yang melanggar aturan marketplace.

2.2 Business Proses Diagram



BAB III

PERANCANGAN

3.1 Entity Relationship Diagram (ERD)

Entity dan Atribut database sistem Lapak Gaming terdiri dari:

PDF export page

Table of contents	
1 banners	Page number: 3
2 buyers	Page number: 4
3 cache	Page number: 5
4 cache_locks	Page number: 6
5 carts	Page number: 7
6 categories	Page number: 8
7 clarification_messages	Page number: 9
8 comment_likes	Page number: 10
9 conversations	Page number: 11
10 failed_jobs	Page number: 12
11 jobs	Page number: 13
12 job_batches	Page number: 14
13 marketplace_notifications	Page number: 15
14 messages	Page number: 16
15 migrations	Page number: 17
16 notifications	Page number: 18
17 orders	Page number: 19
18 order_financials	Page number: 21
19 order_items	Page number: 22
20 password_reset_tokens	Page number: 23
21 products	Page number: 24
22 product_comments	Page number: 25
23 product_statistics	Page number: 26
24 reviews	Page number: 27
25 sellers	Page number: 28
26 seller_levels	Page number: 29
27 seller_level_benefits	Page number: 30

Page number: 1/40 May 20, 2026 at 06:58 AM

PDF export page

28 sessions	Page number: 31
29 users	Page number: 32
30 user_policy_consent	Page number: 34
31 user_profiles	Page number: 35
32 verification_logs	Page number: 36
33 wallets	Page number: 37
34 wallet_balances	Page number: 38
35 wallet_transactions	Page number: 39
36 Relational schema	Page number: 40

Page number: 2/40 May 20, 2026 at 06:58 AM

PDF export page

1 banners

Creation: May 15, 2026 at 08:30 PM

Column	Type	Attributes	Null	Default	Extra	Links to	Comments	MIME
id	bigint(20)	UNSIGNED	No		auto_increment			
title	varchar(255)		No					
subtitle	varchar(255)		Yes	NULL				
image_url	varchar(255)		Yes	NULL				
image_path	varchar(255)		Yes	NULL				
link_url	varchar(255)		Yes	NULL				
position	enum('hero', 'featured')		No	hero				
sort_order	int(11)		No	0				
is_active	tinyint(1)		No	1				
created_at	timestamp		Yes	NULL				
updated_at	timestamp		Yes	NULL				

Page number: 3/40

May 20, 2026 at 06:58 AM

PDF export page

2 buyers

Creation: May 20, 2026 at 06:02 AM

Column	Type	Attributes	Null	Default	Extra	Links to	Comments	MIME
id	bigint(20)	UNSIGNED	No		auto_increment			
name	varchar(255)		No					
username	varchar(255)		No					
email	varchar(255)		No					
email_verified_at	timestamp		Yes	NULL				
password	varchar(255)		No					
phone	varchar(30)		Yes	NULL				
avatar	varchar(255)		Yes	NULL				
status	enum('active', 'pending', 'suspended')		No	active				
suspended_at	timestamp		Yes	NULL				
remember_token	varchar(100)		Yes	NULL				
created_at	timestamp		Yes	NULL				
updated_at	timestamp		Yes	NULL				
user_id	bigint(20)	UNSIGNED	Yes	NULL		-> users.id ON UPDATE RESTRICT ON DELETE CASCADE		

Page number: 4/40

May 20, 2026 at 06:58 AM

PDF export page

3 cache

Creation: Apr 29, 2026 at 01:37 AM

Column	Type	Attributes	Null	Default	Extra	Links to	Comments	MIME
key	varchar(255)		No					
value	mediumtext		No					
expiration	bigint(20)		No					

Page number: 5/40

May 20, 2026 at 06:58 AM

PDF export page

4 cache_locks

Creation: Apr 29, 2026 at 01:37 AM

Column	Type	Attributes	Null	Default	Extra	Links to	Comments	MIME
key	varchar(255)		No					
owner	varchar(255)		No					
expiration	bigint(20)		No					

Page number: 6/40

May 20, 2026 at 06:58 AM

PDF export page

5 carts

Creation: May 19, 2026 at 11:12 PM
 Last update: May 20, 2026 at 06:28 AM

Column	Type	Attributes	Null	Default	Extra	Links to	Comments	MIME
id	bigint(20)	UNSIGNED	No		auto_increment			
user_id	bigint(20)	UNSIGNED	No			-> users.id ON UPDATE RESTRICT ON DELETE CASCADE		
product_id	bigint(20)	UNSIGNED	No			-> products.id ON UPDATE RESTRICT ON DELETE CASCADE		
quantity	int(10)	UNSIGNED	No	1				
notes	text		Yes	NULL				
is_selected	tinyint(1)		No	1				
created_at	timestamp		Yes	NULL				
updated_at	timestamp		Yes	NULL				

PDF export page

6 categories

Creation: May 15, 2026 at 02:56 AM

Column	Type	Attributes	Null	Default	Extra	Links to	Comments	MIME
id	bigint(20)	UNSIGNED	No		auto_increment			
parent_id	bigint(20)	UNSIGNED	Yes	NULL		-> categories.id ON UPDATE RESTRICT ON DELETE SET NULL		
name	varchar(255)		No					
icon	varchar(255)		Yes	NULL				
image	varchar(255)		Yes	NULL				
slug	varchar(255)		No					
description	text		Yes	NULL				
sort_order	int(10)	UNSIGNED	No	0				
is_active	tinyint(1)		No	1				
created_at	timestamp		Yes	NULL				
updated_at	timestamp		Yes	NULL				

PDF export page

7 clarification_messages

Creation: May 15, 2026 at 01:29 AM

Column	Type	Attributes	Null	Default	Extra	Links to	Comments	MIME
id	bigint(20)	UNSIGNED	No		auto_increment			
user_id	bigint(20)	UNSIGNED	No			-> users.id ON UPDATE RESTRICT ON DELETE CASCADE		
sender_id	bigint(20)	UNSIGNED	No			-> users.id ON UPDATE RESTRICT ON DELETE CASCADE		
sender_type	enum('admin', 'user')		No					
message	text		No					
attachments	longtext		Yes	NULL				
read_at	timestamp		Yes	NULL				
deleted_at	timestamp		Yes	NULL				
created_at	timestamp		Yes	NULL				
updated_at	timestamp		Yes	NULL				

Page number: 9/40

May 20, 2026 at 06:58 AM

PDF export page

8 comment_likes

Creation: May 15, 2026 at 01:10 AM

Column	Type	Attributes	Null	Default	Extra	Links to	Comments	MIME
id	bigint(20)	UNSIGNED	No		auto_increment			
product_comment_id	bigint(20)	UNSIGNED	No			-> product_comments.id ON UPDATE RESTRICT ON DELETE CASCADE		
user_id	bigint(20)	UNSIGNED	No			-> users.id ON UPDATE RESTRICT ON DELETE CASCADE		

Page number: 10/40

May 20, 2026 at 06:58 AM

PDF export page

9 conversations

Creation: May 16, 2026 at 01:20 AM
 Last update: May 20, 2026 at 06:49 AM

Column	Type	Attributes	Null	Default	Extra	Links to	Comments	MIME
id	bigint(20)	UNSIGNED	No		auto_increment			
buyer_id	bigint(20)	UNSIGNED	No			-> users.id ON UPDATE RESTRICT ON DELETE CASCADE		
seller_id	bigint(20)	UNSIGNED	No			-> users.id ON UPDATE RESTRICT ON DELETE CASCADE		
product_id	bigint(20)	UNSIGNED	Yes	NULL		-> products.id ON UPDATE RESTRICT ON DELETE SET_NULL		
order_id	bigint(20)	UNSIGNED	Yes	NULL		-> orders.id ON UPDATE RESTRICT ON DELETE SET_NULL		
last_message	text		Yes	NULL				
last_message_at	timestamp		Yes	NULL				
last_message_sender_id	bigint(20)	UNSIGNED	Yes	NULL		-> users.id ON UPDATE RESTRICT ON DELETE SET_NULL		
unread_buyer	int(10)	UNSIGNED	No	0				
unread_seller	int(10)	UNSIGNED	No	0				
buyer_typing_at	timestamp		Yes	NULL				
seller_typing_at	timestamp		Yes	NULL				
buyer_last_seen_at	timestamp		Yes	NULL				
seller_last_seen_at	timestamp		Yes	NULL				
pinned_by_seller	tinyint(1)		No	0				
archived_by_buyer_at	timestamp		Yes	NULL				
archived_by_seller_at	timestamp		Yes	NULL				
created_at	timestamp		Yes	NULL				
updated_at	timestamp		Yes	NULL				
deleted_at	timestamp		Yes	NULL				

