Chat GPT

Cool short solutions generated by ChatGPT.

- Flask Blueprint CRUD (via API)
- Excel Merge

Flask Blueprint CRUD (via API)

Here's a basic example of a CRUD Flask application using a single Blueprint and MySQL. Please note that we'll use Flask-SQLAlchemy for ORM and Flask-Marshmallow for request validation and serialization.

Please, install necessary packages:

bash

```
pip install flask flask_sqlalchemy flask_marshmallow marshmallow-sqlalchemy flask-mysqldb
```

Here's the code:

python

```
from flask import Flask, request, Blueprint, jsonify
from flask_sqlalchemy import SQLAlchemy
from flask_marshmallow import Marshmallow

app = Flask(__name__)
app.config['SQLALCHEMY_DATABASE_URI'] = 'mysql://username:password@localhost/dbname'
app.config['SQLALCHEMY_TRACK_MODIFICATIONS'] = False

db = SQLAlchemy(app)
ma = Marshmallow(app)

class User(db.Model):
    id = db.Column(db.Integer, primary_key=True)
    username = db.Column(db.String(80), unique=True)
    usernumber = db.Column(db.String(20), unique=True)
    comment = db.Column(db.String(200))

    def __init__(self, username, usernumber, comment):
        self.username = username
        self.usernumber = usernumber
        self.comment = comment
```

```
class UserSchema(ma.SQLAlchemyAutoSchema):
    class Meta:
        model = User
        load_instance = True

user_schema = UserSchema()
users_schema = UserSchema(many=True)

bp = Blueprint('user_api', __name__)

@bp.route('/user', methods=['POST'])
def add_user():
    username = request.json['username']
    usernumber = request.json['usernumber']
    comment = request.json['comment']
    new_user = User(username, usernumber, comment)
    db.session.add(new_user)
    db.session.commit()
    return user_schema.jsonify(new_user)

@bp.route('/user', methods=['GET'])
def get_users():
    all_users = User.query.all()
    result = users_schema.dump(all_users)
    return jsonify(result)

@bp.route('/user/<id>', methods=['GET'])
def get_user(id):
    user = User.query.get(id)
    return user_schema.jsonify(user)

@bp.route('/user/<id>', methods=['PUT'])
def update_user(id):
    user = User.query.get(id)
    username = request.json['username']
    usernumber = request.json['usernumber']
    comment = request.json['comment']
    user.username = username
    user.usernumber = usernumber
```

```
    user.comment = comment
    db.session.commit()
    return user_schema.jsonify(user)

@bp.route('/user/<id>', methods=['DELETE'])
def delete_user(id):
    user = User.query.get(id)
    db.session.delete(user)
    db.session.commit()
    return user_schema.jsonify(user)

app.register_blueprint(bp, url_prefix='/api')

if __name__ == '__main__':
    app.run(debug=True)
```

This script creates a Flask application with a single blueprint (`bp`) that provides the CRUD functionality. It defines the following endpoints:

- `POST /api/user`: Create a new user.
- `GET /api/user`: Retrieve a list of all users.
- `GET /api/user/<id>`: Retrieve a single user by ID.
- `PUT /api/user/<id>`: Update a user by ID.
- `DELETE /api/user/<id>`: Delete a user by ID.

Note:

1. This is a very basic CRUD application and doesn't have any security measures. In a real-world application, you would want to add authentication, input sanitization, error handling, etc.
2. Replace `'mysql://username:password@localhost/dbname'` with your MySQL database details.
3. Also, don't forget to run the DB (Xampp)

Instead of creating a REST API, we could adapt the example to be a simple web application with HTML templates for the user interface.

We will use Flask's built-in `render_template` function to serve HTML files and `redirect` function to redirect users to different routes.

Let's say we have an HTML file named `index.html` in a templates folder, and it's set up to display a list of users and a form to create a new user. We could render that file from our `get_users` route like so:

```
from flask import render_template, redirect, url_for, flash

# ...

@bp.route('/users', methods=['GET', 'POST'])
def users():
    if request.method == 'POST':
        username = request.form['username']
        usernumber = request.form['usernumber']
        comment = request.form['comment']
        new_user = User(username, usernumber, comment)
        db.session.add(new_user)
        db.session.commit()
        flash('User added successfully!', 'success')
        return redirect(url_for('users'))

    all_users = User.query.all()
    return render_template('index.html', users=all_users)
```

In this code, we've combined the create and list users functionality into one route. If the request method is POST, we create a new user. Otherwise, we display all users.

