

Código do Projeto DEV Platform

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1. composition_root.py

Caminho: scripts\stake_file\composition_root.py

Tamanho: 3693 bytes

```
# src/dev_platform/infrastructure/composition_root.py
from typing import List, Optional
from application.user.use_cases import (
    CreateUserUseCase,
    ListUsersUseCase,
    UpdateUserUseCase,
    GetUserUseCase,
    DeleteUserUseCase
)
from infrastructure.database.unit_of_work import SQLUnitOfWork
from infrastructure.logging.structured_logger import StructuredLogger
from domain.user.services import (
    UserDomainService,
    UserAnalyticsService,
    DomainServiceFactory
)

class CompositionRoot:
    """
    Composition root for dependency injection.
    Centralizes the creation and configuration of all application
    dependencies.
    """

    def __init__(self, config: dict = None):
        self._config = config or {}
        self._logger = StructuredLogger()
        self._uow = None
        self._domain_service_factory = DomainServiceFactory()

    @property
    def uow(self) -> SQLUnitOfWork:
        if self._uow is None:
            self._uow = SQLUnitOfWork()
        return self._uow

    @property
```

```

def domain_service_factory(self) -> DomainServiceFactory:
return self._domain_service_factory

# Use Cases - CORRIGIDO: Adicionando domain_service_factory onde
necessário

def create_user_use_case(self) -> CreateUserUseCase:
return CreateUserUseCase(
uow=self.uow,
logger=self._logger,
domain_service_factory=self.domain_service_factory # ADICIONADO
)

def list_users_use_case(self) -> ListUsersUseCase:
return ListUsersUseCase(
uow=self.uow,
logger=self._logger
)

def update_user_use_case(self) -> UpdateUserUseCase:
return UpdateUserUseCase(
uow=self.uow,
logger=self._logger,
domain_service_factory=self.domain_service_factory # ADICIONADO
)

def get_user_use_case(self) -> GetUserUseCase:
return GetUserUseCase(
uow=self.uow,
logger=self._logger
)

def delete_user_use_case(self) -> DeleteUserUseCase:
return DeleteUserUseCase(
uow=self.uow,
logger=self._logger
)

# Domain Services

def user_domain_service(self, user_repository) -> UserDomainService:
"""
Create UserDomainService with configuration-based rules.
"""

```

```

# Get configuration for validation rules
validation_config = self._config.get('validation', {})

return self.domain_service_factory.create_user_domain_service(
    user_repository=user_repository,
    enable_profanity_filter=validation_config.get('enable_profanity_filter', False),
    allowed_domains=validation_config.get('allowed_domains'),
    business_hours_only=validation_config.get('business_hours_only', False)
)

def user_analytics_service(self, user_repository) ->
UserAnalyticsService:
    """Create UserAnalyticsService."""
    return
    self.domain_service_factory.create_analytics_service(user_repository)

# Utility methods for specific configurations
def create_enterprise_user_domain_service(self, user_repository) ->
UserDomainService:
    """
    Create UserDomainService with enterprise-level validation rules.
    """
    return self.domain_service_factory.create_user_domain_service(
        user_repository=user_repository,
        enable_profanity_filter=True,
        allowed_domains=['empresa.com', 'company.com'],
        business_hours_only=True
    )

```

2. config.py

Caminho: scripts\stake_file\config.py

Tamanho: 3506 bytes

```
# src/dev_platform/infrastructure/config.py
from dotenv import load_dotenv
import os
import json
from typing import Dict, Any, Optional
from domain.user.exceptions import ConfigurationException

class Configuration:
    """Classe avançada para gerenciar configurações da aplicação."""
    _instance = None

    def __new__(cls):
        if cls._instance is None:
            cls._instance = super().__new__(cls)
            cls._instance._initialized = False
            return cls._instance

    def __init__(self):
        if self._initialized:
            return

        load_dotenv()
        self.environment = os.getenv("ENVIRONMENT", "development")
        self.config = {}
        self._load_config()
        self._initialized = True

    def _load_config(self):
        """Carrega configurações baseadas no ambiente."""
        # Configurações base aplicáveis a todos os ambientes
        self.config = {
            "database": {
                "url": os.getenv("DATABASE_URL"),
                "pool_size": int(os.getenv("DB_POOL_SIZE", "5")),
                "max_overflow": int(os.getenv("DB_MAX_OVERFLOW", "10"))
            },
            "logging": {
```

```

"level": os.getenv("LOG_LEVEL", "INFO"),
"format": os.getenv("LOG_FORMAT", "json")
},
"app": {
"debug": os.getenv("DEBUG", "False").lower() == "true"
}
}

# Carrega configurações específicas do ambiente, se existirem
config_file = f"config/{self.environment}.json"
if os.path.exists(config_file):
with open(config_file, 'r') as f:
env_config = json.load(f)
# Mescla com as configurações existentes
self._merge_configs(self.config, env_config)

def _merge_configs(self, base_config: Dict, new_config: Dict) -> None:
    """Mescla configurações recursivamente."""
    for key, value in new_config.items():
        if key in base_config and isinstance(base_config[key], dict) and
            isinstance(value, dict):
            self._merge_configs(base_config[key], value)
        else:
            base_config[key] = value

def get_database_url(self) -> str:
    """Obtém a URL do banco de dados ou lança uma exceção."""
    url = self.config.get("database", {}).get("url")
    if not url:
        if self.environment == "development":
            return os.getenv("DATABASE_URL") #
            "mysql+aiomysql://root:Malato#01@127.0.0.1:3306/user_management" #
            "sqlite:///./dev.db"
        raise ConfigurationException("DATABASE_URL environment variable is not
        set")
    return url

def get_config(self) -> Dict[str, Any]:
    """Retorna todas as configurações como um dicionário."""
    return self.config

def get(self, path: str, default: Any = None) -> Any:

```

```
"""Obtém um valor de configuração por caminho pontilhado, ex:
'database.url'"""
keys = path.split(".")
value = self.config

for key in keys:
    if isinstance(value, dict) and key in value:
        value = value[key]
    else:
        return default

return value

# Instância Singleton para uso fácil em outros módulos
CONFIG = Configuration()
DATABASE_URL = CONFIG.get_database_url()
```

3. dtos.py

Caminho: scripts\stake_file\dtos.py

Tamanho: 151 bytes

```
# src/dev_platform/application/user/dtos.py
from dataclasses import dataclass

@dataclass
class UserCreatedDTO:
    name: str
    email: str
```