Page number: 11/40

May 20, 2026 at 06:58 AM

PDF export page

10 failed jobs

Creation: Apr 29, 2026 at 01:37 AM

Column	Type	Attributes	Null	Default	Extra	Links to	Comments	MIME
id	bigint(20)	UNSIGNED	No		auto_increment			
uuid	varchar(255)		No					
connection	text		No					
queue	text		No					
payload	longtext		No					
exception	longtext		No					
failed_at	timestamp		No	current_timestamp()				

Page number: 12/40

May 20, 2026 at 06:58 AM

PDF export page

11 jobs

Creation: Apr 29, 2026 at 01:37 AM

Column	Type	Attributes	Null	Default	Extra	Links to	Comments	MIME
id	bigint(20)	UNSIGNED	No		auto_increment			
queue	varchar(255)		No					
payload	longtext		No					
attempts	tinyint(3)	UNSIGNED	No					
reserved_at	int(10)	UNSIGNED	Yes	NULL				
available_at	int(10)	UNSIGNED	No					
created_at	int(10)	UNSIGNED	No					

PDF export page

12 job_batches

Creation: Apr 29, 2026 at 01:37 AM

Column	Type	Attributes	Null	Default	Extra	Links to	Comments	MIME
id	varchar(255)		No					
name	varchar(255)		No					
total_jobs	int(11)		No					
pending_jobs	int(11)		No					
failed_jobs	int(11)		No					
failed_job_ids	longtext		No					
options	mediumtext		Yes	NULL				
cancelled_at	int(11)		Yes	NULL				
created_at	int(11)		No					
finished_at	int(11)		Yes	NULL				

PDF export page

13 marketplace_notifications

Creation: May 08, 2026 at 11:01 PM
 Last update: May 20, 2026 at 06:49 AM

Column	Type	Attributes	Null	Default	Extra	Links to	Comments	MIME
id	bigint(20)	UNSIGNED	No		auto_increment			
user_id	bigint(20)	UNSIGNED	No			-> users.id ON UPDATE RESTRICT ON DELETE CASCADE		
title	varchar(255)		No					
body	text		No					
link	varchar(255)		Yes	NULL				
type	varchar(255)		No	system				
is_read	tinyint(1)		No	0				
read_at	timestamp		Yes	NULL				
metadata	longtext		Yes	NULL				
created_at	timestamp		Yes	NULL				
updated_at	timestamp		Yes	NULL				

Page number: 15/40

May 20, 2026 at 06:58 AM

PDF export page

14 messages

Creation: May 19, 2026 at 11:12 PM
 Last update: May 20, 2026 at 06:49 AM

Column	Type	Attributes	Null	Default	Extra	Links to	Comments	MIME
id	bigint(20)	UNSIGNED	No		auto_increment			
conversation_id	bigint(20)	UNSIGNED	Yes	NULL		-> conversations.id ON UPDATE RESTRICT ON DELETE SET_NULL		
order_id	bigint(20)	UNSIGNED	Yes	NULL		-> orders.id ON UPDATE RESTRICT ON DELETE SET_NULL		
product_id	bigint(20)	UNSIGNED	Yes	NULL		-> products.id ON UPDATE RESTRICT ON DELETE SET_NULL		
sender_id	bigint(20)	UNSIGNED	No			-> users.id ON UPDATE RESTRICT ON DELETE CASCADE		
sender_role	varchar(255)		Yes	NULL				
receiver_id	bigint(20)	UNSIGNED	No			-> users.id ON UPDATE RESTRICT ON DELETE CASCADE		
message	text		No					
attachment_path	varchar(500)		Yes	NULL				
attachment_type	varchar(50)		Yes	NULL				
is_read	tinyint(1)		No	0				
read_at	timestamp		Yes	NULL				
edited_at	timestamp		Yes	NULL				
deleted_for_sender_at	timestamp		Yes	NULL				
deleted_for_receiver_at	timestamp		Yes	NULL				
deleted_for_everyone_at	timestamp		Yes	NULL				
created_at	timestamp		Yes	NULL				
updated_at	timestamp		Yes	NULL				

Page number: 16/40

May 20, 2026 at 06:58 AM

PDF export page

15 migrations

Creation: May 12, 2026 at 10:20 PM

Column	Type	Attributes	Null	Default	Extra	Links to	Comments	MIME
id	int(10)	UNSIGNED	No		auto_increment			
migration	varchar(255)		No					
batch	int(11)		No					

PDF export page

16 notifications

Creation: May 08, 2026 at 11:01 PM

Column	Type	Attributes	Null	Default	Extra	Links to	Comments	MIME
id	char(36)		No					
type	varchar(255)		No					
notifiable_type	varchar(255)		No					
notifiable_id	bigint(20)	UNSIGNED	No					
data	longtext		No					
read_at	datetime		Yes	NULL				
created_at	timestamp		Yes	NULL				
updated_at	timestamp		Yes	NULL				

PDF export page

17 orders

Creation: May 15, 2026 at 01:29 AM
 Last update: May 20, 2026 at 06:31 AM

Column	Type	Attributes	Null	Default	Extra	Links to	Comments	MIME
id	bigint(20)	UNSIGNED	No		auto_increment			
buyer_id	bigint(20)	UNSIGNED	No			-> users.id ON UPDATE RESTRICT ON DELETE CASCADE		
seller_id	bigint(20)	UNSIGNED	Yes	NULL		-> users.id ON UPDATE RESTRICT ON DELETE SET_NULL		
invoice_number	varchar(255)		No					
order_code	varchar(255)		No					
status	enum('pending_payment', 'payment_uploaded', 'processing', 'delivered', 'completed', 'disputed', 'cancelled')		No	pending_payment				
subtotal	decimal(14, 2)		Yes	0.00				
fee_amount	decimal(14, 2)		Yes	0.00				
escrow_amount	decimal(14, 2)		Yes	0.00				
grand_total	decimal(14, 2)		Yes	0.00				
payment_method	varchar(255)		Yes	NULL				
payment_proof	varchar(255)		Yes	NULL				
delivery_notes	text		Yes	NULL				
tracking_code	varchar(255)		Yes	NULL				
due_at	timestamp		Yes	NULL				
completed_at	timestamp		Yes	NULL				

Page number: 19/40

May 20, 2026 at 06:58 AM

PDF export page

disputed_at	timestamp		Yes	NULL				
metadata	longtext		Yes	NULL				
created_at	timestamp		Yes	NULL				
updated_at	timestamp		Yes	NULL				

Page number: 20/40

May 20, 2026 at 06:58 AM

PDF export page

18 order_financials

Creation: May 08, 2026 at 11:01 PM
 Last update: May 20, 2026 at 06:28 AM

Column	Type	Attributes	Null	Default	Extra	Links to	Comments	MIME
id	bigint(20)	UNSIGNED	No		auto_increment			
order_id	bigint(20)	UNSIGNED	No			-> orders.id ON UPDATE RESTRICT ON DELETE CASCADE		
subtotal	decimal(14, 2)		No	0.00				
fee_amount	decimal(14, 2)		No	0.00				
escrow_amount	decimal(14, 2)		No	0.00				
grand_total	decimal(14, 2)		No	0.00				
created_at	timestamp		Yes	NULL				
updated_at	timestamp		Yes	NULL				

PDF export page

19 order_items

Creation: May 20, 2026 at 06:07 AM
 Last update: May 20, 2026 at 06:28 AM

Column	Type	Attributes	Null	Default	Extra	Links to	Comments	MIME
id	bigint(20)	UNSIGNED	No		auto_increment			
order_id	bigint(20)	UNSIGNED	No			-> orders.id ON UPDATE RESTRICT ON DELETE CASCADE		
product_id	bigint(20)	UNSIGNED	No			-> products.id ON UPDATE RESTRICT ON DELETE CASCADE		
name_snapshot	varchar(255)		No					
price_snapshot	decimal(14, 2)		No					
quantity	int(10)	UNSIGNED	No	1				
delivery_data	longtext		Yes	NULL				
status	enum('pending', 'delivered', 'confirmed', 'refunded')		No	pending				
created_at	timestamp		Yes	NULL				
updated_at	timestamp		Yes	NULL				

PDF export page

20 password_reset_tokens

Creation: Apr 29, 2026 at 01:37 AM

Column	Type	Attributes	Null	Default	Extra	Links to	Comments	MIME
email	varchar(255)		No					
token	varchar(255)		No					
created_at	timestamp		Yes	NULL				