Here's how you might handle the update and delete functionality:

```
@bp.route('/user/update/<id>', methods=['GET', 'POST'])
def update_user(id):
    user = User.query.get(id)

    if request.method == 'POST':
        user.username = request.form['username']
        user.usernumber = request.form['usernumber']
        user.comment = request.form['comment']
        db.session.commit()
        flash('User updated successfully!', 'success')
        return redirect(url_for('users'))

    return render_template('update.html', user=user)
```

```
@bp.route('/user/delete/<id>', methods=['POST'])
def delete_user(id):
    user = User.query.get(id)
    db.session.delete(user)
    db.session.commit()
    flash('User deleted successfully!', 'success')
    return redirect(url_for('users'))
```

In `update_user`, if the request method is POST, we update the user. Otherwise, we display the current user data in a form for editing. In `delete_user`, we simply delete the user and then redirect the client back to the users list.

Note that `flash` function is used to display one-time notifications to the user.

You'll need to create `index.html` and `update.html` templates with the necessary forms for creating, updating and deleting users. For security reasons, ensure you protect against Cross Site Request Forgery (CSRF) in your forms. Flask-WTF and Flask-SeaSurf are some of the libraries that provide CSRF protection.

Again, remember that this is a very basic example. In a real-world application, you would want to add proper error handling, form validation, and user authentication.

Here's a basic example of an `update.html` file using Bootstrap 4. In this example, we're creating a form with fields for username, usernumber, and comment. These fields are pre-populated with the current user's information.

This template uses POST to submit the form, which should trigger the update logic in the `update_user` function you defined earlier.

Please note that this is a very simple example and doesn't include any validation or error handling. A real-world application would need more robust error handling and potentially some client-side validation.

```
<!doctype html>
<html lang="en">

<head>
    <!-- Required meta tags -->
    <meta charset="utf-8">
    <meta name="viewport" content="width=device-width, initial-scale=1, shrink-to-fit=no">
```

```
    <!-- Bootstrap CSS -->
    <link rel="stylesheet" href="https://stackpath.bootstrapcdn.com/bootstrap/4.3.1/css/bootstrap.min.css">

    <title>Update User</title>
</head>

<body>
    <div class="container">
        <h1 class="my-4">Update User</h1>

        <form action="{{ url_for('update_user', id=user.id) }}" method="POST">
            <div class="form-group">
                <label for="username">Username</label>
                <input type="text" class="form-control" id="username" name="username" value="{{
user.username }}" required>
            </div>
            <div class="form-group">
                <label for="usernumber">User Number</label>
                <input type="text" class="form-control" id="usernumber" name="usernumber" value="{{
user.usernumber }}" required>
            </div>
            <div class="form-group">
                <label for="comment">Comment</label>
                <input type="text" class="form-control" id="comment" name="comment" value="{{ user.comment
}}" required>
            </div>
            <button type="submit" class="btn btn-primary">Update User</button>
        </form>
    </div>

    <!-- Optional JavaScript -->
    <!-- jQuery first, then Popper.js, then Bootstrap JS -->
    <script src="https://code.jquery.com/jquery-3.3.1.slim.min.js"></script>
    <script src="https://cdnjs.cloudflare.com/ajax/libs/popper.js/1.14.7/umd/popper.min.js"></script>
    <script src="https://stackpath.bootstrapcdn.com/bootstrap/4.3.1/js/bootstrap.min.js"></script>
</body>

</html>
```

This form includes inputs for username, usernumber, and comment. The `value` attributes are set to the current user's data (e.g., `{{ user.username }}`), so when the form loads, it shows the current data for the user. When the form is submitted, the data in these inputs is sent as a POST request to the `/user/update/<id>` route, which should update the user in the database.

Make sure to include the user's id in the action attribute of the form tag to make sure the correct user gets updated. This is done using the `url_for()` function (e.g., `{{ url_for('update_user', id=user.id) }}`).

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Excel Merge

Excel/CSV Merge Tool

Deze applicatie maakt het mogelijk om eenvoudig meerdere Excel- en CSV-bestanden samen te voegen op basis van gemeenschappelijke kolommen. Je kunt kolommen selecteren, duplicaten hernoemen, en de gecombineerde data opslaan.