4. entities.py

Caminho: scripts\stake_file\entities.py

Tamanho: 452 bytes

```
# src/dev_platform/domain/user/entities.py
from dataclasses import dataclass
from typing import Optional
from domain.user.value_objects import Email, UserName

@dataclass
class User:
    id: Optional[int]
    name: UserName
    email: Email

    @classmethod
    def create(cls, name: str, email: str) -> 'User':
        return cls(
            id=None,
            name=UserName(name),
            email=Email(email)
        )
```

5. exceptions.py

Caminho: scripts\stake_file\exceptions.py

Tamanho: 9820 bytes

```
# src/dev_platform/domain/user/exceptions.py
from datetime import datetime
from typing import Optional, Dict, Any

# Application layer exceptions
class ApplicationException(Exception):
    """Base exception for application layer errors."""

    def __init__(self, message: str, original_exception: Exception = None):
        self.message = message
        self.original_exception = original_exception
        self.timestamp = datetime.now()
        super().__init__(self.message)

class UseCaseException(ApplicationException):
    """Raised when a use case execution fails."""

    def __init__(self, use_case_name: str, reason: str, original_exception:
Exception = None):
        self.use_case_name = use_case_name
        self.reason = reason
        super().__init__(
            message=f"Use case '{use_case_name}' failed: {reason}",
            original_exception=original_exception
        )

# Infrastructure layer exceptions
class InfrastructureException(Exception):
    """Base exception for infrastructure layer errors."""

    def __init__(self, message: str, component: str, original_exception:
Exception = None):
        self.message = message
        self.component = component
        self.original_exception = original_exception
        self.timestamp = datetime.now()
        super().__init__(self.message)

    def to_dict(self) -> Dict[str, Any]:
```

```

    """Convert exception to dictionary for logging/serialization."""
    return {
        "message": self.message,
        "component": self.component,
        "timestamp": self.timestamp.isoformat(),
        "original_error": str(self.original_exception) if
        self.original_exception else None
    }

class DatabaseException(InfrastructureException):
    """Raised when database operations fail."""

    def __init__(self, operation: str, reason: str, original_exception:
    Exception = None):
        self.operation = operation
        self.reason = reason
        super().__init__(
            message=f"Database operation '{operation}' failed: {reason}",
            component="database",
            original_exception=original_exception
        )

    def to_dict(self) -> Dict[str, Any]:
        """Extended dictionary representation for database errors."""
        base_dict = super().to_dict()
        base_dict.update({
            "operation": self.operation,
            "reason": self.reason
        })
        return base_dict

class ConfigurationException(InfrastructureException):
    """Raised when configuration is invalid or missing."""

    def __init__(self, config_key: str, reason: str):
        self.config_key = config_key
        self.reason = reason
        super().__init__(
            message=f"Configuration error for '{config_key}': {reason}",
            component="configuration"
        )

```

```

class CacheException(InfrastructureException):
    """Raised when cache operations fail."""

    def __init__(self, operation: str, key: str, reason: str,
original_exception: Exception = None):
        self.operation = operation
        self.key = key
        self.reason = reason
        super().__init__(
            message=f"Cache {operation} failed for key '{key}': {reason}",
            component="cache",
            original_exception=original_exception
        )

# Repository-specific exceptions
class RepositoryException(InfrastructureException):
    """Base exception for repository layer errors."""

    def __init__(self, repository_name: str, operation: str, reason: str,
original_exception: Exception = None):
        self.repository_name = repository_name
        self.operation = operation
        self.reason = reason
        super().__init__(
            message=f"Repository '{repository_name}' {operation} failed: {reason}",
            component="repository",
            original_exception=original_exception
        )

class DataIntegrityException(RepositoryException):
    """Raised when data integrity constraints are violated."""

    def __init__(self, constraint_name: str, details: str,
original_exception: Exception = None):
        self.constraint_name = constraint_name
        self.details = details
        super().__init__(
            repository_name="database",
            operation="constraint_validation",
            reason=f"Constraint '{constraint_name}' violated: {details}",
            original_exception=original_exception
        )

```

```
)
```

```
class DataCorruptionException(RepositoryException):
```

```
    """Raised when data corruption is detected."""
```

```
    def __init__(self, entity_type: str, entity_id: str,
                  corruption_details: str):
```

```
        self.entity_type = entity_type
```

```
        self.entity_id = entity_id
```

```
        self.corruption_details = corruption_details
```

```
        super().__init__(
```

```
            repository_name="database",
```

```
            operation="data_validation",
```

```
            reason=f"{entity_type} {entity_id} has corrupted data: "
                    f"{corruption_details}"
```

```
)
```

```
# Exceções Específicas do Domínio
```

```
class DomainException(Exception):
```

```
    """Base exception for all domain-related errors."""
```

```
    def __init__(self, message: str, error_code: str = None, details:
                  Dict[str, Any] = None):
```

```
        self.message = message
```

```
        self.error_code = error_code or self.__class__.__name__
```

```
        self.details = details or {}
```

```
        self.timestamp = datetime.now()
```

```
        super().__init__(self.message)
```

```
    def to_dict(self) -> Dict[str, Any]:
```

```
        return {
```

```
            "error_code": self.error_code,
```

```
            "message": self.message,
```

```
            "details": self.details,
```

```
            "timestamp": self.timestamp.isoformat()
```

```
        }
```

```
class UserAlreadyExistsException(DomainException):
```

```
    """Raised when trying to create a user with an email that already
    exists."""
```

```
    def __init__(self, email: str):
```

```
        self.email = email
```

```

super().__init__(
    message=f"User with email '{email}' already exists",
    error_code="USER_ALREADY_EXISTS",
    details={"email": email}
)

class UserNotFoundException(DomainException):
    """Raised when a user cannot be found."""

    def __init__(self, identifier: str, identifier_type: str = "id"):
        self.identifier = identifier
        self.identifier_type = identifier_type
        super().__init__(
            message=f"User not found with {identifier_type}: {identifier}",
            error_code="USER_NOT_FOUND",
            details={"identifier": identifier, "identifier_type": identifier_type}
        )

class InvalidUserDataException(DomainException):
    """Raised when user data fails validation."""

    def __init__(self, field: str, value: Any, reason: str):
        self.field = field
        self.value = value
        self.reason = reason
        super().__init__(
            message=f"Invalid {field}: {reason}",
            error_code="INVALID_USER_DATA",
            details={"field": field, "value": str(value), "reason": reason}
        )

class UserValidationException(DomainException):
    """Raised when user business rules validation fails."""

    def __init__(self, validation_errors: Dict[str, str]):
        self.validation_errors = validation_errors
        errors_summary = ", ".join([f"{field}: {error}" for field, error in
            validation_errors.items()])
        super().__init__(
            message=f"User validation failed: {errors_summary}",
            error_code="USER_VALIDATION_FAILED",