Page number: 23/40

May 20, 2026 at 06:58 AM

PDF export page

21 products

Creation: May 15, 2026 at 01:29 AM
Last update: May 20, 2026 at 06:28 AM

Column	Type	Attributes	Null	Default	Extra	Links to	Comments	MIME
id	bigint(20)	UNSIGNED	No		auto_increment			
seller_id	bigint(20)	UNSIGNED	No			-> users.id ON UPDATE RESTRICT ON DELETE CASCADE		
category_id	bigint(20)	UNSIGNED	No			-> categories.id ON UPDATE RESTRICT ON DELETE CASCADE		
name	varchar(255)		No					
slug	varchar(255)		No					
description	text		Yes	NULL				
price	decimal(14, 2)		No					
sale_price	decimal(14, 2)		Yes	NULL				
stock	int(10)	UNSIGNED	No	0				
type	enum('topup', 'item', 'skun', 'voucher', 'gamekey')		No	item				
file_path	varchar(255)		Yes	NULL				
delivery_content	longtext		Yes	NULL				
is_auto_delivery	tinyint(1)		No	1				
is_featured	tinyint(1)		No	0				
is_trending	tinyint(1)		No	0				
status	enum('draft', 'published', 'archived')		No	draft				
created_at	timestamp		Yes	NULL				
updated_at	timestamp		Yes	NULL				
views_count	bigint(20)	UNSIGNED	No	0				

Page number: 24/40

May 20, 2026 at 06:58 AM

PDF export page

22 product_comments

Creation: May 20, 2026 at 06:02 AM
 Last update: May 20, 2026 at 06:02 AM

Column	Type	Attributes	Null	Default	Extra	Links to	Comments	MIME
id	bigint(20)	UNSIGNED	No		auto_increment			
product_id	bigint(20)	UNSIGNED	No			-> products.id ON UPDATE RESTRICT ON DELETE CASCADE		
user_id	bigint(20)	UNSIGNED	No			-> users.id ON UPDATE RESTRICT ON DELETE CASCADE		
parent_comment_id	bigint(20)	UNSIGNED	Yes	NULL		-> product_comments.id ON UPDATE RESTRICT ON DELETE CASCADE		
content	text		No					
rating	tinyint(3)	UNSIGNED	Yes	NULL				
is_verified_buyer	tinyint(1)		No	0				
status	enum('approved', 'pending', 'rejected')		No	approved				
deleted_at	timestamp		Yes	NULL				
created_at	timestamp		Yes	NULL				
updated_at	timestamp		Yes	NULL				

PDF export page

23 product_statistics

Creation: May 08, 2026 at 11:01 PM
 Last update: May 19, 2026 at 07:54 PM

Column	Type	Attributes	Null	Default	Extra	Links to	Comments	MIME
id	bigint(20)	UNSIGNED	No		auto_increment			
product_id	bigint(20)	UNSIGNED	No			-> products.id ON UPDATE RESTRICT ON DELETE CASCADE		
solid_count	bigint(20)	UNSIGNED	No	0				
rating_average	decimal(4,2)		No	0.00				
review_count	int(10)	UNSIGNED	No	0				
views_count	bigint(20)	UNSIGNED	No	0				
downloads_count	bigint(20)	UNSIGNED	No	0				
created_at	timestamp		Yes	NULL				
updated_at	timestamp		Yes	NULL				

PDF export page

24 reviews

Creation: May 20, 2026 at 06:02 AM
Last update: May 20, 2026 at 06:02 AM

Column	Type	Attributes	Null	Default	Extra	Links to	Comments	MIME
id	bigint(20)	UNSIGNED	No		auto_increment			
product_id	bigint(20)	UNSIGNED	No			-> products.id ON UPDATE RESTRICT ON DELETE CASCADE		
order_id	bigint(20)	UNSIGNED	Yes	NULL		-> orders.id ON UPDATE RESTRICT ON DELETE SET_NULL		
user_id	bigint(20)	UNSIGNED	No			-> users.id ON UPDATE RESTRICT ON DELETE CASCADE		
rating	tinyint(3)	UNSIGNED	No					
comment	text		Yes	NULL				
is_public	tinyint(1)		No	1				
created_at	timestamp		Yes	NULL				
updated_at	timestamp		Yes	NULL				

Page number: 27/40

May 20, 2026 at 06:58 AM

PDF export page

25 sellers

Creation: May 20, 2026 at 06:02 AM

Column	Type	Attributes	Null	Default	Extra	Links to	Comments	MIME
id	bigint(20)	UNSIGNED	No		auto_increment			
name	varchar(255)		No					
username	varchar(255)		No					
email	varchar(255)		No					
email_verified_at	timestamp		Yes	NULL				
password	varchar(255)		No					
phone	varchar(30)		Yes	NULL				
avatar	varchar(255)		Yes	NULL				
seller_level_id	bigint(20)	UNSIGNED	Yes	NULL		-> seller_levels.id ON UPDATE RESTRICT ON DELETE SET_NULL		
status	enum('active', 'pending', 'suspended')		No	active				
suspended_at	timestamp		Yes	NULL				
remember_token	varchar(100)		Yes	NULL				
created_at	timestamp		Yes	NULL				
updated_at	timestamp		Yes	NULL				
user_id	bigint(20)	UNSIGNED	Yes	NULL		-> users.id ON UPDATE RESTRICT ON DELETE CASCADE		

Page number: 28/40

May 20, 2026 at 06:58 AM

PDF export page

26 seller_levels

Creation: May 08, 2026 at 11:01 PM

Column	Type	Attributes	Null	Default	Extra	Links to	Comments	MIME
id	bigint(20)	UNSIGNED	No		auto_increment			
name	varchar(255)		No					
minimum_order	int(10)	UNSIGNED	No	0				
minimum_revenue	decimal(14,2)		No	0.00				
fee_percent	decimal(5,2)		No	0.00				
badge_color	varchar(255)		No	slate				
auto_approve	tinyint(1)		No	0				
description	varchar(255)		Yes	NULL				
min_rating	int(11)		No	0				
min_sales	int(11)		No	0				
commission_rate	decimal(5,2)		No	10.00				
created_at	timestamp		Yes	NULL				
updated_at	timestamp		Yes	NULL				

Page number: 29/40

May 20, 2026 at 06:58 AM

PDF export page

27 seller_level_benefits

Creation: May 08, 2026 at 11:01 PM

Column	Type	Attributes	Null	Default	Extra	Links to	Comments	MIME
id	bigint(20)	UNSIGNED	No		auto_increment			
seller_level_id	bigint(20)	UNSIGNED	No			-> seller_levels.id ON UPDATE RESTRICT ON DELETE CASCADE		
sort_order	int(10)	UNSIGNED	No	0				
benefit	varchar(255)		No					
created_at	timestamp		Yes	NULL				
updated_at	timestamp		Yes	NULL				

Page number: 30/40

May 20, 2026 at 06:58 AM

PDF export page

28 sessions

Creation: Apr 29, 2026 at 01:37 AM

Column	Type	Attributes	Null	Default	Extra	Links to	Comments	MIME
id	varchar(255)		No					
user_id	bigint(20)	UNSIGNED	Yes	NULL				
ip_address	varchar(45)		Yes	NULL				
user_agent	text		Yes	NULL				
payload	longtext		No					
last_activity	int(11)		No					

PDF export page

29 users

Creation: May 20, 2026 at 06:07 AM
Last update: May 20, 2026 at 06:52 AM

Column	Type	Attributes	Null	Default	Extra	Links to	Comments	MIME
id	bigint(20)	UNSIGNED	No		auto_increment			
name	varchar(255)		No					
email	varchar(255)		No					
email_verified_at	timestamp		Yes	NULL				
google_id	varchar(255)		Yes	NULL				
password	varchar(255)		No					
role	enum('buyer', 'seller', 'admin')		No	buyer				
seller_status	enum('none', 'pending', 'under_review', 'need_revision', 'approved', 'rejected', 'suspended')		No	none				
seller_rejection_reason	text		Yes	NULL				
seller_reviewed_at	timestamp		Yes	NULL				
seller_submitted_at	timestamp		Yes	NULL				
shop_name	varchar(255)		Yes	NULL				
shop_photo	varchar(500)		Yes	NULL				
shop_description	text		Yes	NULL				

PDF export page

status	enum('active', 'pending', 'suspended')	No	active		
phone	varchar(30)	Yes	NULL		
avatar	varchar(255)	Yes	NULL		
remember_token	varchar(100)	Yes	NULL		
last_login_at	timestamp	Yes	NULL		
last_login_ip	varchar(45)	Yes	NULL		
last_login_user_agent	text	Yes	NULL		
last_login_device_hash	varchar(64)	Yes	NULL		
two_factor_enabled	tinyint(1)	No	0		
two_factor_methods	longtext	Yes	NULL		
two_factor_google_secret	varchar(128)	Yes	NULL		
two_factor_confirmed_at	timestamp	Yes	NULL		
account_deletion_token	varchar(255)	Yes	NULL		
account_deletion_token_sent_at	timestamp	Yes	NULL		
deactivated_at	timestamp	Yes	NULL		
created_at	timestamp	Yes	NULL		
updated_at	timestamp	Yes	NULL		
seller_level_id	bigint(20) UNSIGNED	Yes	NULL	-> seller_levels.id ON UPDATE RESTRICT ON DELETE SET_NULL	
suspended_at	timestamp	Yes	NULL		
suspend_reason	text	Yes	NULL		

