

You are an expert coding assistant specialized in software refactoring, with many years of experience analyzing code transformations.

You will be given the diffs of a commit:

```
- **Diffs:**
diff --git backend/app/models.py backend/app/models.py
index 2389b4a..d1a42b7 100644
--- backend/app/models.py
+++ backend/app/models.py
@@ -5,8 +5,11 @@ from sqlmodel import Field, Relationship,
SQLModel

# Shared properties
-class UserBase(SQLModel):
+class EUserBase:
email: EmailStr = Field(unique=True, index=True,
max_length=255)
+
+
+class UserBase(SQLModel, EUserBase):
is_active: bool = True
is_superuser: bool = False
full_name: str | None = Field(default=None, max_length=255)
```

Your task is to identify which refactoring type(s) have been applied in transforming the original program into the new version. Use only the following list of predefined refactorings:

(Add Method Parameter) – Introduces a new parameter to an existing method.

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(Rename Method) – Changes the name of a method while preserving its behavior.

(Rename Class) – Changes the name of a class without altering its structure.

(Rename Package) – Changes the name of a package declaration.

(Rename Field) – Changes the name of a class or instance variable.

(Extract Class) – Moves a group of related fields and methods from an existing class into a newly created class.

(Extract Superclass) – Creates a new superclass to encapsulate

shared attributes and behavior from two or more existing classes.  
 (Inline Method) – Replaces a method call with the method's body.  
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(Replace Magic Number with Constant) – Replaces a literal number with a named constant.

(Encapsulate Field) – Change a field access from not private to private and create get and set methods.

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### **Extract Superclass**

A new class **EUserBase** was introduced to serve as a parent for **UserBase**, encapsulating shared properties (in this case, the **email** field) in a dedicated superclass.



**Pull Up Field**

The **email: EmailStr** field was removed from **UserBase** and relocated into the newly created superclass **EUserBase**, with **UserBase** now inheriting that attribute.

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```
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diff --git backend/app/models.py backend/app/models.py
index d1a42b7..121e268 100644
--- backend/app/models.py
+++ backend/app/models.py
@@ -6,13 +6,13 @@ from sqlmodel import Field, Relationship,
SQLModel

# Shared properties
class EUserBase:
+ full_name: str | None = Field(default=None, max_length=255)
email: EmailStr = Field(unique=True, index=True,
max_length=255)

class UserBase(SQLModel, EUserBase):
is_active: bool = True
is_superuser: bool = False
- full_name: str | None = Field(default=None, max_length=255)

# Properties to receive via API on creation
```

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### Pull Up Field

The `full_name` property was removed from the subclass `UserBase` and relocated into its existing superclass `EUserBase`, centralizing shared fields in the parent.

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```
- **Diffs:**
diff --git backend/app/models.py backend/app/models.py
index 121e268..2481e66 100644
--- backend/app/models.py
+++ backend/app/models.py
@@ -7,10 +7,10 @@ from sqlmodel import Field, Relationship,
SQLModel
# Shared properties
class EUserBase:
    full_name: str | None = Field(default=None, max_length=255)
    - email: EmailStr = Field(unique=True, index=True,
      max_length=255)

class UserBase(SQLModel, EUserBase):
    + email: EmailStr = Field(unique=True, index=True,
      max_length=255)
    is_active: bool = True
    is_superuser: bool = False
```

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#### **Push Down Field**

The `email` field was removed from the superclass `EUserBase` and reintroduced in its subclass `UserBase`, relocating that property downward in the hierarchy.

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```
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diff --git backend/app/models.py backend/app/models.py
index 2481e66..65ca473 100644
--- backend/app/models.py
+++ backend/app/models.py
@@ -9,9 +9,12 @@ class EUserBase:
    full_name: str | None = Field(default=None, max_length=255)

-class UserBase(SQLModel, EUserBase):
-    email: EmailStr = Field(unique=True, index=True,
+    max_length=255)
+class E2UserBase:
+    is_active: bool = True
+
+
+class UserBase(SQLModel, EUserBase, E2UserBase):
+    email: EmailStr = Field(unique=True, index=True,
+    max_length=255)
+    is_superuser: bool = False
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#### **Extract Class**



A new class `E2UserBase` was created to house the `is_active` property, isolating that concern into its own type separate from `UserBase`.