```

```

details={"validation_errors": validation_errors}
)

class EmailDomainNotAllowedException(DomainException):
    """Raised when email domain is not in allowed list."""

    def __init__(self, email: str, domain: str, allowed_domains: list):
        self.email = email
        self.domain = domain
        self.allowed_domains = allowed_domains
        super().__init__(
            message=f"Email domain '{domain}' is not allowed. Allowed domains: {'',
                '.join(allowed_domains)}",
            error_code="EMAIL_DOMAIN_NOT_ALLOWED",
            details={
                "email": email,
                "domain": domain,
                "allowed_domains": allowed_domains
            }
        )

class UserOperationException(DomainException):
    """Raised when a user operation fails."""

    def __init__(self, operation: str, user_id: int, reason: str):
        self.operation = operation
        self.user_id = user_id
        self.reason = reason
        super().__init__(
            message=f"Failed to {operation} user {user_id}: {reason}",
            error_code="USER_OPERATION_FAILED",
            details={"operation": operation, "user_id": user_id, "reason": reason}
        )

# Compatibility aliases (deprecated, use specific exceptions above)
class DomainError(DomainException):
    """Exception for domain-related errors. DEPRECATED: Use DomainException
    instead."""

    def __init__(self, message: str):
        import warnings
        warnings.warn(

```

```
"DomainError is deprecated. Use DomainException instead.",
DeprecationWarning,
stacklevel=2
)
super().__init__(message)

class ValidationException(DomainException):
    """Exception for validation-related errors. DEPRECATED: Use
    UserValidationException instead."""

    def __init__(self, message: str):
        import warnings
        warnings.warn(
            "ValidationException is deprecated. Use UserValidationException
            instead.",
            DeprecationWarning,
            stacklevel=2
        )
        super().__init__(message)
```


6. main.py

Caminho: scripts\stake_file\main.py

Tamanho: 118 bytes

```
# src/dev_platform/main.py
from interface.cli.user_commands import cli

if __name__ == "__main__":
    cli()
```

7. models.py

Caminho: scripts\stake_file\models.py

Tamanho: 403 bytes

```
# src/dev_platform/infrastructure/database/models.py
from sqlalchemy import Column, Integer, String
from sqlalchemy.orm import declarative_base

Base = declarative_base()

class UserModel(Base):
    __tablename__ = "users"

    id = Column(Integer, primary_key=True, index=True)
    name = Column(String(100), nullable=False)
    email = Column(String(100), nullable=False, unique=True)
```

8. ports.py

Caminho: scripts\stake_file\ports.py

Tamanho: 1422 bytes

```
# src/dev_platform/application/user/ports.py
from abc import ABC, abstractmethod
from typing import List, Optional
from domain.user.entities import User

class UserRepository(ABC):
    @abstractmethod
    async def save(self, user: User) -> User:
        pass

    @abstractmethod
    async def find_by_email(self, email: str) -> Optional[User]:
        pass

    @abstractmethod
    async def find_all(self) -> List[User]:
        pass

    @abstractmethod
    async def find_by_id(self, user_id: int) -> Optional[User]:
        pass

    @abstractmethod
    async def delete(self, user_id: int) -> bool:
        pass

    @abstractmethod
    async def find_by_name_contains(self, name_part: str) -> List[User]:
        pass

    @abstractmethod
    async def count(self) -> int:
        pass

class Logger(ABC):
    @abstractmethod
    def info(self, message: str, **kwargs):
        pass

    @abstractmethod
```

```
def error(self, message: str, **kwargs):
    pass

    @abstractmethod
    def warning(self, message: str, **kwargs):
        pass

    class UnitOfWork(ABC):
        users: UserRepository

        @abstractmethod
        async def __aenter__(self):
            pass

        @abstractmethod
        async def __aexit__(self, exc_type, exc_val, exc_tb):
            pass

        @abstractmethod
        async def commit(self):
            pass
```

9. repositories.py

Caminho: scripts\stake_file\repositories.py

Tamanho: 10731 bytes

```
# src/dev_platform/infrastructure/database/repositories.py
from typing import List, Optional
from sqlalchemy.ext.asyncio import AsyncSession
from sqlalchemy.future import select
from sqlalchemy import delete, func
from sqlalchemy.exc import SQLAlchemyError, IntegrityError
from application.user.ports import UserRepository
from domain.user.entities import User
from domain.user.value_objects import Username, Email
from domain.user.exceptions import (
    DatabaseException,
    UserAlreadyExistsException,
    UserNotFoundException
)
from infrastructure.database.models import UserModel

class SQLUserRepository(UserRepository):
    def __init__(self, session: AsyncSession):
        self._session = session

    def _handle_database_error(self, operation: str, error: Exception,
                              **context):
        """Centralized error handling for database operations."""
        if isinstance(error, IntegrityError):
            # Check if it's a unique constraint violation
            if "email" in str(error.orig).lower() and "unique" in
                str(error.orig).lower():
                email = context.get('email', 'unknown')
                raise UserAlreadyExistsException(email)

            # Log context information for debugging
            context_str = ", ".join([f"{k}={v}" for k, v in context.items()])
            error_msg = f"{operation} failed"
            if context_str:
                error_msg += f" ({context_str})"

            raise DatabaseException(
```

```

operation=operation,
reason=str(error),
original_exception=error
)

def _convert_to_domain_user(self, db_user: UserModel) -> User:
    """Convert database model to domain entity."""
    try:
        return User(
            id=db_user.id,
            name=UserName(db_user.name),
            email=Email(db_user.email)
        )
    except ValueError as e:
        # This should not happen if database constraints are properly set
        raise DatabaseException(
            operation="data_conversion",
            reason=f"Invalid data in database: {str(e)}",
            original_exception=e
        )

    async def save(self, user: User) -> User:
        """Save a user to the database."""
        try:
            if user.id is None:
                # Create new user
                db_user = UserModel(
                    name=user.name.value,
                    email=user.email.value
                )
                self._session.add(db_user)
                await self._session.flush()

                # Return user with the generated ID
                return User(
                    id=db_user.id,
                    name=user.name,
                    email=user.email
                )
            else:

```

```

# Update existing user
result = await self._session.execute(
    select(UserModel).where(UserModel.id == user.id)
)
db_user = result.scalars().first()

if not db_user:
    raise UserNotFoundException(str(user.id))

db_user.name = user.name.value
db_user.email = user.email.value
await self._session.flush()

return User(
    id=db_user.id,
    name=user.name,
    email=user.email
)

except UserNotFoundException:
    # Re-raise domain exceptions as-is
    raise
except UserAlreadyExistsException:
    # Re-raise domain exceptions as-is
    raise
except SQLAlchemyError as e:
    self._handle_database_error(
        operation="save_user",
        error=e,
        user_id=user.id,
        email=user.email.value
    )
except Exception as e:
    self._handle_database_error(
        operation="save_user",
        error=e,
        user_id=user.id,
        email=user.email.value
    )

async def find_by_email(self, email: str) -> Optional[User]:

```

```

    """Find a user by email address."""
    try:
        result = await self._session.execute(
            select(UserModel).where(UserModel.email == email)
        )
        db_user = result.scalars().first()

        if db_user:
            return self._convert_to_domain_user(db_user)
        return None

    except SQLAlchemyError as e:
        self._handle_database_error(
            operation="find_by_email",
            error=e,
            email=email
        )
    except Exception as e:
        self._handle_database_error(
            operation="find_by_email",
            error=e,
            email=email
        )

    async def find_all(self) -> List[User]:
        """Find all users in the database."""
        try:
            result = await self._session.execute(select(UserModel))
            db_users = result.scalars().all()

            return [
                self._convert_to_domain_user(db_user)
                for db_user in db_users
            ]

        except SQLAlchemyError as e:
            self._handle_database_error(
                operation="find_all_users",
                error=e
            )
        except Exception as e:

```



```

self._handle_database_error(
    operation="find_all_users",
    error=e
)

async def find_by_id(self, user_id: int) -> Optional[User]:
    """Find a user by ID."""
    try:
        result = await self._session.execute(
            select(UserModel).where(UserModel.id == user_id)
        )
        db_user = result.scalars().first()

        if db_user:
            return self._convert_to_domain_user(db_user)
        return None

    except SQLAlchemyError as e:
        self._handle_database_error(
            operation="find_by_id",
            error=e,
            user_id=user_id
        )

    except Exception as e:
        self._handle_database_error(
            operation="find_by_id",
            error=e,
            user_id=user_id
        )

async def delete(self, user_id: int) -> bool:
    """Delete a user by ID."""
    try:
        # First check if user exists
        existing_user = await self.find_by_id(user_id)
        if not existing_user:
            raise UserNotFoundException(str(user_id))

        # Perform deletion
        result = await self._session.execute(
            delete(UserModel).where(UserModel.id == user_id)

```

```

)

success = result.rowcount > 0
if success:
    await self._session.flush()

return success

except UserNotFoundException:
    # Re-raise domain exceptions as-is
    raise
except SQLAlchemyError as e:
    self._handle_database_error(
        operation="delete_user",
        error=e,
        user_id=user_id
    )
except Exception as e:
    self._handle_database_error(
        operation="delete_user",
        error=e,
        user_id=user_id
    )

async def find_by_name_contains(self, name_part: str) -> List[User]:
    """Find users whose name contains the given string."""
    try:
        result = await self._session.execute(
            select(UserModel).where(UserModel.name.contains(name_part))
        )
        db_users = result.scalars().all()

        return [
            self._convert_to_domain_user(db_user)
            for db_user in db_users
        ]

    except SQLAlchemyError as e:
        self._handle_database_error(
            operation="find_by_name_contains",
            error=e,
            name_part=name_part

```

```

    )
    except Exception as e:
        self._handle_database_error(
            operation="find_by_name_contains",
            error=e,
            name_part=name_part
        )

    async def count(self) -> int:
        """Count total number of users."""
        try:
            result = await self._session.execute(
                select(func.count(UserModel.id))
            )
            count = result.scalar()
            return count if count is not None else 0

        except SQLAlchemyError as e:
            self._handle_database_error(
                operation="count_users",
                error=e
            )

        except Exception as e:
            self._handle_database_error(
                operation="count_users",
                error=e
            )

    class RepositoryExceptionHandler:
        """Utility class for handling repository exceptions consistently."""

        @staticmethod
        def handle_sqlalchemy_error(operation: str, error: SQLAlchemyError,
                                    **context):
            """Handle SQLAlchemy specific errors."""
            if isinstance(error, IntegrityError):
                if "email" in str(error.orig).lower() and "unique" in
                    str(error.orig).lower():
                    email = context.get('email', 'unknown')
                    raise UserAlreadyExistsException(email)

            context_str = ", ".join([f"{k}={v}" for k, v in context.items()])

```

```

error_msg = f"{operation} failed"
if context_str:
    error_msg += f" ({context_str})"

raise DatabaseException(
    operation=operation,
    reason=str(error),
    original_exception=error
)

@staticmethod
def handle_generic_error(operation: str, error: Exception, **context):
    """Handle generic errors."""
    context_str = ", ".join([f"{k}={v}" for k, v in context.items()])
    error_msg = f"{operation} failed"
    if context_str:
        error_msg += f" ({context_str})"

    raise DatabaseException(
        operation=operation,
        reason=str(error),
        original_exception=error
    )