PDF export page

30 user_policy_consent

Creation: May 15, 2026 at 01:10 AM

Column	Type	Attributes	Null	Default	Extra	Links to	Comments	MIME
id	bigint(20)	UNSIGNED	No		auto_increment			
user_id	bigint(20)	UNSIGNED	No			-> users.id ON UPDATE RESTRICT ON DELETE CASCADE		
policy_type	enum('terms_of_service', 'privacy_policy', 'data_processing')		No					
version	varchar(255)		No	1.0				
agreed_at	timestamp		Yes	NULL				
ip_address	varchar(45)		Yes	NULL				
user_agent	text		Yes	NULL				
consent_status	enum('agreed', 'declined', 'pending')		No	pending				
created_at	timestamp		Yes	NULL				
updated_at	timestamp		Yes	NULL				

PDF export page

31 user_profiles

Creation: May 11, 2026 at 06:41 AM
 Last update: May 20, 2026 at 06:32 AM

Column	Type	Attributes	Null	Default	Extra	Links to	Comments	MIME
id	bigint(20)	UNSIGNED	No		auto_increment			
user_id	bigint(20)	UNSIGNED	No			-> users.id ON UPDATE RESTRICT ON DELETE CASCADE		
gender	enum('male', 'female', 'other')		No					
birth_date	date		Yes	NULL				
phone	varchar(30)		No					
avatar_path	varchar(255)		Yes	NULL				
bio	text		Yes	NULL				
created_at	timestamp		Yes	NULL				
updated_at	timestamp		Yes	NULL				

Page number: 35/40

May 20, 2026 at 06:58 AM

PDF export page

32 verification_logs

Creation: May 15, 2026 at 01:29 AM

Column	Type	Attributes	Null	Default	Extra	Links to	Comments	MIME
id	bigint(20)	UNSIGNED	No		auto_increment			
user_id	bigint(20)	UNSIGNED	No			-> users.id ON UPDATE RESTRICT ON DELETE CASCADE		
admin_id	bigint(20)	UNSIGNED	Yes	NULL		-> users.id ON UPDATE RESTRICT ON DELETE SET_NULL		
action	enum('submitted', 'underrated', 'review', 'revision_requested', 'approved', 'rejected', 'suspended', 'resubmitted', 'reinstated')		No					
notes	text		Yes	NULL				
meta	longtext		Yes	NULL				
created_at	timestamp		Yes	NULL				
updated_at	timestamp		Yes	NULL				

Page number: 36/40

May 20, 2026 at 06:58 AM

PDF export page

33 wallets

Creation: May 08, 2026 at 11:01 PM
 Last update: May 20, 2026 at 06:33 AM

Column	Type	Attributes	Null	Default	Extra	Links to	Comments	MIME
id	bigint(20)	UNSIGNED	No		auto_increment			
user_id	bigint(20)	UNSIGNED	No			-> users.id ON UPDATE RESTRICT ON DELETE CASCADE		
currency	varchar(10)		No	IDR				
created_at	timestamp		Yes	NULL				
updated_at	timestamp		Yes	NULL				

PDF export page

34 wallet_balances

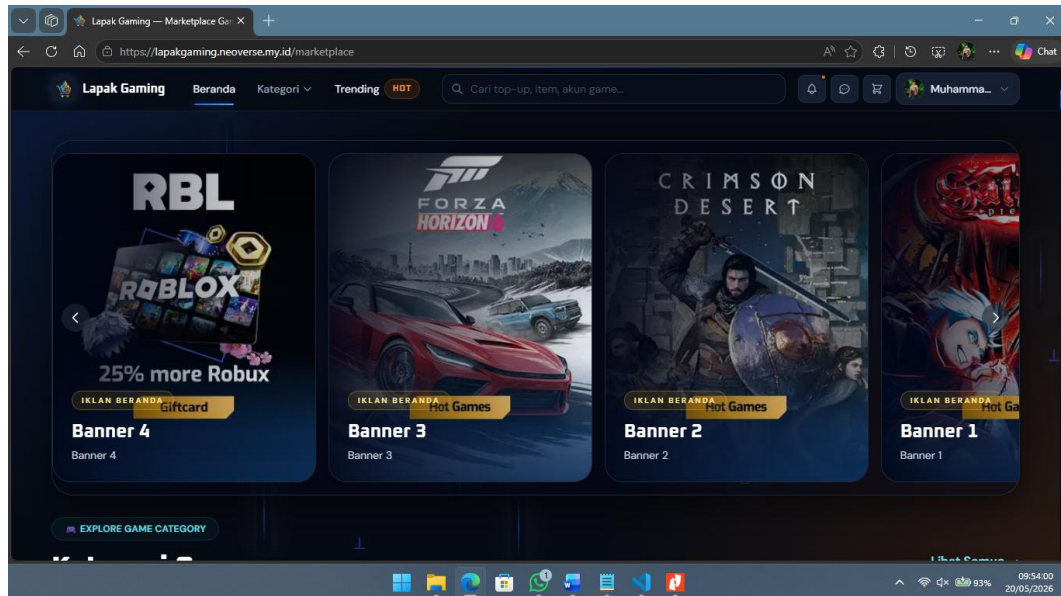
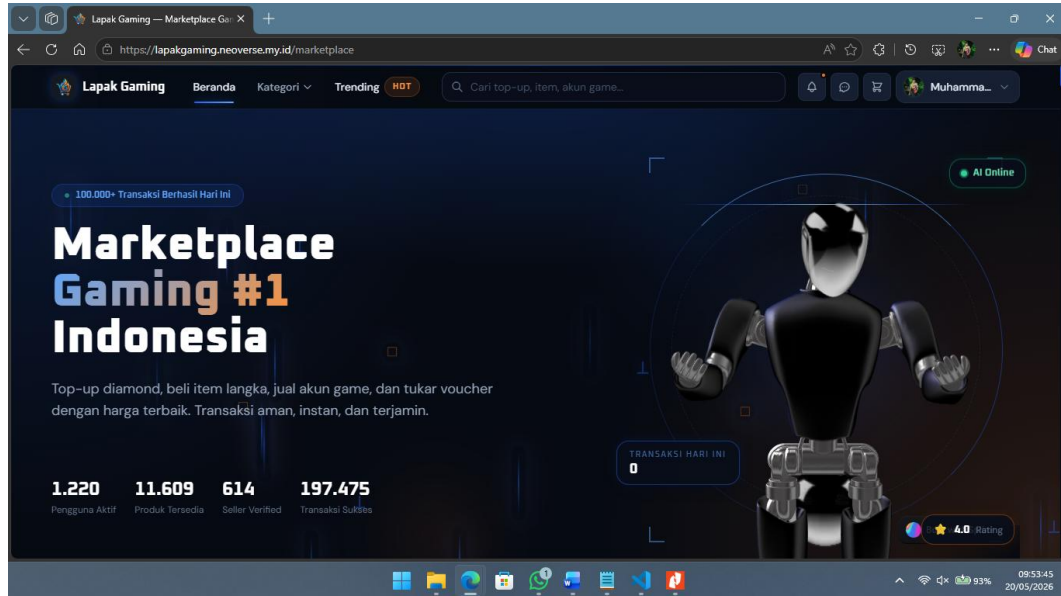
Creation: May 08, 2026 at 11:01 PM
 Last update: May 20, 2026 at 06:38 AM