### Pull Up Field

The `is_active` field was removed from `UserBase` and relocated into the newly introduced superclass `E2UserBase`, with `UserBase` now inheriting that attribute.

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```
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diff --git backend/app/models.py backend/app/models.py
index 65ca473..4a299e0 100644
--- backend/app/models.py
+++ backend/app/models.py
@@ -49,7 +49,7 @@ class UpdatePassword(SQLModel):
class User(UserBase, table=True):
    id: uuid.UUID = Field(default_factory=uuid.uuid4,
        primary_key=True)
    hashed_password: str
- items: list["Item"] = Relationship(back_populates="owner",
    cascade_delete=True)
+ items: list["Item"] = Relationship(back_populates="owner",
    cascade_delete=True)

# Properties to return via API, id is always required
@@ -79,7 +79,7 @@ class ItemUpdate(ItemBase):

# Database model, database table inferred from class name
-class Item(ItemBase, table=True):
+class Item(ItemBase, table=True):
    id: uuid.UUID = Field(default_factory=uuid.uuid4,
        primary_key=True)
    owner_id: uuid.UUID = Field(
        foreign_key="user.id", nullable=False, ondelete="CASCADE")
```

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#### Rename Class

The entity class `Item` was renamed to `IItem`, and all references in the `items:` `list["Item"]` relationship annotation were updated to `list["IItem"]`.

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You will be given the diffs of a commit:

```
- **Diffs:**
diff --git backend/app/api/routes/login.py
backend/app/api/routes/login.py
index 980c66f..9860460 100644
--- backend/app/api/routes/login.py
+++ backend/app/api/routes/login.py
@@ -91,7 +91,7 @@ def reset_password(session: SessionDep,
body: NewPassword) -> Message:
)
elif not user.is_active:
raise HTTPException(status_code=400, detail="Inactive user")
- hashed_password =
get_password_hash(password=body.new_password)
+ hashed_password =
get_password_hash(password=body.new_password_is)
user.hashed_password = hashed_password
session.add(user)
session.commit()
diff --git backend/app/api/routes/users.py
backend/app/api/routes/users.py
index 6429818..481ce2b 100644
--- backend/app/api/routes/users.py
```

```

+++ backend/app/api/routes/users.py
@@ -106,11 +106,11 @@ def update_password_me(
"""
if not verify_password(body.current_password,
current_user.hashed_password):
raise HTTPException(status_code=400, detail="Incorrect
password")
- if body.current_password == body.new_password:
+ if body.current_password == body.new_password_is:
raise HTTPException(
status_code=400, detail="New password cannot be the same as
the current one"
)
- hashed_password = get_password_hash(body.new_password)
+ hashed_password = get_password_hash(body.new_password_is)
current_user.hashed_password = hashed_password
session.add(current_user)
session.commit()
diff --git backend/app/models.py backend/app/models.py
index 4a299e0..5ec1f06 100644
--- backend/app/models.py
+++ backend/app/models.py
@@ -116,4 +116,4 @@ class TokenPayload(SQLModel):

