

Users Table - Metadata-Driven Business Rules

VIP/Private Kitchen & Restaurant POC

FIELD 1: USERNAME

Data Type

VARCHAR(50)

Category A: VALIDATION RULES

Rule	Configuration	VIP Kitchen Use	Restaurant Use	Metadata Structure
	Options	Case	Case	
Min Length	3-20 characters	5 (private kitchen intimacy)	4 (multiple chefs)	min_length: 5
Max Length	20-100 characters	20	20	max_length: 20
Pattern Match	^[a-zA-Z0-9_-]+\$	Alphanumeric + underscore + dash	Alphanumeric + underscore + dash	pattern: "^[a-zA-Z0-9_-]+\$"
No Spaces	Boolean	TRUE	TRUE	allow_spaces: false
No Special Chars	Boolean	TRUE (except - and _)	TRUE (except - and _)	special_chars_allowed: ["-", "_"]
Reserved Words	List of blocked words	["admin", "root", "system", "kitchen"]	["admin", "root", "system", "chef"]	reserved_words: [list]
Case Sensitivity	Case-sensitive or case-insensitive	Case-insensitive (convenience)	Case-insensitive	case_sensitive: false

Category B: UNIQUENESS RULES

Rule	Configuration	VIP Kitchen	Restaurant	Metadata
Global Uniqueness	Unique across entire system	FALSE (per company)	FALSE (per company)	unique_scope: "COMPANY"

Rule	Configuration	VIP Kitchen	Restaurant	Metadata
Company Uniqueness	Unique within company	TRUE	TRUE	unique_within_company: true
Allow Inactive Duplicates	Can inactive users have same username	TRUE	TRUE	unique_for_active_only: true
Historical Uniqueness	Can reuse deleted username after X days	Configurable (90 days)	Configurable (30 days)	reuse_after_days: 90

Category C: FORMATTING RULES

Rule	Configuration	VIP Kitchen	Restaurant	Metadata
Auto Lowercase	Convert to lowercase	FALSE	FALSE	auto_case: "NONE"
Auto Uppercase	Convert to uppercase	FALSE	FALSE	auto_case: "NONE"
Trim Whitespace	Remove leading/trailing spaces	TRUE	TRUE	trim_input: true
Normalize Unicode	Normalize special characters	FALSE	FALSE	normalize_unicode: false
Replace Spaces	Replace spaces with underscore	FALSE	FALSE	space_replacement: "NONE"
Prefix Generation	Auto-add prefix (e.g., "vip_", "rest_")	Optional: "chef_" prefix	Optional: "chef_" prefix	auto_prefix: "NONE"

Category D: GENERATION RULES (If User Creates No Username)

Rule	Configuration	VIP Kitchen	Restaurant	Metadata
Auto-Generate	Generate automatically if empty	FALSE (user chooses)	FALSE (user chooses)	auto_generate: false
Generation Pattern	firstname.lastname, initials+number, etc.	N/A	N/A	generation_pattern: "NONE"
Numbering Scheme	Sequential vs random	N/A	N/A	numbering_type: "NONE"

Category E: SECURITY RULES

Rule	Configuration	VIP Kitchen	Restaurant	Metadata
Username Disclosure	Can display in UI, logs, emails	Configurable (private kitchens more sensitive)	Configurable	disclosure_level: "INTERNAL"
Audit Logging	Log all changes	TRUE	TRUE	audit_log_enabled: true
Brute Force Protection	Limit login attempts with username	TRUE	TRUE	brute_force_limit: 5
Change Restrictions	How often can username be changed	Admin-only, never, yearly, etc.	Admin-only, yearly	change_frequency: "ADMIN_ONLY"
Disable Old Username	After change, disable old username	TRUE	TRUE	disable_old_on_change: true