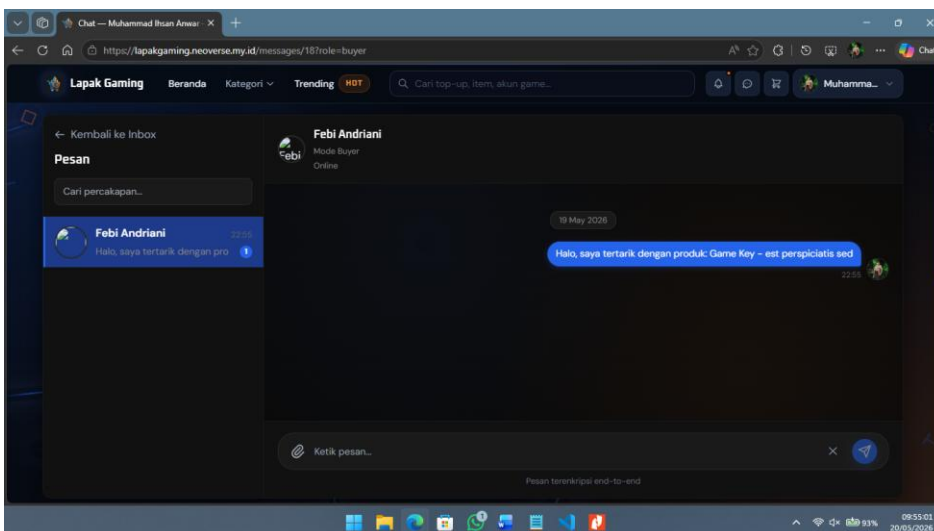
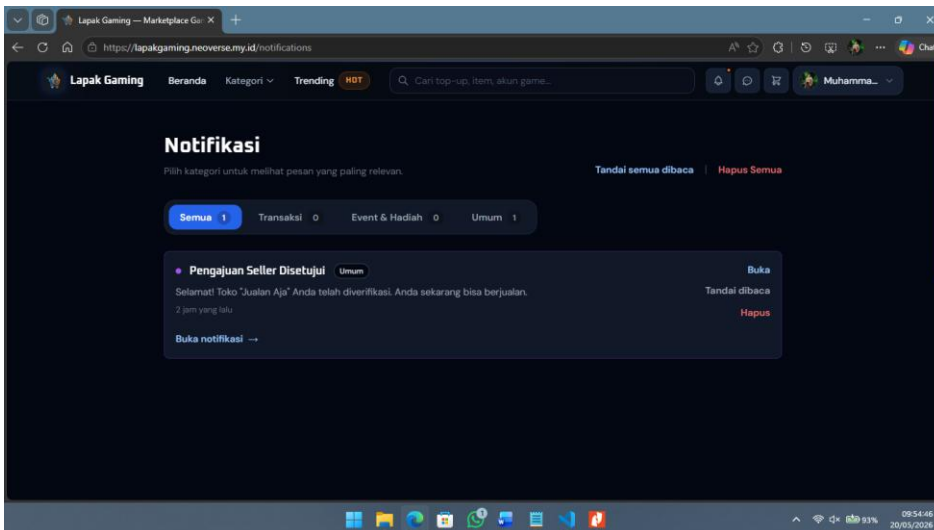
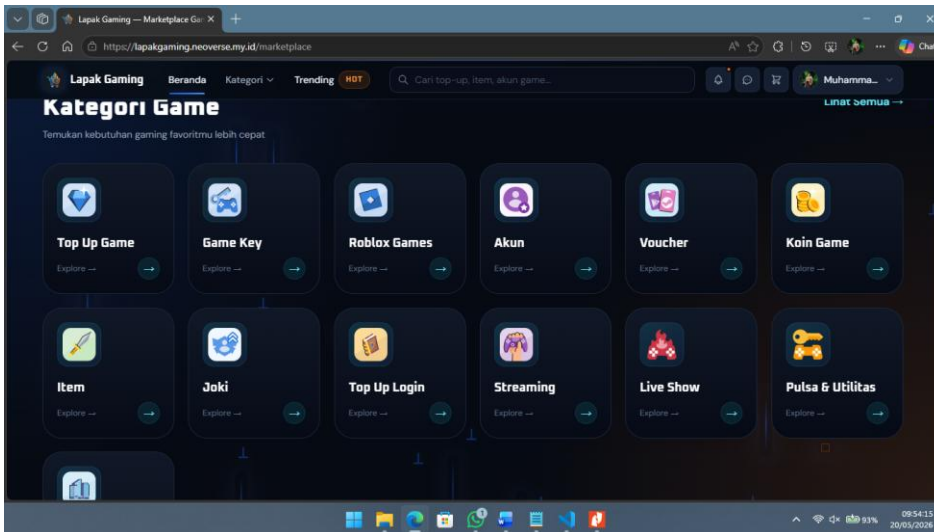
Column	Type	Attributes	Null	Default	Extra	Links to	Comments	MIME
id	bigint(20)	UNSIGNED	No		auto_increment			
wallet_id	bigint(20)	UNSIGNED	No			-> wallets.id ON UPDATE RESTRICT ON DELETE CASCADE		
balance	decimal(14, 2)		No	0.00				
available_balance	decimal(14, 2)		No	0.00				
locked_balance	decimal(14, 2)		No	0.00				
created_at	timestamp		Yes	NULL				
updated_at	timestamp		Yes	NULL				

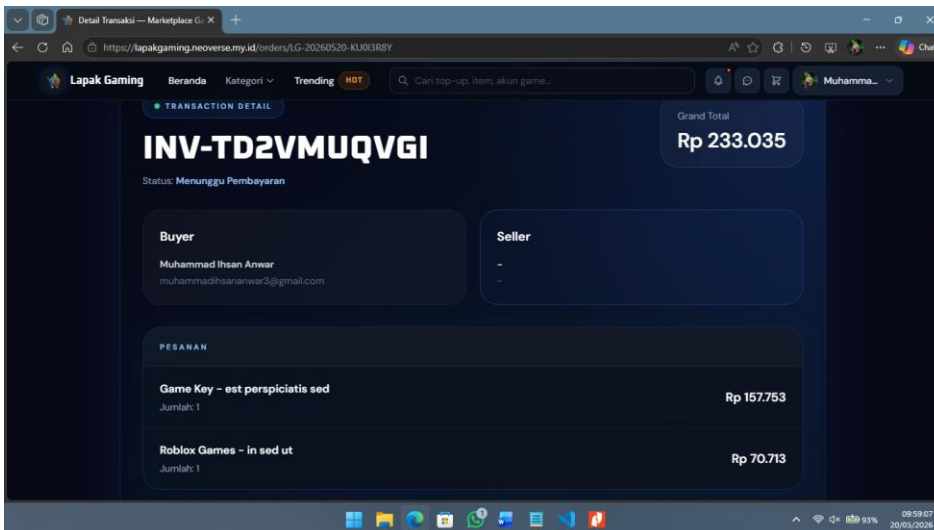
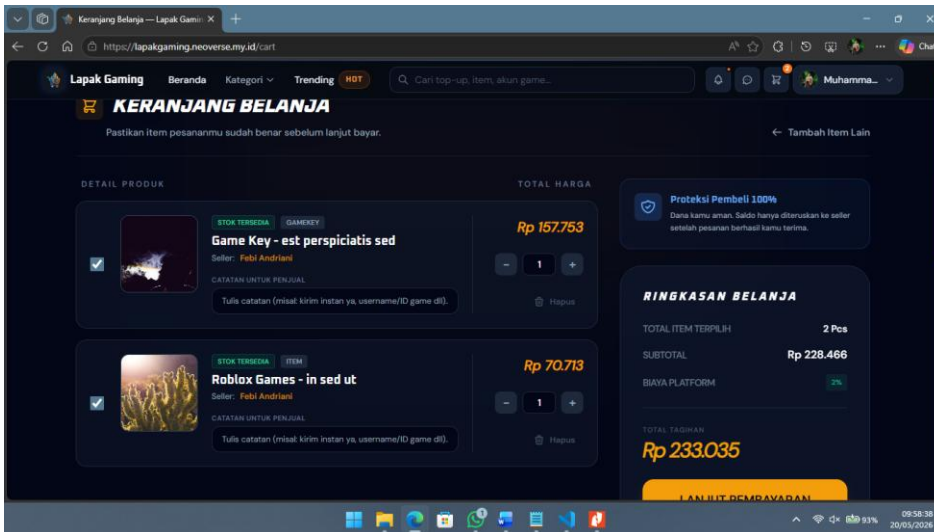
- d. Satu produk dapat memiliki banyak review (1:N).
- e. Satu conversation dapat memiliki banyak messages (1:N).
- f. Satu wallet dapat memiliki banyak wallet_transactions (1:N).

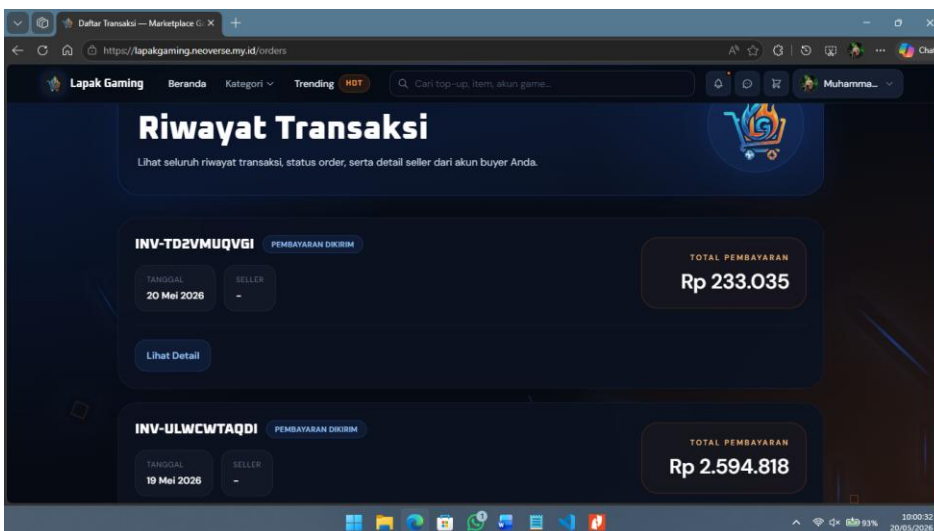
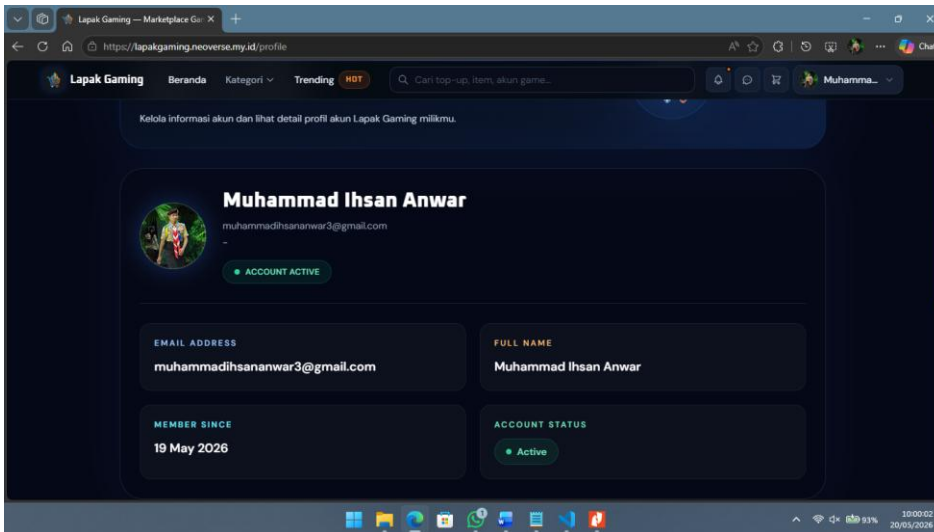
BAB IV IMPLEMENTASI