Starten

1. **Start de applicatie** (dubbelklik op het .py-bestand of voer uit via Python).
2. Er verschijnt een venster met drie delen:

    - **Linker paneel**: Preview van het geïmporteerde bestand.
    - **Middenpaneel**: Selectie van kolommen, knoppen en instellingen.
    - **Rechter paneel**: Gecombineerde dataset.

Een bestand importeren

1. Klik op **“Import...”** om een .csv of .xlsx bestand te openen.
2. Het bestand verschijnt in het **linkerpaneel**.
3. In de lijst **“Select columns to import”** kun je de kolommen aanvinken die je wilt gebruiken.
4. Als dit het **eerste bestand** is, wordt het de basis voor verdere samenvoeging.

Bestanden samenvoegen

1. Importeer een **tweede bestand**.
2. Selecteer opnieuw de gewenste kolommen.
3. Kies bij **“Join New Key”** de kolom uit het nieuwe bestand die overeenkomt met...

4. …de kolom in het bestaande bestand onder **“Join Existing Key”**.
5. Klik op **“Add ➡”** om samen te voegen.
6. Eventuele dubbele kolomnamen worden automatisch hernoemd (bv. Naam_1).

□□ Kolommen bewerken

In de kopregel van elke tabel kun je met **rechtermuisklik**:

- Een kolom **verwijderen**.
- Een kolom **hernoemen**.

□□ Resultaat opslaan

1. Klik op **“Save…”** om de gecombineerde dataset op te slaan.
2. Kies een bestandsnaam en formaat:
    - .csv voor komma-/puntkomma-gescheiden bestanden.
    - .xlsx voor Excel.

□□ Alles opnieuw beginnen

- Klik op **“Reset”** om de volledige status te wissen en opnieuw te beginnen.

i Tips

- Je kunt rijen en kolommen tellen onderaan het middenpaneel.
- Lege waarden worden weergegeven als lege velden in de preview.
- Na elke samenvoeging wordt de hoofdtabel (rechts) automatisch bijgewerkt.