Category F: BUSINESS RULES

Rule	Configuration	VIP Kitchen	Restaurant	Metadata
Username Requirement	Must have username	TRUE (required)	TRUE (required)	required: true
Linked to Email	Username must relate to email	FALSE (independent)	FALSE (independent)	linked_to_email: false
Linked to Name	Username must contain first/last name	FALSE (optional)	FALSE (optional)	linked_to_name: false
Role-Based Prefix	Prefix indicates role (admin_, chef_, guest_)	Optional	Optional	role_prefix_required: false
Department-Based Prefix	Prefix indicates department	FALSE	FALSE	dept_prefix_required: false
Kitchen/Location Code	Include location identifier	Optional: kitchen_dubai_01	Optional: rest_dubai_01	location_code_required: false
Active User Only	Can only login if marked active	TRUE	TRUE	active_status_required: true

Category G: INTEGRATION RULES

Rule	Configuration	VIP Kitchen	Restaurant	Metadata
Sync with External System	Sync to LDAP, Active Directory, etc.	FALSE (private)	FALSE (private)	<code>external_sync_enabled: false</code>
Username	Cannot be changed	Configurable	Configurable	<code>immutable_after_creation: true</code>
Immutable After Creation	once created	(TRUE recommended)	(TRUE recommended)	
Export Format	Format for export (CSV, JSON)	Full username	Full username	<code>export_format: "FULL"</code>

FIELD 2: EMAIL

Data Type

VARCHAR(255)

Category A: VALIDATION RULES

Rule	Configuration	VIP Kitchen	Restaurant	Metadata
RFC 5322 Compliance	Validate against email standard	TRUE	TRUE	<code>rfc_5322_compliant: true</code>
Min Length	Minimum email length	5	5	<code>min_length: 5</code>
Max Length	Maximum email length	255	255	<code>max_length: 255</code>
Domain Whitelist	Only allow certain domains	Optional: @company.com only	Optional: @restaurant.com only	<code>domain_whitelist: []</code>
Domain Blacklist	Block certain domains	Excluded: temp email domains	Excluded: temp email domains	<code>domain_blacklist: ["tempmail.com", "guerrillamail.com"]</code>
Multiple Emails	Allow multiple emails per user	FALSE	FALSE	<code>multiple_emails_allowed: false</code>

Rule	Configuration	VIP Kitchen	Restaurant	Metadata
Subdomain Support	Allow emails with subdomains	TRUE	TRUE	<code>subdomain_allowed: true</code>
Plus Addressing	Allow + notation (<code>user+tag@domain.com</code>)	Configurable (TRUE)	Configurable (TRUE)	<code>plus_addressing_allowed: true</code>
Email Verification	Require email verification on signup	TRUE	TRUE	<code>verification_required: true</code>
Verification Timeout	How long verification link valid	24 hours	24 hours	<code>verification_timeout_hours: 24</code>

Category B: UNIQUENESS RULES

Rule	Configuration	VIP Kitchen	Restaurant	Metadata
Global Uniqueness	Unique across entire system	Configurable (FALSE)	Configurable (FALSE)	<code>unique_scope: "COMPANY"</code>
Company Uniqueness	Unique within company	TRUE	TRUE	<code>unique_within_company: true</code>
Allow Inactive Duplicates	Inactive users can have same email	FALSE (not recommended)	FALSE (not recommended)	<code>unique_for_active_only: true</code>
Historical Uniqueness	Can reuse deleted email after X days	Configurable (120 days)	Configurable (60 days)	<code>reuse_after_days: 120</code>
Multiple Users Same Email	Can multiple users share email	FALSE	FALSE	<code>multiple_users_same_email: false</code>

Category C: FORMATTING RULES

Rule	Configuration	VIP Kitchen	Restaurant	Metadata
		Kitchen		
Auto Lowercase	Convert to lowercase	TRUE	TRUE	<code>auto_case: "LOWERCASE"</code>
Normalize Unicode	Handle international characters	FALSE (keep as-is)	FALSE (keep as-is)	<code>normalize_unicode: false</code>