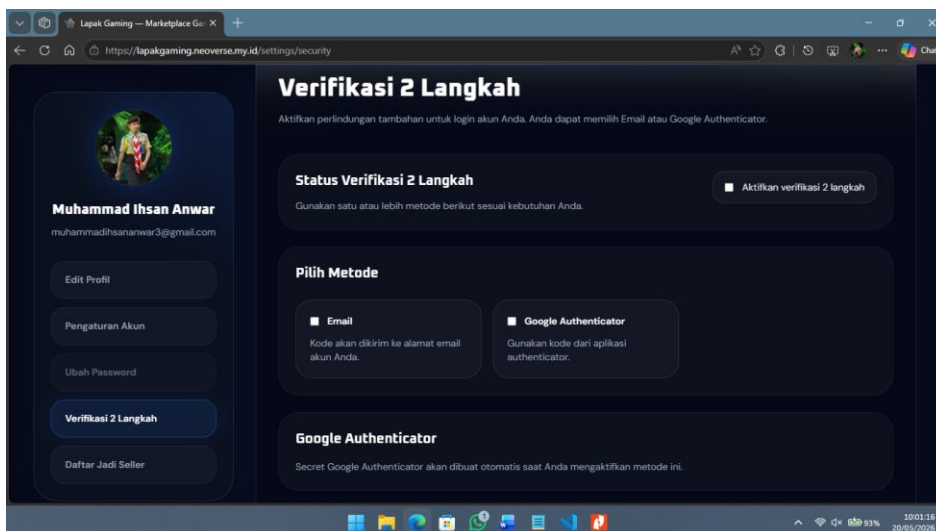
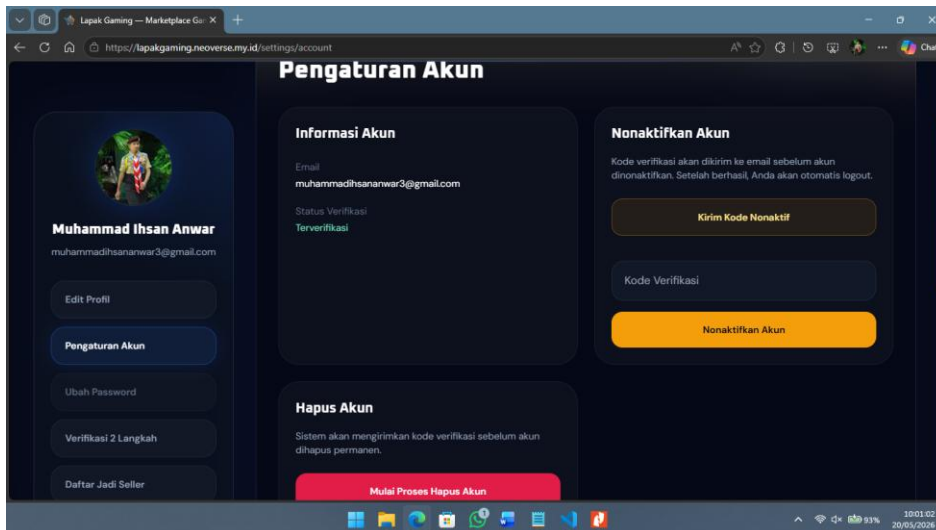
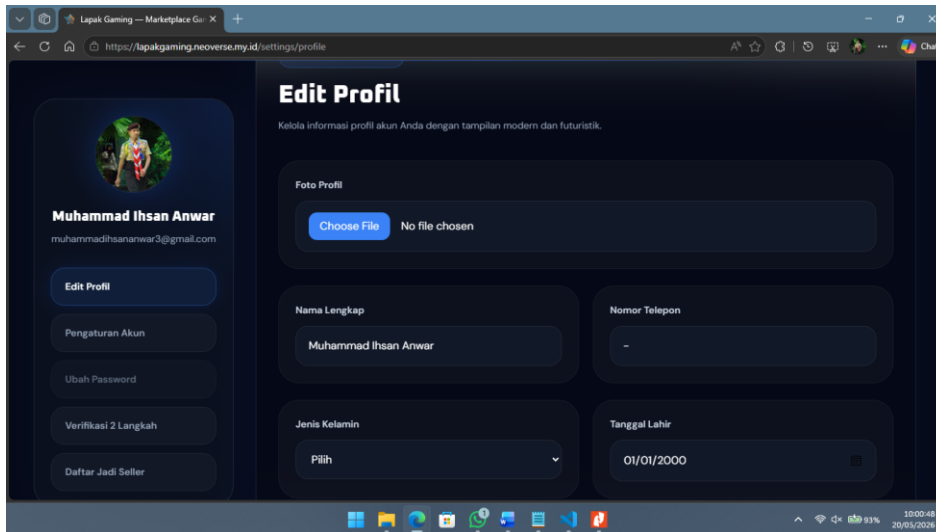
4.1 Screenshot Website

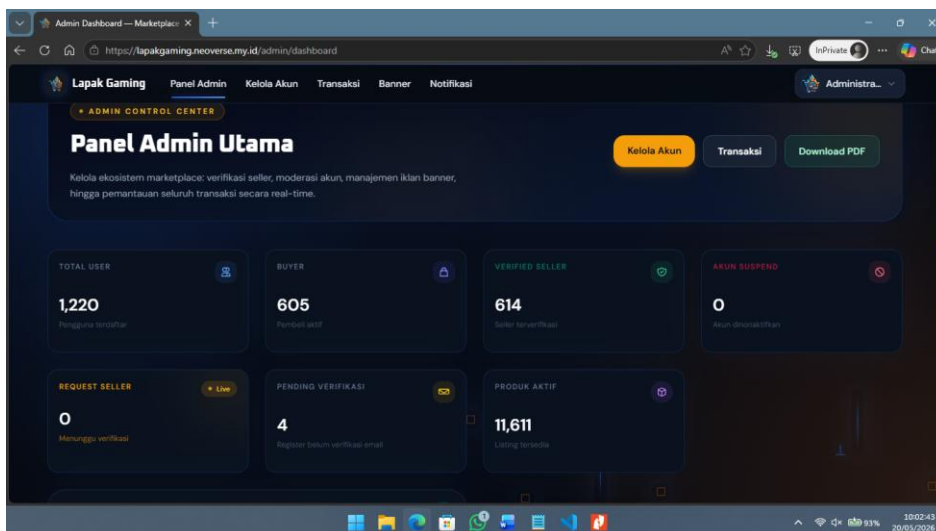
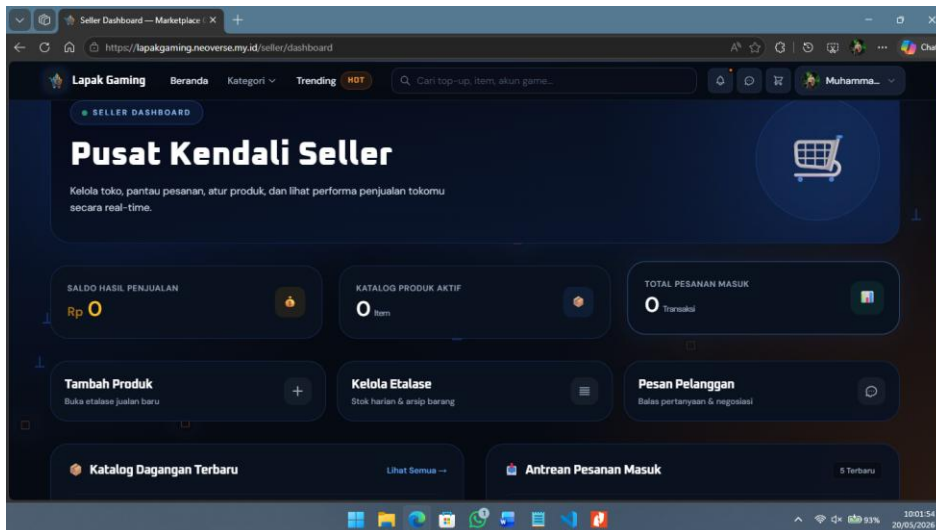
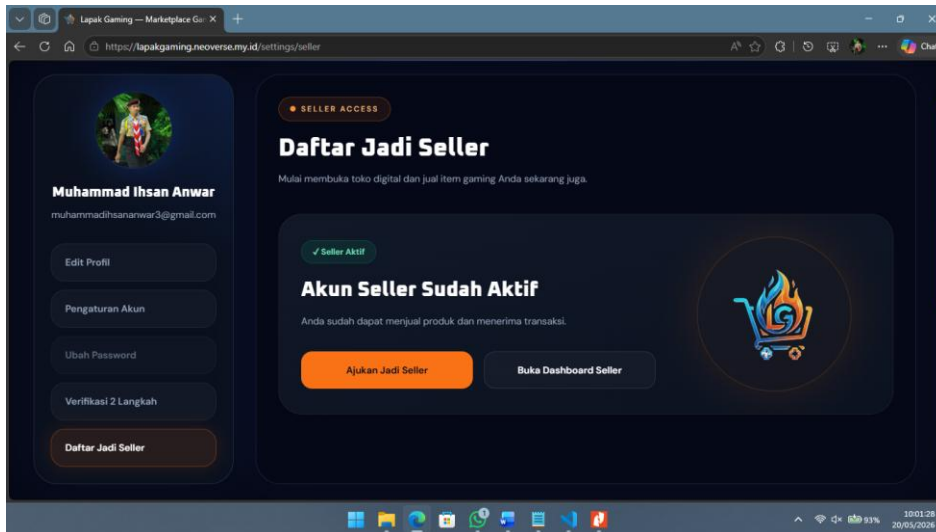