class NewPassword(SQLModel):
token: str
- new_password: str = Field(min_length=8, max_length=40)
+ new_password_is: str = Field(min_length=8, max_length=40)

```

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#### **Rename Field**

The `NewPassword` model's attribute `new_password` was renamed to `new_password_is`, and all references to `body.new_password` in both `login.py` and `users.py` were updated accordingly to `body.new_password_is`.

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```
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diff --git backend/app/core/config.py
backend/app/core/config.py
index d58e03c..fb011b1 100644
--- backend/app/core/config.py
+++ backend/app/core/config.py
@@ -95,24 +95,35 @@ class Settings(BaseSettings):
FIRST_SUPERUSER: EmailStr
FIRST_SUPERUSER_PASSWORD: str

- def _check_default_secret(self, var_name: str, value: str | None) -
> None:
- if value == "changethis":
+ @model_validator(mode="after")
+ def _enforce_non_default_secrets(self) -> Self:
+ if self.SECRET_KEY == "changethis":
message = (
- f'The value of {var_name} is "changethis", '
+ f'The value of {"SECRET_KEY"} is "changethis", '
"for security, please change it, at least for deployments."
)
if self.ENVIRONMENT == "local":
warnings.warn(message, stacklevel=1)
else:
raise ValueError(message)
-
- @model_validator(mode="after")
- def _enforce_non_default_secrets(self) -> Self:
- self._check_default_secret("SECRET_KEY", self.SECRET_KEY)
- self._check_default_secret("POSTGRES_PASSWORD",
self.POSTGRES_PASSWORD)
- self._check_default_secret(
- "FIRST_SUPERUSER_PASSWORD",
self.FIRST_SUPERUSER_PASSWORD
- )
+ if self.POSTGRES_PASSWORD == "changethis":
+ message1 = (
+ f'The value of {"POSTGRES_PASSWORD"} is "changethis", '
+ "for security, please change it, at least for deployments."
+ )
+ if self.ENVIRONMENT == "local":
+ warnings.warn(message1, stacklevel=1)
```

```

+ else:
+ raise ValueError(message1)
+ if self.FIRST_SUPERUSER_PASSWORD == "changethis":
+ message2 = (
+ f'The value of {"FIRST_SUPERUSER_PASSWORD"} is "changethis",
+
+ "for security, please change it, at least for deployments."
+ )
+ if self.ENVIRONMENT == "local":
+ warnings.warn(message2, stacklevel=1)
+ else:
+ raise ValueError(message2)

return self

```

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#### **Inline Method**

The private helper method `_check_default_secret` has been removed, and its logic inlining directly into the body of `_enforce_non_default_secrets`, replacing each call with the original `if ... changethis` check and message handling.

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- **\*\*Diffs:\*\***

```
diff --git backend/app/models.py backend/app/models.py
index 5ec1f06..080e548 100644
--- backend/app/models.py
+++ backend/app/models.py
```



```
@@ -15,11 +15,11 @@ class E2UserBase:
```

```
class UserBase(SQLModel, EUserBase, E2UserBase):
    email: EmailStr = Field(unique=True, index=True,
        max_length=255)
    - is_superuser: bool = False
```

```
# Properties to receive via API on creation
class UserCreate(UserBase):
    + is_superuser: bool = False
    password: str = Field(min_length=8, max_length=40)
```

```
@@@ -31,6 +31,7 @@@ class UserRegister(SQLModel):
```

```
# Properties to receive via API on update, all are optional
class UserUpdate(UserBase):
    + is_superuser: bool = False
    email: EmailStr | None = Field(default=None, max_length=255) #
    type: ignore
    password: str | None = Field(default=None, min_length=8,
        max_length=40)
```

```
@@@ -47,6 +48,7 @@@ class UpdatePassword(SQLModel):
```

```
# Database model, database table inferred from class name
class User(UserBase, table=True):
    + is_superuser: bool = False
    id: uuid.UUID = Field(default_factory=uuid.uuid4,
        primary_key=True)
    hashed_password: str
    items: list["Item"] = Relationship(back_populates="owner",
        cascade_delete=True)
    @@@ -54,6 +56,7 @@@ class User(UserBase, table=True):
```

```
# Properties to return via API, id is always required
class UserPublic(UserBase):
    + is_superuser: bool = False
    id: uuid.UUID
```

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(Extract Class) – Moves a group of related fields and methods from an existing class into a newly created class.

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(Extract Interface) – Creates a new interface from existing method(s) in a class.

(Move Method) – Relocates a method to a more appropriate class.

(Move Field) – Relocates a field to a more appropriate class.

(Replace Magic Number with Constant) – Replaces a literal number with a named constant.

(Encapsulate Field) – Change a field access from not private to private and create get and set methods.

**\*\*Instructions:\*\***

1. Begin your response with a bullet-point list of the refactoring type(s) applied.
2. Then, briefly justify each identified refactoring with reference to the specific code changes.
3. Only include refactorings from the list above.
4. Be concise but precise in your explanations.