Rule	Configuration	VIP Kitchen	Restaurant	Metadata
Kitchen				
Trim Whitespace	Remove leading/trailing spaces	TRUE	TRUE	<code>trim_input: true</code>
Remove Dots	Remove dots from email (<u>user.name@domain.com</u> becomes <u>username@domain.com</u>)	FALSE	FALSE	<code>remove_dots: false</code>

Category D: SECURITY RULES

Rule	Configuration	VIP Kitchen	Restaurant	Metadata
Masked in Logs	Hide full email in logs (show partial)	TRUE	TRUE	<code>masked_in_logs: true</code>
Audit Logging	Log all email changes	TRUE	TRUE	<code>audit_log_enabled: true</code>
Email Confirmation on Change	Send confirmation email when changed	TRUE	TRUE	<code>confirmation_on_change: true</code>
Rate Limit Change	How often can email be changed	Once per 30 days	Once per 30 days	<code>change_limit_days: 30</code>
Admin Approval	Admin must approve email change	Configurable (FALSE)	Configurable (FALSE)	<code>admin_approval_required:</code> <u>false</u>
Notification on Change	Send email confirming change	TRUE	TRUE	<code>notify_on_change: true</code>
Old Email Grace Period	Keep old email working for X days after change	7 days	7 days	<code>old_email_grace_period_days:</code> <u>7</u>
Brute Force Protection	Prevent email enumeration attacks	TRUE	TRUE	<code>preventEnumeration: true</code>

Category E: BUSINESS RULES

Rule	Configuration	VIP Kitchen	Restaurant	Metadata
Email Requirement	Must have email	TRUE (required)	TRUE (required)	<code>required: true</code>
Email as Username	Can use email as alternate login	Configurable (TRUE)	Configurable (TRUE)	<code>can_use_as_login: true</code>

Rule	Configuration	VIP Kitchen	Restaurant	Metadata
Corporate Email Only	Must use company domain	FALSE	FALSE	<code>corporate_only: false</code>
Personal Email Backup	Allow personal email as backup	Configurable (TRUE)	Configurable (TRUE)	<code>allow_personal_backup: true</code>
Role-Based Email Format	Email format depends on role	FALSE	FALSE	<code>role_based_format: false</code>
Department Email Format	Email must include department	FALSE	FALSE	<code>dept_based_format: false</code>
Primary Email Indicator	Track which email is primary	TRUE	TRUE	<code>primary_email_indicator: true</code>
Secondary Email Support	Allow secondary emails	FALSE	FALSE	<code>allow_secondary_emails: false</code>

Category F: COMMUNICATION RULES

Rule	Configuration	VIP Kitchen	Restaurant	Metadata
Default Communication Channel	Use email for notifications	TRUE	TRUE	<code>use_for_notifications: true</code>
Marketing Communications	Can receive marketing emails	Opt-in (configurable)	Opt-in (configurable)	<code>marketing_opt_in: "EXPLICIT"</code>
Transactional Emails	Send transactional emails	Always TRUE	Always TRUE	<code>transactional_emails: true</code>
Digest Frequency	How often to send digest emails	Daily, Weekly, Monthly	Daily, Weekly	<code>digest_frequency: "WEEKLY"</code>
Do Not Contact	Respect DNC list	TRUE	TRUE	<code>respect_dnc_list: true</code>

Category G: INTEGRATION RULES

Rule	Configuration	VIP Kitchen	Restaurant	Metadata
Sync with External Email System	Sync to mail server, CRM, etc.	Configurable (FALSE)	Configurable (FALSE)	<code>external_sync_enabled: false</code>
Email Address Immutable	Cannot change email once created	FALSE (can change with confirmation)	FALSE (can change with confirmation)	<code>immutable_after_creation: false</code>
Export Format	Format for export (masked, full, domain-only)	Full email	Full email	<code>export_format: "FULL"</code>

