**Plano para uma implementação melhorada**

* **users**
  + [PK] user\_id (INT NOT NULL)
  + username (VARCHAR(255) NOT NULL)
  + hashed\_password (VARCHAR(255) NOT NULL)
  + password\_reset\_token (VARCHAR(255))
  + password\_reset\_token\_timestamp (DATETIMEOFFSET)
  + email (VARCHAR(255) NOT NULL)
  + totp\_secret\_key (VARCHAR(255) NOT NULL)
  + totp\_secret\_key\_timestamp (DATETIMEOFFSET NOT NULL)
  + admin\_role (BIT NOT NULL)
* **products**
  + [PK] product\_id (INT NOT NULL)
  + product\_name (VARCHAR(255) NOT NULL)
  + description (VARCHAR(255) NOT NULL)
  + price (MONEY NOT NULL)
  + category (VARCHAR (255) NOT NULL)
  + stock (INT NOT NULL)
* **reviews**
  + [PK] review\_id (INT NOT NULL)
  + [FK] product\_id (INT NOT NULL)
  + [FK] user\_id (INT NOT NULL)
  + review\_text (VARCHAR(255) NOT NULL)
  + rating (INT NOT NULL)
  + review\_date DATE NOT NULL,
* **emergency\_codes**
  + [PK] [FK] user\_id (INT NOT NULL)
  + [PK] emergency\_code (INT NOT NULL)
  + emergency\_code\_valid(BIT NOT NULL)
  + emergency\_code\_timestamp (DATETIMEOFFSET NOT NULL)
* **carts**
  + [PK] cart\_id (INT NOT NULL)
  + [PK] [FK] user\_id (INT NOT NULL)
  + [PK] [FK] product\_id (INT NOT NULL)
  + quantity (INT NOT NULL)
* **orders**
  + [PK] order\_id (INT NOT NULL)
  + [PK] [FK] user\_id (INT NOT NULL)
  + [PK] [FK] product\_id (INT NOT NULL)
  + quantity (INT NOT NULL)
  + total\_price (MONEY NOT NULL)
  + shipping\_addr (VARCHAR(255) NOT NULL)
  + order\_date (DATETIMEOFFSET NOT NULL)

**Métodos/Módulos que usam queries**

* **EmailHandler**
  + sql\_to\_pdf
* **ProductManagement**
  + verify\_product\_exists
  + verify\_id\_exists
  + create\_product
  + remove\_product
  + update\_product\_name
  + update\_product\_description
  + update\_product\_price
  + update\_product\_category
  + update\_product\_quantity
  + create\_review
  + set\_cart\_item
  + register\_order
* Retrievers
  + get\_orders
  + get\_all\_products
  + verify\_product\_id\_exists
  + get\_product\_by\_id
  + get\_product\_reviews
  + get\_cart
  + get\_user\_email
* TOTPHandler
  + get\_user\_emergency\_codes
  + check\_existence\_emergency\_codes
  + store\_emergency\_codes
  + update\_totp
  + get\_totp\_secret
* UserManagement
  + clear\_reset\_token
  + get\_user\_by\_reset\_token
  + set\_reset\_token\_for\_user
  + search\_user\_by\_username
  + search\_user\_by\_email
  + validate\_login
  + get\_id\_by\_username
  + check\_id\_existence
  + check\_order\_id\_existence
  + create\_user
  + change\_password
  + update\_username
  + search\_user\_by\_id
  + update\_email
  + update\_password
  + get\_username\_by\_id
  + get\_user\_role
  + get\_orders\_by\_user\_id
  + get\_user\_data\_by\_id
* Verifiers
  + check\_username\_exists
  + check\_email\_exists
  + check\_product\_in\_cart
* Views
  + add\_item\_to\_cart
  + remove\_item\_from\_cart
  + remove\_all\_items\_cart
  + checkout

**Uma imagem com texto, diagrama, captura de ecrã, file

Descrição gerada automaticamente**