```

10. services.py

Caminho: scripts\stake_file\services.py

Tamanho: 14693 bytes

```
# src/dev_platform/domain/user/services.py
from abc import ABC, abstractmethod
from typing import List, Dict, Optional, Set
import re
from datetime import datetime, timedelta
from domain.user.entities import User
from domain.user.exceptions import (
    UserAlreadyExistsException,
    UserNotFoundException,
    EmailDomainNotAllowedException,
    UserValidationException,
    InvalidUserDataException
)

class UserUniquenessService:
    """Service focused on uniqueness validation."""

    def __init__(self, user_repository):
        self._repository = user_repository

    async def ensure_email_is_unique(self, email: str, exclude_user_id: int
    = None) -> None:
        existing_user = await self._repository.find_by_email(email)
        if existing_user and (exclude_user_id is None or existing_user.id !=
        exclude_user_id):
            # from domain.user.exceptions import UserAlreadyExistsException
            raise UserAlreadyExistsException(email)

    class ValidationRule(ABC):
        """Base class for validation rules."""

        @abstractmethod
        async def validate(self, user: User) -> Optional[str]:
            """
            Validate user according to this rule.
            Returns None if valid, error message if invalid.
            """
            pass
```

```

@property
@abstractmethod
def rule_name(self) -> str:
    pass

class EmailDomainValidationRule(ValidationRule):
    """Validates that email domain is in allowed list."""

    def __init__(self, allowed_domains: List[str]):
        self.allowed_domains = set(domain.lower() for domain in
allowed_domains)

    async def validate(self, user: User) -> Optional[str]:
        email_domain = user.email.value.split('@')[1].lower()
        if email_domain not in self.allowed_domains:
            return f"Email domain '{email_domain}' is not allowed. Allowed domains:
{' ', ' '.join(self.allowed_domains)}"
        return None

@property
def rule_name(self) -> str:
    return "email_domain_validation"

class NameProfanityValidationRule(ValidationRule):
    """Validates that name doesn't contain profanity."""

    def __init__(self, forbidden_words: List[str]):
        self.forbidden_words = [word.lower() for word in forbidden_words]

    async def validate(self, user: User) -> Optional[str]:
        name_lower = user.name.value.lower()
        for word in self.forbidden_words:
            if word in name_lower:
                return f"Name contains forbidden word: {word}"
        return None

@property
def rule_name(self) -> str:
    return "name_profanity_validation"

class EmailFormatAdvancedValidationRule(ValidationRule):
    """Advanced email format validation beyond basic regex."""

    def __init__(self):

```

```

# More restrictive email validation
self.pattern = re.compile(
    r'^[a-zA-Z0-9]([a-zA-Z0-9._-]*[a-zA-Z0-9])?@[a-zA-Z0-9]([a-zA-Z0-9.-]*[a-zA-Z0-9])?\.[a-zA-Z]{2,}$'
)

async def validate(self, user: User) -> Optional[str]:
    email = user.email.value

    # Check basic format
    if not self.pattern.match(email):
        return "Email format is invalid"

    # Check for consecutive dots
    if '..' in email:
        return "Email cannot contain consecutive dots"

    # Check for valid length
    if len(email) > 254:
        return "Email is too long (max 254 characters)"

    local_part, domain_part = email.split('@')

    # Check local part length
    if len(local_part) > 64:
        return "Email local part is too long (max 64 characters)"

    # Check domain part
    if len(domain_part) > 253:
        return "Email domain part is too long (max 253 characters)"

    return None

@property
def rule_name(self) -> str:
    return "email_format_advanced_validation"

class NameContentValidationRule(ValidationRule):
    """Validates name content and format."""

    def __init__(self, allowed_chars: Optional[Set[str]] = None):
        if allowed_chars is None:
            allowed_chars = set(
                "abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ"
                "-àáâãäåæçèéêëìíîïðóôõöùúûüÿÀÁÂÃÄÅÆÇÈÉÊËÌÍÎÏÐÓÔÕÖÙÚÛÜÝ"
            ) # Carregue de config externa
        self.allowed_chars = allowed_chars

```

```

async def validate(self, user: User) -> Optional[str]:
    name = user.name.value

    # Check for only whitespace
    if name.strip() != name:
        return "Name cannot start or end with whitespace"

    # Check for excessive whitespace
    if ' ' in name:
        return "Name cannot contain consecutive spaces"

    # Check for numbers
    if any(char.isdigit() for char in name):
        return "Name cannot contain numbers"

    # Check for special characters (allow only letters, spaces, hyphens,
    apostrophes)
    if not all(char in self.allowed_chars for char in name):
        invalid_chars = [char for char in name if char not in
            self.allowed_chars]
        return f"Name contains invalid characters: {'',
            ' '.join(set(invalid_chars))}"

    # Check minimum word count
    words = name.split()
    if len(words) < 2:
        return "Name must contain at least first and last name"

    # Check each word length
    for word in words:
        if len(word) < 2:
            return "Each name part must be at least 2 characters long"

    return None

@property
def rule_name(self) -> str:
    return "name_content_validation"

class BusinessHoursValidationRule(ValidationRule):
    """Example rule that validates based on business hours."""

    def __init__(self, business_hours_only: bool = False):
        self.business_hours_only = business_hours_only

    async def validate(self, user: User) -> Optional[str]:

```



```

if not self.business_hours_only:
    return None

now = datetime.now()
# Check if it's business hours (9 AM to 5 PM, Monday to Friday)
if now.weekday() >= 5: # Saturday or Sunday
    return "User registration only allowed during business days"

if now.hour < 9 or now.hour >= 17:
    return "User registration only allowed during business hours (9 AM - 5 PM)"

return None

@property
def rule_name(self) -> str:
    return "business_hours_validation"

class UserDomainService:
    """Service for complex user domain validations and business rules."""

    def __init__(self, user_repository, validation_rules:
        List[ValidationRule] = None):
        self._repository = user_repository
        self._validation_rules = validation_rules or []
        self._setup_default_rules()

    def _setup_default_rules(self):
        """Setup default validation rules if none provided."""
        if not self._validation_rules:
            self._validation_rules = [
                EmailFormatAdvancedValidationRule(),
                NameContentValidationRule(),
                # Add more default rules as needed
            ]

    def add_validation_rule(self, rule: ValidationRule):
        """Add a custom validation rule."""
        self._validation_rules.append(rule)

    def remove_validation_rule(self, rule_name: str):
        """Remove a validation rule by name."""
        self._validation_rules = [
            rule for rule in self._validation_rules
            if rule.rule_name != rule_name