FIELD 3: PASSWORDHASH

Data Type

VARCHAR(255) - Hashed value, never plain text

Category A: VALIDATION RULES

Rule	Configuration	VIP Kitchen	Restaurant	Metadata
Hashing Algorithm	bcrypt, SHA256, Argon2, PBKDF2	brypt (recommended)	brypt (recommended)	<code>algorithm: "BCRYPT"</code>
Hash Cost Factor	Number of rounds (bcrypt: 10-12)	12	12	<code>cost_factor: 12</code>
Salting	Random salt per hash	TRUE (always required)	TRUE (always required)	<code>salting_required: true</code>
Min Password Length	Minimum password length	8-12 characters	8-12 characters	<code>min_password_length: 12</code>
Max Password Length	Maximum password length	128 characters	128 characters	<code>max_password_length: 128</code>
Password Complexity	Require uppercase, lowercase, numbers, special chars	Configurable (TRUE)	Configurable (TRUE)	<code>require_complexity: true</code>

Rule	Configuration	VIP Kitchen	Restaurant	Metadata
Uppercase Requirement	Require at least 1 uppercase	Configurable (TRUE)	Configurable (TRUE)	<code>require_uppercase: true</code>
Lowercase Requirement	Require at least 1 lowercase	Configurable (TRUE)	Configurable (TRUE)	<code>require_lowercase: true</code>
Numbers Requirement	Require at least 1 number	Configurable (TRUE)	Configurable (TRUE)	<code>require_numbers: true</code>
Special Chars Requirement	Require at least 1 special character	Configurable (TRUE)	Configurable (TRUE)	<code>require_special_chars: true</code>
Allowed Special Chars	List of special characters allowed	<code>[@#\$%^&*</code> <code>0_+=[]{};;</code> <code><>?,./</code>	<code>!@#\$%^&*</code> <code>0_+=[]{};;</code> <code><>?,./</code>	<code>allowed_special_chars: [list]</code>
No Dictionary Words	Block common passwords from dictionary	TRUE	TRUE	<code>block_dictionary_words: true</code>
No User Info	Block password containing username/email/name	TRUE	TRUE	<code>block_user_info_in_password: true</code>
Password History	Cannot reuse last N passwords	5 previous passwords	5 previous passwords	<code>password_history_count: 5</code>

Category B: GENERATION RULES (If Password Auto-Generated)

Rule	Configuration	VIP Kitchen	Restaurant	Metadata
Auto-Generate Option	Generate temporary password on first login	Configurable (TRUE)	Configurable (TRUE)	<code>auto_generate_on_creation: true</code>
Temporary Password Length	Length of auto-generated password	12 characters	12 characters	<code>temp_password_length: 12</code>
Temporary Password Validity	How long temp password valid	24 hours	24 hours	<code>temp_password_validity_hours: 24</code>
Force Change on First Login	Must change temp password immediately	TRUE	TRUE	<code>force_change_on_first_login: true</code>