Do not generate explanations unrelated to the given transformation.



### Push Down Field

The `is_superuser` field was removed from the superclass `UserBase` and re-introduced in each of its specific subclasses (`UserCreate`, `UserUpdate`, `User`, and `UserPublic`), relocating that property downward in the class hierarchy.

You are an expert coding assistant specialized in software refactoring, with many years of experience analyzing code transformations.

You will be given the diffs of a commit:

```
- **Diffs:**
diff --git backend/app/models.py backend/app/models.py
index 268e544..93f188a 100644
--- backend/app/models.py
+++ backend/app/models.py
@@ -14,13 +14,13 @@ class E2UserBase:
```

```
class UserBase(SQLModel, EUserBase, E2UserBase):
+ password: str = Field(min_length=8, max_length=40)
email: EmailStr = Field(unique=True, index=True,
max_length=255)
```

```
# Properties to receive via API on creation
class UserCreate(UserBase):
is_superuser: bool = False
- password: str = Field(min_length=8, max_length=40)
```

```
class UserRegister(SQLModel):
```

Your task is to identify which refactoring type(s) have been applied in transforming the original program into the new version. Use only the following list of predefined refactorings:

(Add Method Parameter) – Introduces a new parameter to an existing method.

(Remove Method Parameter) – Eliminates an existing parameter from a method signature.

(Rename Method) – Changes the name of a method while preserving its behavior.

(Rename Class) – Changes the name of a class without altering its structure.

(Rename Package) – Changes the name of a package declaration.

(Rename Field) – Changes the name of a class or instance variable.

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(Encapsulate Field) – Change a field access from not private to private and create get and set methods.

**\*\*Instructions:\*\***

1. Begin your response with a bullet-point list of the refactoring type(s) applied.
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Do not generate explanations unrelated to the given transformation.



### Pull Up Field

The `password` field was removed from the subclass `UserCreate` and added to its parent `UserBase`, relocating that property upward in the class hierarchy.

You are an expert coding assistant specialized in software refactoring, with many years of experience analyzing code transformations.

You will be given the diffs of a commit:

```
- **Diffs:**
diff --git backend/app/models.py backend/app/models.py
index 080e548..268e544 100644
--- backend/app/models.py
+++ backend/app/models.py
@@ -67,7 +67,7 @@ class UsersPublic(SQLModel):

# Shared properties
class ItemBase(SQLModel):
- title: str = Field(min_length=1, max_length=255)
+ title_item: str = Field(min_length=1, max_length=255)
description: str | None = Field(default=None, max_length=255)

@@ -78,7 +78,7 @@ class ItemCreate(ItemBase):

# Properties to receive on item update
class ItemUpdate(ItemBase):
- title: str | None = Field(default=None, min_length=1,
max_length=255) # type: ignore
+ title_item: str | None = Field(default=None, min_length=1,
max_length=255) # type: ignore

# Database model, database table inferred from class name
diff --git backend/app/tests/api/routes/test_items.py
backend/app/tests/api/routes/test_items.py
index c215238..27f3c16 100644
--- backend/app/tests/api/routes/test_items.py
+++ backend/app/tests/api/routes/test_items.py
```

```
@@ -34,7 +34,7 @@ def test_read_item(  
)  
assert response.status_code == 200  
content = response.json()  
- assert content["title"] == item.title  
+ assert content["title"] == item.title_item  
assert content["description"] == item.description  
assert content["id"] == str(item.id)  
assert content["owner_id"] == str(item.owner_id)
```

Your task is to identify which refactoring type(s) have been applied in transforming the original program into the new version. Use only the following list of predefined refactorings:

(Add Method Parameter) – Introduces a new parameter to an existing method.

(Remove Method Parameter) – Eliminates an existing parameter from a method signature.

(Rename Method) – Changes the name of a method while preserving its behavior.

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**\*\*Instructions:\*\***


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#### **Rename Field**

The property `title` in both `ItemBase` and its subclass `ItemUpdate` was renamed to `title_item`, and all usages (including the test assertion comparing `item.title`) were updated to `item.title_item`.

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