```

```

]

async def validate_business_rules(self, user: User) -> None:
    """
    Validate all business rules for a user.
    Raises UserValidationException if any rule fails.
    """
    validation_errors = {}

    # Check uniqueness first
    try:
        await self._validate_unique_email(user.email.value)
    except UserAlreadyExistsException as e:
        validation_errors["email"] = e.message

    # Run all validation rules
    for rule in self._validation_rules:
        try:
            error_message = await rule.validate(user)
            if error_message:
                validation_errors[rule.rule_name] = error_message
        except Exception as e:
            validation_errors[rule.rule_name] = f"Validation rule failed: {str(e)}"

    # If there are validation errors, raise exception
    if validation_errors:
        raise UserValidationException(validation_errors)

    async def _validate_unique_email(self, email: str):
        """Validate that email is unique in the system."""
        existing_user = await self._repository.find_by_email(email)
        if existing_user:
            raise UserAlreadyExistsException(email)

    async def validate_user_update(self, user_id: int, updated_user: User)
    -> None:
        """
        Validate user update, checking uniqueness only if email changed.
        """
        validation_errors = {}

        # Get current user
        current_user = await self._repository.find_by_id(user_id)

```

```

if not current_user:
    raise UserNotFoundException(str(user_id))

# Check email uniqueness only if email changed
if current_user.email.value != updated_user.email.value:
    try:
        await self._validate_unique_email(updated_user.email.value)
    except UserAlreadyExistsException as e:
        validation_errors["email"] = e.message

# Run validation rules
for rule in self._validation_rules:
    try:
        error_message = await rule.validate(updated_user)
        if error_message:
            validation_errors[rule.rule_name] = error_message
    except Exception as e:
        validation_errors[rule.rule_name] = f"Validation rule failed: {str(e)}"

if validation_errors:
    raise UserValidationException(validation_errors)

def get_validation_summary(self) -> Dict[str, str]:
    """Get summary of all active validation rules."""
    return {
        rule.rule_name: rule.__class__.__doc__ or "No description available"
        for rule in self._validation_rules
    }

async def validate_user_creation_constraints(self, user: User) -> None:
    """
    Validate constraints specific to user creation.
    This can include rate limiting, domain restrictions, etc.
    """
    validation_errors = {}

    # Example: Check if we've reached user limit for the day
    # This is just an example - you'd implement based on your business rules
    try:
        current_count = await self._repository.count()
        if current_count >= 10000: # Example limit
            validation_errors["system_limit"] = "Maximum number of users reached"

```

```

except Exception as e:
    validation_errors["system_check"] = f"Unable to verify system
constraints: {str(e)}"

if validation_errors:
    raise UserValidationException(validation_errors)

async def validate_business_domain_rules(self, user: User,
domain_whitelist: List[str] = None) -> None:
    """
    Validate business-specific domain rules.
    """
    if domain_whitelist:
        email_domain = user.email.value.split('@')[1].lower()
        if email_domain not in [d.lower() for d in domain_whitelist]:
            raise EmailDomainNotAllowedException(
                user.email.value,
                email_domain,
                domain_whitelist
            )

class UserAnalyticsService:
    """Service for user analytics and reporting."""

    def __init__(self, user_repository):
        self._repository = user_repository

    async def get_user_statistics(self) -> Dict[str, int]:
        """Get basic user statistics."""
        try:
            total_users = await self._repository.count()

            # You could add more analytics here
            return {
                "total_users": total_users,
                # Add more metrics as needed
            }
        except Exception as e:
            raise RuntimeError(f"Failed to get user statistics: {str(e)}")

    async def find_users_by_domain(self, domain: str) -> List[User]:
        """Find all users with emails from a specific domain."""
        try:

```

```

all_users = await self._repository.find_all()
return [
    user for user in all_users
    if user.email.value.split('@')[1].lower() == domain.lower()
]
except Exception as e:
    raise RuntimeError(f"Failed to find users by domain: {str(e)}")

# Factory for creating domain services with common configurations
class DomainServiceFactory:
    """Factory for creating domain services with common configurations."""

    def __init__(self):
        pass # Permite instanciação

    def create_user_domain_service(
        self,
        user_repository,
        enable_profanity_filter: bool = False,
        allowed_domains: List[str] = None,
        business_hours_only: bool = False
    ) -> UserDomainService:
        """Create a UserDomainService with common rule configurations."""

        rules = [
            EmailFormatAdvancedValidationRule(),
            NameContentValidationRule(),
        ]

        if enable_profanity_filter:
            # Add common profanity words - in production, load from config/database
            forbidden_words = ["badword1", "badword2"] # Replace with actual list
            rules.append(NameProfanityValidationRule(forbidden_words))

        if allowed_domains:
            rules.append(EmailDomainValidationRule(allowed_domains))

        if business_hours_only:
            rules.append(BusinessHoursValidationRule(business_hours_only))

        return UserDomainService(user_repository, rules)

    def create_analytics_service(self, user_repository) ->
    UserAnalyticsService:

```

```
"""Create a UserAnalyticsService."""  
return UserAnalyticsService(user_repository)
```

11. session.py

Caminho: scripts\stake_file\session.py

Tamanho: 1955 bytes

```
# src/dev_platform/infrastructure/database/session.py
from contextlib import asynccontextmanager
from sqlalchemy import create_engine
from sqlalchemy.orm import sessionmaker
from sqlalchemy.ext.asyncio import create_async_engine, AsyncSession
from infrastructure.config import CONFIG

# Configurações do pool de conexões
pool_size = CONFIG.get("database.pool_size", 5)
max_overflow = CONFIG.get("database.max_overflow", 10)

# Engine síncrono
database_url = CONFIG.get_database_url()
Engine = create_engine(
    database_url,
    pool_size=pool_size,
    max_overflow=max_overflow,
    pool_pre_ping=True # Verifica se a conexão está ativa antes de usar
)

SessionLocal = sessionmaker(autocommit=False, autoflush=False,
    bind=Engine)

# Engine assíncrono
# A URL já deve vir formatada para o driver assíncrono (e.g.,
mysql+aiomysql://)
# ou mysql+asyncpg para postgres
if database_url.startswith(('mysql+aiomysql://',
    'postgresql+asyncpg://', 'sqlite+aiosqlite://')): # Adicione outros
    drivers assíncronos aqui se necessário

# Usamos a própria database_url, pois ela já está formatada para o async
driver

AsyncEngine = create_async_engine(
    database_url, # Usamos a URL diretamente, pois esperamos que ela já
    contenha o driver assíncrono
    pool_size=pool_size,
    max_overflow=max_overflow
)
```

```
AsyncSessionLocal = sessionmaker(class_=AsyncSession,
expire_on_commit=False, bind=AsyncEngine)

@asynccontextmanager
async def get_async_session():
    """Context manager para sessões assíncronas de banco de dados."""
    if not 'AsyncSessionLocal' in globals():
        raise RuntimeError("Async database session not supported with current
database URL")

    async with AsyncSessionLocal() as session:
        try:
            yield session
        except Exception:
            await session.rollback()
            raise
```