Category C: SECURITY RULES

Rule	Configuration	VIP Kitchen	Restaurant	Metadata
Never Store Plain Text	Always hash, never log plaintext	TRUE (absolute requirement)	TRUE (absolute requirement)	<code>never_plaintext: true</code>
No Email in Password	Never send plaintext password via email	TRUE	TRUE	<code>no_email_password: true</code>
Password Expiration	Force password change after X days	90 days (configurable)	90 days (configurable)	<code>expiration_days: 90</code>
Password Expiration Warning	Notify user before expiration	7 days before	7 days before	<code>expiration_warning_days: 7</code>
Login Attempt Limit	Max failed login attempts before lock	5 attempts	5 attempts	<code>max_failed_attempts: 5</code>
Lockout Duration	How long account locked after failed attempts	15 minutes	15 minutes	<code>lockout_duration_minutes: 15</code>
Progressive Lockout	Increase lockout duration after repeated failures	FALSE (fixed)	FALSE (fixed)	<code>progressive_lockout: false</code>
Account Unlock Method	Admin manual unlock, time-based, email link	Email link + admin option	Email link + admin option	<code>unlock_method: ["EMAIL_LINK", "ADMIN"]</code>
Session Timeout	Logout user after X minutes of inactivity	30 minutes	30 minutes	<code>session_timeout_minutes: 30</code>
Concurrent Sessions Limit	How many active sessions per user	1 session	1 session	<code>max_concurrent_sessions: 1</code>
IP Whitelist	Restrict login to specific IPs	Configurable (FALSE)	Configurable (FALSE)	<code>ip_whitelist_enabled: false</code>
Suspicious Login Alert	Alert on unusual login location/time	TRUE	TRUE	<code>suspicious_login_alert: true</code>
Two-Factor Authentication	Require 2FA for login	Configurable (TRUE recommended)	Configurable (TRUE recommended)	<code>two_factor_required: false</code>

Rule	Configuration	VIP Kitchen	Restaurant	Metadata
Audit Logging	Log all password change events	TRUE	TRUE	<code>audit_log_enabled: true</code>
Admin Cannot View	Admin cannot view user passwords	TRUE (absolute requirement)	TRUE (absolute requirement)	<code>admin_view_disabled: true</code>
Password Reset Token	Use secure tokens for password resets	TRUE	TRUE	<code>reset_token_required: true</code>
Password Reset Timeout	How long reset token valid	1 hour	1 hour	<code>reset_token_validity_hours: 1</code>

Category D: BUSINESS RULES

Rule	Configuration	VIP Kitchen	Restaurant	Metadata
Password Requirement	Must have password	TRUE (required)	TRUE (required)	<code>required: true</code>
Disable Account on Multiple Failed Attempts	Auto-disable after X failed attempts	Configurable (after 10 attempts, 1 hour)	Configurable (after 10 attempts, 1 hour)	<code>auto_disable_after_attempts: 10</code>
Force Password Change on First Login	New users must change password immediately	TRUE	TRUE	<code>force_change_on_first_login: true</code>
Role-Based Password Policy	Different policy for different roles	FALSE (same for all)	FALSE (same for all)	<code>role_based_policy: false</code>
GDPR Compliance	Store password securely per GDPR	TRUE	TRUE	<code>gdpr_compliant: true</code>

Category E: INTEGRATION RULES

Rule	Configuration	VIP Kitchen	Restaurant	Metadata
Single Sign-On (SSO)	Support SSO instead of password	Configurable (FALSE)	Configurable (FALSE)	<code>sso_enabled: false</code>
LDAP/Active Directory	Authenticate against LDAP/AD	FALSE (internal auth)	FALSE (internal auth)	<code>ldap_enabled: false</code>

Rule	Configuration	VIP Kitchen	Restaurant	Metadata
Social Login	Allow Google, Facebook login	FALSE (private system)	FALSE (private system)	<code>social_login_enabled: false</code>

FIELD 4: FIRSTNAME

Data Type

VARCHAR(100)

Category A: VALIDATION RULES

Rule	Configuration	VIP Kitchen	Restaurant	Metadata
Min Length	Minimum first name length	2 characters	2 characters	<code>min_length: 2</code>
Max Length	Maximum first name length	100 characters	100 characters	<code>max_length: 100</code>
Pattern Match	Allow letters, spaces, hyphens, apostrophes	<code>^[a-zA-Z\s\-\']+\$</code>	<code>^[a-zA-Z\s\-\']+\$</code>	<code>pattern: "^[a-zA-Z\\s\\-']+\$"</code>
No Numbers	Block numeric characters	TRUE	TRUE	<code>allow_numbers: false</code>
No Special Chars	Block special characters (except - and ')	TRUE (except - and ')	TRUE (except - and ')	<code>special_chars_allowed: ["-", "'"]</code>
International Characters	Allow non-ASCII (é, ñ, ü, etc.)	TRUE	TRUE	<code>international_chars_allowed: true</code>
Unicode Normalization	Normalize Unicode (NFC or NFD)	TRUE (NFC)	TRUE (NFC)	<code>unicode_normalization: "NFC"</code>