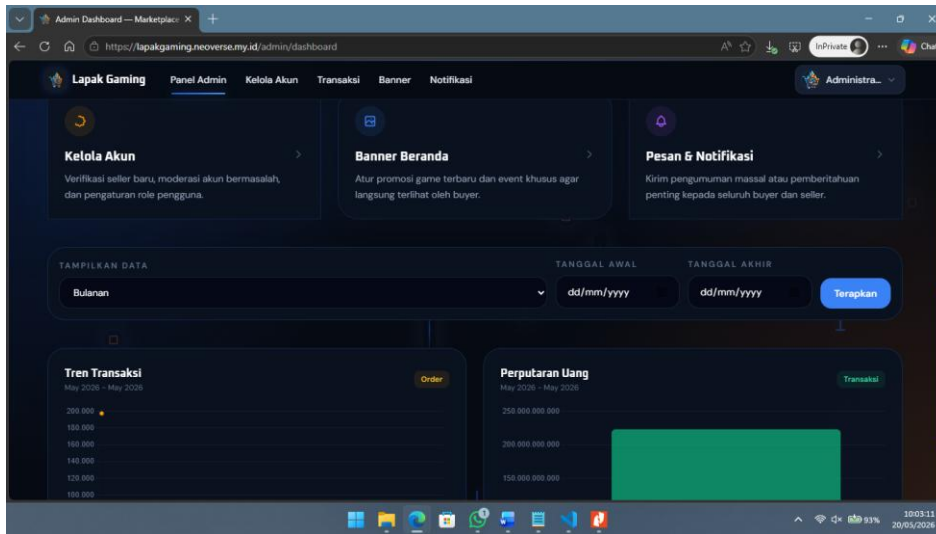




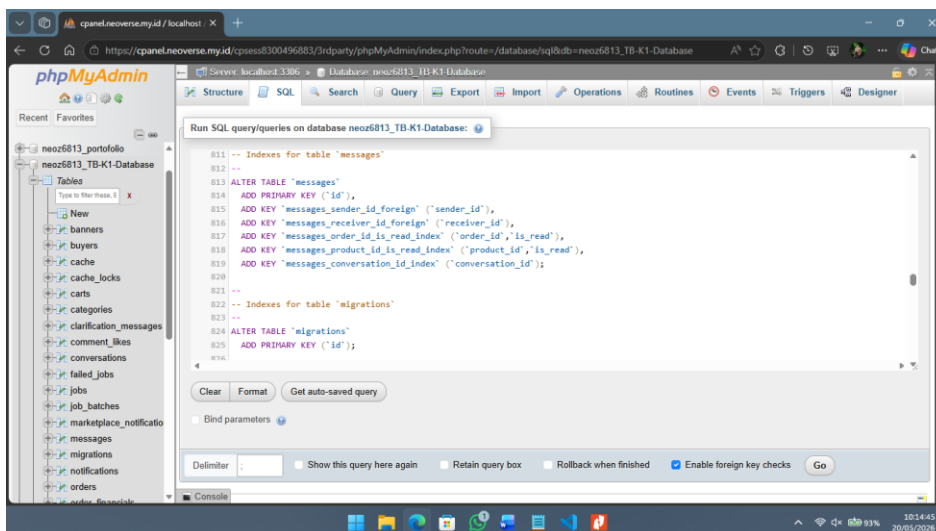
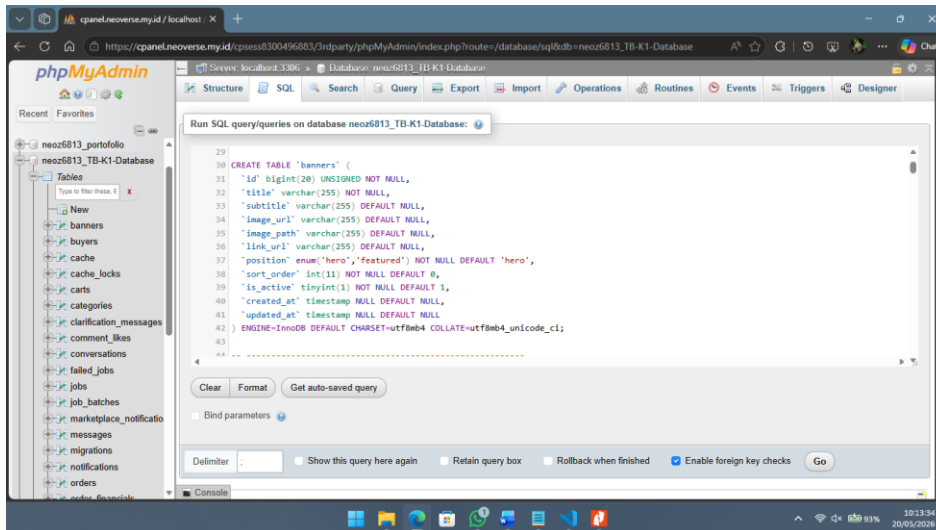