12. structured_logger.py

Caminho: scripts\stake_file\structured_logger.py

Tamanho: 1796 bytes

```
# src/dev_platform/infrastructure/logging/structured_logger.py
import logging
import json
import os
import sys
from datetime import datetime
from application.user.ports import Logger as LoggerPort

class StructuredLogger(LoggerPort):
    def __init__(self, name: str = "DEV Platform", level=logging.INFO):
        self.logger = logging.getLogger(name)
        self.logger.setLevel(level)

        if not self.logger.handlers:
            # Console handler
            console_handler = logging.StreamHandler(sys.stdout)
            console_handler.setFormatter(
                logging.Formatter('%(asctime)s - %(name)s - %(levelname)s - %(message)s')
            )
            self.logger.addHandler(console_handler)

            # File handler for errors
            if not os.path.exists('logs'):
                os.makedirs('logs')
            file_handler =
                logging.FileHandler(f"logs/{datetime.now().strftime('%Y-%m-%d')}.log")
            file_handler.setLevel(logging.ERROR)
            file_handler.setFormatter(
                logging.Formatter('%(asctime)s - %(name)s - %(levelname)s - %(message)s')
            )
            self.logger.addHandler(file_handler)

        def info(self, message: str, **kwargs):
            self._log(logging.INFO, message, **kwargs)

        def error(self, message: str, **kwargs):
            self._log(logging.ERROR, message, **kwargs)
```

```
def warning(self, message: str, **kwargs):
    self._log(logging.WARNING, message, **kwargs)

def _log(self, level: int, message: str, **kwargs):
    if kwargs:
        log_data = {"message": message, **kwargs}
        self.logger.log(level, json.dumps(log_data))
    else:
        self.logger.log(level, message)
```

13. unit_of_work.py

Caminho: scripts\stake_file\unit_of_work.py

Tamanho: 1235 bytes

```
# src/dev_platform/infrastructure/database/unit_of_work.py
from typing import Optional
from sqlalchemy.ext.asyncio import AsyncSession
from application.user.ports import UnitOfWork as AbstractUnitOfWork
from infrastructure.database.session import AsyncSessionLocal
from infrastructure.database.repositories import SQLUserRepository

class SQLUnitOfWork(AbstractUnitOfWork):
    def __init__(self):
        self._session: Optional[AsyncSession] = None

    async def __aenter__(self):
        self._session = AsyncSessionLocal()
        self.users = SQLUserRepository(self._session)
        return self

    # async def __aexit__(self, exc_type, exc_val, exc_tb):
    # if self._session:
    # if exc_type is not None:
    # await self._session.rollback()
    # await self._session.close()

    async def __aexit__(self, exc_type, exc_val, exc_tb):
        try:
            if exc_type is None:
                await self._session.commit()
            else:
                await self._session.rollback()
        finally:
            await self._session.close()

    async def commit(self):
        if self._session:
            await self._session.commit()
```

14. use_cases.py

Caminho: scripts\stake_file\use_cases.py

Tamanho: 10072 bytes

```
# src/dev_platform/application/user/use_cases.py
from typing import List
from application.user.ports import Logger, UnitOfWork
from application.user.dtos import UserCreatedDTO
from domain.user.entities import User
from domain.user.services import DomainServiceFactory
from domain.user.exceptions import (
    UserValidationException,
    UserAlreadyExistsException,
    UserNotFoundException,
    DomainException
)

class BaseUseCase:
    """Base class for all use cases with common functionality."""

    def __init__(self, uow: UnitOfWork, logger: Logger):
        self._uow = uow
        self._logger = logger

    def _log_error(self, message: str, **kwargs):
        """Centralized error logging."""
        self._logger.error(message, **kwargs)

    def _log_info(self, message: str, **kwargs):
        """Centralized info logging."""
        self._logger.info(message, **kwargs)

class CreateUserUseCase(BaseUseCase):
    # CORRIGIDO: Adicionado domain_service_factory como parâmetro
    def __init__(self, uow: UnitOfWork, logger: Logger,
                 domain_service_factory: DomainServiceFactory):
        super().__init__(uow, logger)
        self._domain_service_factory = domain_service_factory

    async def execute(self, dto: UserCreatedDTO) -> User:
        async with self._uow:
```

```

self._log_info("Starting user creation", name=dto.name,
email=dto.email)

try:
    # Create user entity from DTO
    user = User.create(name=dto.name, email=dto.email)

    # Create domain service with repository access
    domain_service =
self._domain_service_factory.create_user_domain_service(
self._uow.users
)

    # CORRIGIDO: Método correto é validate_business_rules
    await domain_service.validate_business_rules(user)

    self._log_info("User validation passed", email=dto.email)

    # Save user
    saved_user = await self._uow.users.save(user)
    await self._uow.commit()

    self._log_info("User created successfully",
user_id=saved_user.id,
name=saved_user.name.value,
email=saved_user.email.value)

    return saved_user

except UserValidationException as e:
    self._log_error("User validation failed",
email=dto.email,
validation_errors=e.validation_errors)
    raise

except UserAlreadyExistsException as e:
    self._logger.warning("Attempted to create duplicate user",
email=dto.email)
    raise

except DomainException as e:
    self._log_error("Domain error during user creation",
error_code=e.error_code,
message=e.message,
details=e.details)
    raise

```

```

except Exception as e:
    self._log_error("Unexpected error during user creation",
        email=dto.email,
        error=str(e))
    raise RuntimeError(f"Failed to create user: {str(e)}")

class ListUsersUseCase(BaseUseCase):
    async def execute(self) -> List[User]:
        async with self._uow:
            try:
                self._log_info("Starting user listing")
                users = await self._uow.users.find_all()
                self._log_info("Users retrieved successfully", count=len(users))
                return users

            except Exception as e:
                self._log_error("Error listing users", error=str(e))
                raise RuntimeError(f"Failed to list users: {str(e)}")

class UpdateUserUseCase(BaseUseCase):
    # CORRIGIDO: Adicionado domain_service_factory como parâmetro
    def __init__(self, uow: UnitOfWork, logger: Logger,
        domain_service_factory: DomainServiceFactory):
        super().__init__(uow, logger)
        self._domain_service_factory = domain_service_factory

    async def execute(self, user_id: int, dto: UserCreateDTO) -> User:
        async with self._uow:
            self._log_info("Starting user update", user_id=user_id, name=dto.name,
                email=dto.email)

            try:
                # Check if user exists
                existing_user = await self._uow.users.find_by_id(user_id)
                if not existing_user:
                    raise UserNotFoundException(str(user_id))

                # Create updated user entity
                updated_user = User.create(name=dto.name, email=dto.email)
                updated_user.id = user_id # Preserve the ID

                # Create domain service