Category B: FORMATTING RULES

Rule	Configuration	VIP Kitchen	Restaurant	Metadata
Auto Trim	Remove leading/trailing spaces	TRUE	TRUE	<code>trim_input: true</code>

Rule	Configuration	VIP Kitchen	Restaurant	Metadata
Auto Capitalize	Capitalize first letter (John, not john)	TRUE	TRUE	<code>auto_capitalize: true</code>
Multiple Spaces	Collapse multiple spaces	TRUE	TRUE	<code>collapse_multiple_spaces: true</code>
Collapse	to single			
Title Case Conversion	Convert to title case (John Smith)	FALSE (keep as entered)	FALSE (keep as entered)	<code>title_case: false</code>
Remove Extra Spaces	Trim internal spaces	FALSE	FALSE	<code>remove_internal_spaces: false</code>

Category C: BUSINESS RULES

Rule	Configuration	VIP Kitchen	Restaurant	Metadata
First Name Requirement	Must have first name (required)	TRUE (required)	TRUE (required)	<code>required: true</code>
Linked to Username	First name must match username	FALSE (optional)	FALSE (optional)	<code>linked_to_username: false</code>
Linked to Email	First name must match email prefix	FALSE (optional)	FALSE (optional)	<code>linked_to_email: false</code>
Used in Greeting	Display first name in greeting emails	TRUE	TRUE	<code>use_in_greeting: true</code>
Used in Reports	Display first name in reports	TRUE	TRUE	<code>use_in_reports: true</code>
Distinct from Last Name	First and last name must be different	FALSE (optional)	FALSE (optional)	<code>must_differ_from_lastname: false</code>
Professional Title	Can include titles (Chef, Mr., Dr., etc.)	FALSE (separate field)	FALSE (separate field)	<code>allow_titles: false</code>
Nickname Support	Store nickname separately	Configurable (TRUE)	Configurable (TRUE)	<code>nickname_field_enabled: true</code>

Category D: PRIVACY & DISPLAY RULES

Rule	Configuration	VIP Kitchen	Restaurant	Metadata
Public Display	Can display first name publicly	Configurable (TRUE for VIP)	Configurable (TRUE for staff, FALSE for guests)	<code>display_publicly: true</code>
Guest Visibility	Can guests see first name	Configurable (TRUE for chefs, FALSE for guests)	Configurable (TRUE for staff)	<code>visible_to_guests: true</code>
External Sharing	Can share first name with third parties	FALSE	FALSE	<code>allow_external_sharing: false</code>
Masked in Logs	Show initials in logs	FALSE (show full name)	FALSE (show full name)	<code>masked_in_logs: false</code>

Category E: INTEGRATION RULES

Rule	Configuration	VIP Kitchen	Restaurant	Metadata
Sync with External System	Sync to calendar, email, CRM	FALSE	FALSE	<code>external_sync_enabled: false</code>
Used for Document Generation	Include in contracts, certificates	TRUE	TRUE	<code>use_in_documents: true</code>
Immutable After Creation	Cannot be changed once created	FALSE (can be changed)	FALSE (can be changed)	<code>immutable_after_creation: false</code>
Change Audit Log	Log all first name changes	TRUE	TRUE	<code>audit_log_enabled: true</code>
Export Format	Include in data exports	Full first name	Full first name	<code>export_format: "FULL"</code>

FIELD 5: LASTNAME

Data Type

VARCHAR(100)