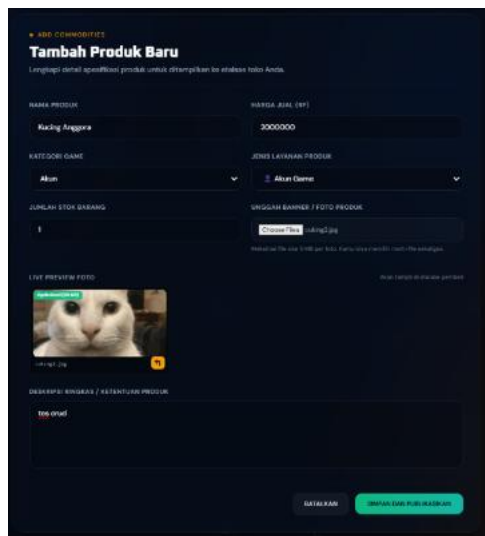


4.2 Screenshot Script DDL dan DML

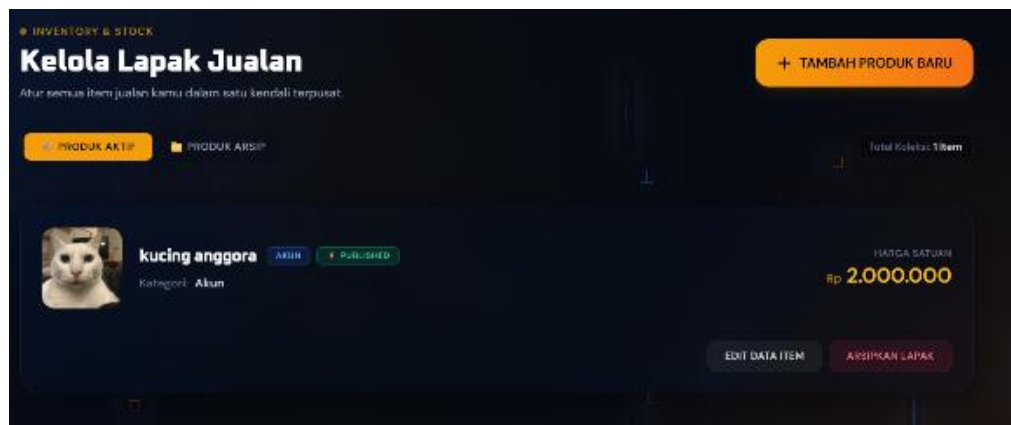


4.3 Screenshot CRUD

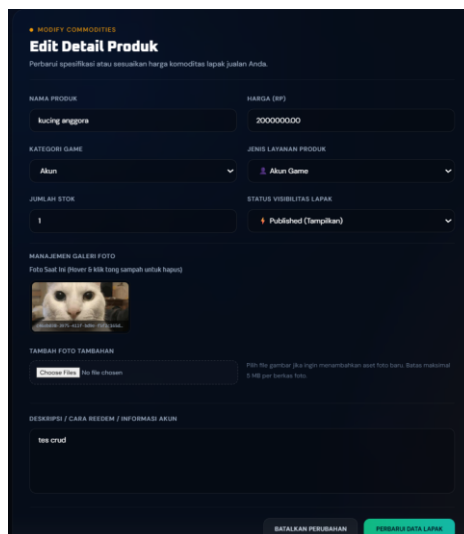
Create



Read



Update



Delete


INVENTORY & STOCK

Kelola Lapak Jual

Atur semua item jualan kamu dalam satu kendali terpusat.

+ TAMBAH PRODUK BARU

PRODUK AKTIF PRODUK ARSIP Total Koleksi: 1 Item



kucing anggora AKUN ARCHIVED

Kategori: Akun

HARGA SATUAN
Rp **2.000.000**

EDIT DATA ITEM AKTIFKAN KEMBALI HAPUS PERMANEN

BAB V

PENGUJIAN QUERY

5.1 Screenshot Hasil Eksekusi Query Kompleks

5.1.1 Query Join

```
SELECT users.name, products.name, orders.grand_total
FROM orders
JOIN users ON orders.buyer_id = users.id
JOIN order_items ON orders.id = order_items.order_id
JOIN products ON order_items.product_id = products.id;
```

Gambar 1.1 SQL

name	name	grand_total
Martini Utama	Top Up Game - atque ducimus magnam	0.00
Wika Pionda	Top Up Game - atque ducimus magnam	0.00
Dan Sakura Namapa M.TI	Top Up Game - atque ducimus magnam	0.00
Uha Wezabala	Top Up Game - atque ducimus magnam	0.00
Komana Agastha	Top Up Game - atque ducimus magnam	0.00
Sul Gelatik Laksawati S.Pd	Top Up Game - atque ducimus magnam	0.00
Lantia Zukaman	Top Up Game - atque ducimus magnam	0.00
Ushabana Intanmahes	Top Up Game - atque ducimus magnam	0.00
Uchita Lakula	Top Up Game - atque ducimus magnam	0.00
Shania Hanna Nurcahyo S. Lir	Top Up Game - atque ducimus magnam	0.00
Dika Nova Luthela	Top Up Game - atque ducimus magnam	0.00
Fariq Nurcahyo S. Kum	Top Up Game - atque ducimus magnam	0.00
Hana Gwanro	Top Up Game - atque ducimus magnam	0.00
Yosha Nishita Nurcahyo M. H	Top Up Game - atque ducimus magnam	0.00
Yani Atika Kurnawati S. T	Top Up Game - atque ducimus magnam	0.00
Mircha Agastha	Top Up Game - atque ducimus magnam	0.00
Samuel Nardi Masuda	Top Up Game - atque ducimus magnam	0.00
Toni Usman	Top Up Game - atque ducimus magnam	0.00
Hansari Kappa	Top Up Game - atque ducimus magnam	0.00
Wahyu Uha Nurcahyo S. H	Top Up Game - atque ducimus magnam	0.00
Ruli Masiba Kusumo M. Ak	Top Up Game - atque ducimus magnam	0.00
Sud Bekasari Pradono	Top Up Game - atque ducimus magnam	0.00
Wahyu Cika Nurcahyo S. H	Top Up Game - atque ducimus magnam	0.00
Yoko Navisun	Top Up Game - atque ducimus magnam	0.00
Pandu Mreka	Top Up Game - atque ducimus magnam	0.00

Gambar 1.2 Hasil

5.1.2 Query Aggregate

```
SELECT seller_id, SUM(price) AS total_penjualan
FROM products
GROUP BY seller_id
HAVING total_penjualan > 100000;
```

Gambar 2.1. SQL

seller_id	total_penjualan
1	190000.00
3	21322609.00
4	19730818.00
5	21250246.00
6	17087378.00
7	18854282.00
8	20840022.00
9	15587857.00
10	22530563.00
11	17040614.00
12	17982333.00
13	22538144.00
14	18036039.00
15	19582393.00
16	17325804.00
17	14922669.00
18	19340760.00
19	20686479.00
20	22571979.00
21	17743433.00
22	19071127.00
23	18852448.00
24	20745727.00
25	20637782.00
26	22555586.00

Gambar 2.2. Hasil

5.1.3 Query Subquery

```
SELECT name, price
FROM products
WHERE price >
(
    SELECT AVG(price)
    FROM products
);
```

Gambar 3.1 SQL

name	price
Top Up Game - atque ducimus magnam	1871253.00
Roblox Games - modi molestiae sed	1977438.00
Akun - sed consequat aspernatur	1549934.00
Voucher - tempore est eum	1083999.00
Top Up Login - magnam sunt offica	1551729.00
Streaming - maxime quia molestiae	1007933.00
Live Show - libero itaque repellendus	1974541.00
Aplikasi dan Software - eum qui sint	1570005.00
Steam Voucher - possimus incidunt quos	1171302.00
Growtopia DL - veniam repellat saepe	1724708.00
Roblox Games - et ab quibusdam	1936037.00
Akun - velit eum explicabo	1478021.00
Voucher - recusandae maiores soluta	1732025.00
Item - voluptatem minima ducimus	1793917.00
Top Up Login - quasi eum itaque	1637833.00
Puisia dan Utilitas - ut autem quam	1122981.00
Aplikasi dan Software - itaque quis esse	1391432.00
Steam Voucher - illum qui culpa	1058524.00
Steam Key - at maxime ut	1473056.00
Mobile Legends WDP - nostrum laboriosam aut	1084965.00
Top Up Game - sunt hic iusto	1521817.00
Game Key - enim et dolorum	1988864.00
Akun - error sit a	1487160.00
Voucher - distincto iusto velit	1206097.00
Joki - rerum sunt non	1904841.00

Gambar 3.2 Hasil

5.1.4 Query View

```
CREATE VIEW view_penjualan AS  
SELECT orders.id, users.name, orders.grand_total  
FROM orders  
JOIN users ON orders.buyer_id = users.id;
```

Gambar 4.1 SQL



Gambar 4.2 Hasil

BAB VI

PENUTUP

6.1 Kesimpulan

Berdasarkan hasil perancangan dan implementasi, website *Lapak Gaming* berhasil dibangun sebagai marketplace digital berbasis web yang mengadopsi konsep bisnis dari Itemku. Sistem ini mampu mengelola data pengguna, produk, transaksi, wallet, review, dan percakapan secara terintegrasi menggunakan basis data relasional.

Implementasi database menggunakan MySQL dan Laravel berhasil memenuhi kebutuhan sistem marketplace modern dengan relasi tabel yang kompleks. Selain itu, penerapan normalisasi hingga 3NF membantu mengurangi redundansi data dan meningkatkan konsistensi database.

Melalui proyek ini, konsep sistem basis data dapat diterapkan secara nyata pada studi kasus marketplace digital dengan fitur yang cukup lengkap dan modern.

6.2 Saran

Beberapa pengembangan yang dapat dilakukan:

- a. Menambahkan payment gateway otomatis.
- b. Mengembangkan aplikasi mobile.
- c. Menambahkan fitur rekomendasi produk berbasis AI.
- d. Mengoptimalkan indexing database.
- e. Menambahkan sistem keamanan anti fraud.
- f. Mengimplementasikan real-time notification.

DAFTAR PUSTAKA

- Elmasri, R., & Navathe, S. B. *Fundamentals of Database Systems*. Pearson Education, 2017.
- Connolly, T., & Begg, C. *Database Systems: A Practical Approach to Design, Implementation, and Management*. Pearson, 2015.
- Silberschatz, A., Korth, H. F., & Sudarshan, S. *Database System Concepts*. McGraw-Hill Education, 2019.
- Pressman, R. S. *Software Engineering: A Practitioner's Approach*. McGraw-Hill, 2014.
- Hoffer, J. A., Ramesh, V., & Topi, H. *Modern Database Management*. Pearson, 2016.