```

```

domain_service =
self._domain_service_factory.create_user_domain_service(
self._uow.users
)

# Validate update
await domain_service.validate_user_update(user_id, updated_user)

self._log_info("User update validation passed", user_id=user_id)

# Save updated user
saved_user = await self._uow.users.save(updated_user)
await self._uow.commit()

self._log_info("User updated successfully",
user_id=saved_user.id,
name=saved_user.name.value,
email=saved_user.email.value)

return saved_user

except (UserValidationException, UserNotFoundException) as e:
if isinstance(e, UserValidationException):
self._log_error("User update validation failed",
user_id=user_id,
validation_errors=e.validation_errors)
else:
self._log_error("User not found for update", user_id=user_id)
raise

except DomainException as e:
self._log_error("Domain error during user update",
user_id=user_id,
error_code=e.error_code,
message=e.message,
details=e.details)
raise

except Exception as e:
self._log_error("Unexpected error during user update",
user_id=user_id,
error=str(e))
raise RuntimeError(f"Failed to update user: {str(e)}")

```

```

class GetUserUseCase(BaseUseCase):
    async def execute(self, user_id: int) -> User:
        async with self._uow:
            try:
                self._log_info("Getting user", user_id=user_id)
                user = await self._uow.users.find_by_id(user_id)

                if not user:
                    raise UserNotFoundException(str(user_id))

                self._log_info("User retrieved successfully", user_id=user_id)
                return user

            except UserNotFoundException:
                self._log_error("User not found", user_id=user_id)
                raise

            except Exception as e:
                self._log_error("Error getting user", user_id=user_id, error=str(e))
                raise RuntimeError(f"Failed to get user: {str(e)}")

class DeleteUserUseCase(BaseUseCase):
    async def execute(self, user_id: int) -> bool:
        async with self._uow:
            try:
                self._log_info("Starting user deletion", user_id=user_id)

                # Check if user exists
                existing_user = await self._uow.users.find_by_id(user_id)
                if not existing_user:
                    raise UserNotFoundException(str(user_id))

                # Perform deletion
                success = await self._uow.users.delete(user_id)

                if success:
                    await self._uow.commit()
                    self._log_info("User deleted successfully", user_id=user_id)
                else:
                    self._logger.warning("User deletion failed", user_id=user_id)

                return success

            except UserNotFoundException:

```



```
self._log_error("User not found for deletion", user_id=user_id)
raise

except Exception as e:
self._log_error("Error deleting user", user_id=user_id, error=str(e))
raise RuntimeError(f"Failed to delete user: {str(e)}")

# Factory para criar use cases com dependências configuradas
class UseCaseFactory:
def __init__(self, composition_root):
self._composition_root = composition_root

def create_user_use_case(self) -> CreateUserUseCase:
return self._composition_root.create_user_use_case()

def list_users_use_case(self) -> ListUsersUseCase:
return self._composition_root.list_users_use_case()

def update_user_use_case(self) -> UpdateUserUseCase:
return self._composition_root.update_user_use_case()

def get_user_use_case(self) -> GetUserUseCase:
return self._composition_root.get_user_use_case()

def delete_user_use_case(self) -> DeleteUserUseCase:
return self._composition_root.delete_user_use_case()
```

15. user_commands.py

Caminho: scripts\stake_file\user_commands.py

Tamanho: 2053 bytes

```
# src/dev_platform/interface/cli/user_commands.py
import asyncio
import click

from application.user.dtos import UserCreatedDTO
from infrastructure.composition_root import CompositionRoot
from infrastructure.config import CONFIG

class UserCommands:
    def __init__(self):
        # CORRIGIDO: Passar configuração para o CompositionRoot
        self._composition_root = CompositionRoot(config=CONFIG.get_config())

    async def create_user(self, name: str, email: str) -> str:
        try:
            use_case = self._composition_root.create_user_use_case()
            dto = UserCreatedDTO(name=name, email=email)
            user = await use_case.execute(dto)

            return f"User created: {user.name.value} ({user.email.value}) with ID: {user.id}" # CORRIGIDO: .value
        except ValueError as e:
            return f"Validation Error: {e}"
        except Exception as e:
            return f"Error: {e}"

    async def list_users(self) -> list:
        try:
            use_case = self._composition_root.list_users_use_case()
            users = await use_case.execute()

            if not users:
                return ["No users found"]

            result = []
            for user in users:
                # CORRIGIDO: Acessar .value dos value objects
                result.append(f"ID: {user.id}, Name: {user.name.value}, Email: {user.email.value}")

            return result
        except Exception as e:
```

```

return [f"Error: {e}"]

@click.group()
def cli():
    pass

@cli.command()
@click.option('--name', prompt='User name')
@click.option('--email', prompt='User email')
def create_user(name: str, email: str):
    """Create a new user."""
    commands = UserCommands()
    result = asyncio.run(commands.create_user(name, email))
    click.echo(result)

@cli.command()
def list_users():
    """List all users."""
    commands = UserCommands()
    results = asyncio.run(commands.list_users())
    for line in results:
        click.echo(line)

```

16. value_objects.py

Caminho: scripts\stake_file\value_objects.py

Tamanho: 765 bytes

```
# src/dev_platform/domain/user/value_objects.py

from dataclasses import dataclass
import re

@dataclass(frozen=True)
class Email:
    value: str

    def __post_init__(self):
        if not self._is_valid():
            raise ValueError("Invalid email format")

    def _is_valid(self) -> bool:
        pattern = r'^[a-zA-Z0-9._%+-]+@[a-zA-Z0-9.-]+\.[a-zA-Z]{2,}$'
        return bool(re.match(pattern, self.value))

@dataclass(frozen=True)
class UserName:
    value: str

    def __post_init__(self):
        if not self.value or len(self.value) < 3:
            raise ValueError("Name must be at least 3 characters long")
        if len(self.value) > 100:
            raise ValueError("Name cannot exceed 100 characters")
```