Category A: VALIDATION RULES

Rule	Configuration	VIP Kitchen	Restaurant	Metadata
Min Length	Minimum last name length	2 characters	2 characters	<code>min_length: 2</code>
Max Length	Maximum last name length	100 characters	100 characters	<code>max_length: 100</code>
Pattern Match	Allow letters, spaces, hyphens, apostrophes	<code>^[a-zA-Z\s\-\']+\$</code>	<code>^[a-zA-Z\s\-\']+\$</code>	<code>pattern: "^[a-zA-Z\s\-\']+\\$"</code>
No Numbers	Block numeric characters	TRUE	TRUE	<code>allow_numbers: false</code>
No Special Chars	Block special characters (except - and ')	TRUE (except - and ')	TRUE (except - and ')	<code>special_chars_allowed: ["-", "'"]</code>
International Characters	Allow non-ASCII (é, ñ, ü, etc.)	TRUE	TRUE	<code>international_chars_allowed: true</code>
Unicode Normalization	Normalize Unicode (NFC or NFD)	TRUE (NFC)	TRUE (NFC)	<code>unicode_normalization: "NFC"</code>
Compound Surnames	Allow hyphenated/compound last names	TRUE	TRUE	<code>allow_compound_names: true</code>

Category B: FORMATTING RULES

Rule	Configuration	VIP Kitchen	Restaurant	Metadata
Auto Trim	Remove leading/trailing spaces	TRUE	TRUE	<code>trim_input: true</code>
Auto Capitalize	Capitalize first letter of each word (Van Helsing, not van helsing)	TRUE	TRUE	<code>auto_capitalize: true</code>
Multiple Spaces Collapse	Collapse multiple spaces to single	TRUE	TRUE	<code>collapse_multiple_spaces: true</code>
Title Case Conversion	Convert to title case	FALSE (keep as entered)	FALSE (keep as entered)	<code>title_case: false</code>

Rule	Configuration	VIP Kitchen	Restaurant	Metadata
Hyphen Handling	Normalize hyphen spacing (Van-Helsing vs Van - Helsing)	TRUE (normalize)	TRUE (normalize)	normalize_hyphen: true

Category C: BUSINESS RULES

Rule	Configuration	VIP Kitchen	Restaurant	Metadata
Last Name Requirement	Must have last name	TRUE (required)	TRUE (required)	required: true
Linked to Username	Last name must match username	FALSE (optional)	FALSE (optional)	linked_to_username: false
Linked to Email	Last name must match email	FALSE (optional)	FALSE (optional)	linked_to_email: false
Distinct from First Name	First and last name must be different	FALSE (optional)	FALSE (optional)	must_differ_from_firstname: false
Maiden Name Support	Store maiden name separately	Configurable (FALSE)	Configurable (FALSE)	maiden_name_field_enabled: false
Professional Title	Can include titles (Chef, Sous Chef, etc.)	FALSE (separate field)	FALSE (separate field)	allow_titles: false
Used in Formal Documents	Display in contracts, certificates	TRUE	TRUE	use_in_formal_documents: true

Category D: PRIVACY & DISPLAY RULES

Rule	Configuration	VIP Kitchen	Restaurant	Metadata
Public Display	Can display last name publicly	Configurable (TRUE for VIP kitchen staff)	Configurable (TRUE for staff, FALSE for guests)	display_publicly: true
Guest Visibility	Can guests see last name	Configurable (TRUE for chefs)	Configurable (TRUE for kitchen staff)	visible_to_guests: true
External Sharing	Can share last name with third parties	FALSE	FALSE	allow_external_sharing: false
Masked in Logs	Show initials in logs	FALSE (show full name)	FALSE (show full name)	masked_in_logs: false

Rule	Configuration	VIP Kitchen	Restaurant	Metadata
Partial Display	Display only initials in certain contexts	Configurable (FALSE)	Configurable (FALSE)	<code>display_initials_only: false</code>

Category E: INTEGRATION RULES

Rule	Configuration	VIP Kitchen	Restaurant	Metadata
Sync with External System	Sync to calendar, email, CRM	FALSE	FALSE	<code>external_sync_enabled: false</code>
Used for Search	Index last name for search	TRUE	TRUE	<code>searchable: true</code>
Immutable After Creation	Cannot be changed once created	FALSE (can be changed)	FALSE (can be changed)	<code>immutable_after_creation: false</code>
Change Audit Log	Log all last name changes	TRUE	TRUE	<code>audit_log_enabled: true</code>
Export Format	Include in data exports	Full last name	Full last name	<code>export_format: "FULL"</code>

METADATA STRUCTURE (For All Fields)

json

```
{  
    "field_name": "username",  
    "field_type": "VARCHAR(50)",  
    "required": true,  
    "validation_rules": {  
        "min_length": 5,  
        "max_length": 20,  
        "pattern": "^[a-zA-Z0-9_-]+$",  
        "allow_spaces": false,  
        "special_chars_allowed": ["-", "_"],  
        "reserved_words": ["admin", "root", "system", "kitchen"],  
        "case_sensitive": false  
    },  
    "uniqueness_rules": {  
        "unique_scope": "COMPANY",  
        "unique_within_company": true,  
        "unique_for_active_only": true,  
        "reuse_after_days": 90  
    },  
    "formatting_rules": {  
        "auto_case": "NONE",  
        "trim_input": true,  
        "normalize_unicode": false,  
        "auto_prefix": "NONE"  
    },  
    "security_rules": {  
        "disclosure_level": "INTERNAL",  
        "audit_log_enabled": true,  
        "brute_force_limit": 5,  
        "change_frequency": "ADMIN_ONLY",  
        "disable_old_on_change": true  
    },  
    "business_rules": {  
        "role_prefix_required": false,  
        "location_code_required": false,  
        "active_status_required": true  
    },  
    "integration_rules": {  
        "external_sync_enabled": false,  
        "immutable_after_creation": true,  
        "export_format": "FULL"  
    },  
    "vip_kitchen_specific": {  
        "additional_config": "..."  
    },  
    "restaurant_specific": {  
    }
```

```

    "additional_config": "..."
}
}

```

SUMMARY TABLE: Rules by Category

Category	Username	Email	PasswordHash	FirstName	LastName
Validation Rules	8 rules	11 rules	13 rules	6 rules	7 rules
Uniqueness Rules	4 rules	5 rules	N/A	N/A	N/A
Formatting Rules	6 rules	4 rules	N/A	5 rules	5 rules
Generation Rules	3 rules	N/A	4 rules	N/A	N/A
Security Rules	8 rules	8 rules	16 rules	N/A	N/A
Business Rules	8 rules	5 rules	5 rules	8 rules	8 rules
Integration Rules	3 rules	2 rules	3 rules	5 rules	4 rules
Privacy/Display Rules	N/A	N/A	N/A	4 rules	5 rules
Communication Rules	N/A	5 rules	N/A	N/A	N/A
TOTAL RULES	40	40	41	32	34

IMPLEMENTATION NOTES

- Pre-defined, Not Generated:** All 40-41 rules per field are pre-defined. AI selects from these options based on company requirements.
- Configurable by Business:** Each business downloads metadata with rule defaults, then configures which rules apply to them.
- Rule Conflicts Resolution:** Metadata validator checks for conflicting rules (e.g., immutable + changeable) and flags for human review.
- Extensibility:** New rules can be added to the pre-defined list in future releases, but never generated at runtime.
- Inheritance:** Child tables (Guests, Employees, etc.) can inherit or override parent rules.

6. **Audit Trail:** Every rule configuration change is logged with timestamp, user, and reason.
7. **Testing:** Each rule configuration set automatically triggers test cases before deployment.
8. **Documentation:** Each rule includes description, use cases, and best practices for VIP Kitchen and Restaurant segments.