Code

```
# Dependencies: pandas, openpyxl, PySide6
# Install with: pip install pandas openpyxl PySide6

import sys
import csv
import pandas as pd
```

```
from PySide6 import QtCore, QtWidgets
import pytz

# Ensure timezone usage (not strictly necessary here, but preserves your original import)
pytz.timezone("Europe/Amsterdam")


def read_csv_with_sniff(path):
    with open(path, 'rb') as f:
        raw = f.read(4096)
    try:
        text = raw.decode('utf-8', errors='replace')
    except:
        text = raw.decode('latin1', errors='replace')
    dialect = csv.Sniffer().sniff(text, delimiters=[',', ';', '\t', '|'])
    return pd.read_csv(path, delimiter=dialect.delimiter)


def read_table(path):
    if path.lower().endswith(('.xls', '.xlsx')):
        return pd.read_excel(path, engine="openpyxl")
    else:
        return read_csv_with_sniff(path)


class PandasModel(QtCore.QAbstractTableModel):
    def __init__(self, df=pd.DataFrame()):
        super().__init__()
        self._df = df

    def update(self, df):
        self.beginResetModel()
        self._df = df
        self.endResetModel()

    def rowCount(self, parent=None):
        return min(len(self._df), 100)

    def columnCount(self, parent=None):
        return len(self._df.columns)
```

```
    def data(self, index, role=QtCore.Qt.DisplayRole):
        if role == QtCore.Qt.DisplayRole:
            val = self._df.iat[index.row(), index.column()]
            # Show empty string for NaN
            if pd.isna(val):
                return ''
            return str(val)
        return None

    def headerData(self, section, orientation, role=QtCore.Qt.DisplayRole):
        if role == QtCore.Qt.DisplayRole:
            if orientation == QtCore.Qt.Horizontal:
                return self._df.columns[section]
            else:
                return str(section)
        return None


class MainWindow(QtWidgets.QMainWindow):
    def __init__(self):
        super().__init__()
        self.setWindowTitle("Excel/CSV Merger")
        self.df = None        # main merged DataFrame
        self.new_df = None    # most recently imported DataFrame

        # — Models & TableViews —
        self.new_model  = PandasModel()
        self.main_model = PandasModel()

        self.new_table  = QtWidgets.QTableView()
        self.new_table.setModel(self.new_model)
        self.new_table.horizontalHeader().setContextMenuPolicy(QtCore.Qt.CustomContextMenu)
        self.new_table.horizontalHeader().customContextMenuRequested.connect(self.show_header_menu)
        self.new_table.setMinimumWidth(400)
        self.new_table.setMaximumWidth(600)

        self.main_table = QtWidgets.QTableView()
        self.main_table.setModel(self.main_model)
        self.main_table.horizontalHeader().setContextMenuPolicy(QtCore.Qt.CustomContextMenu)
```

```
self.main_table.horizontalHeader().customContextMenuRequested.connect(self.show_header_menu)
self.main_table.setMinimumWidth(400)
self.main_table.setMaximumWidth(800)

# — Buttons —
self.import_btn = QtWidgets.QPushButton("Import...")
self.add_btn    = QtWidgets.QPushButton("Add ➡")
self.export_btn = QtWidgets.QPushButton("Save...")
self.reset_btn  = QtWidgets.QPushButton("Reset")

for btn in (self.import_btn, self.add_btn, self.export_btn, self.reset_btn):
    btn.setMinimumWidth(60)
    btn.setMaximumWidth(80)

# Icons
#style = self.style()
#self.import_btn.setIcon(style.standardIcon(QtWidgets.QStyle.SP_DialogOpenButton))
#self.add_btn.setIcon   (style.standardIcon(QtWidgets.QStyle.SP_FileDialogNewFolder))
#self.export_btn.setIcon(style.standardIcon(QtWidgets.QStyle.SP_DialogSaveButton))
#self.reset_btn.setIcon (style.standardIcon(QtWidgets.QStyle.SP_BrowserReload))

# Colors
self.import_btn.setStyleSheet("background-color: #e0f7fa; color: #006064;")
self.add_btn.setStyleSheet   ("background-color: #e8f5e9; color: #1b5e20;")
self.export_btn.setStyleSheet("background-color: #fff3e0; color: #e65100;")
self.reset_btn.setStyleSheet ("background-color: #ffebee; color: #b71c1c;")

# Global disabled style
self.setStyleSheet("""
    QPushButton:disabled {
        background-color: #f0f0f0 !important;
        color: #a0a0a0   !important;
    }
""")

# — Column selector & join controls —
self.col_list         = QtWidgets.QListWidget()
self.join_new_lbl     = QtWidgets.QLabel("Join New Key:")
self.join_new_combo   = QtWidgets.QComboBox()
self.join_exist_lbl   = QtWidgets.QLabel("Join Existing Key:")
```

```
self.join_exist_combo = QtWidgets.QComboBox()
self.counters         = QtWidgets.QLabel("Columns: 0 | Rows: 0")

# Connect signals
self.import_btn.clicked.connect(self.select_file)
self.add_btn.clicked.connect   (self.process_import)
self.export_btn.clicked.connect(self.export_result)
self.reset_btn.clicked.connect (self.reset_state)

# Initially disable until needed
self.add_btn.setEnabled(False)
self.export_btn.setEnabled(False)
self.reset_btn.setEnabled(False)
self.join_new_lbl.hide()
self.join_new_combo.hide()
self.join_exist_lbl.hide()
self.join_exist_combo.hide()

# — Middle layout (buttons, join, list, counters) —
btn_row = QtWidgets.QHBoxLayout()
btn_row.addWidget(self.import_btn)
btn_row.addWidget(self.add_btn)
btn_row.addWidget(self.export_btn)
btn_row.addWidget(self.reset_btn)

join_row = QtWidgets.QHBoxLayout()
join_row.addWidget(self.join_new_lbl)
join_row.addWidget(self.join_new_combo)
join_row.addWidget(self.join_exist_lbl)
join_row.addWidget(self.join_exist_combo)

middle_layout = QtWidgets.QVBoxLayout()
middle_layout.addLayout(btn_row)
middle_layout.addLayout(join_row)
middle_layout.addWidget(QtWidgets.QLabel("Select columns to import:"))
middle_layout.addWidget(self.col_list)
middle_layout.addStretch()
middle_layout.addWidget(self.counters)

middle_widget = QtWidgets.QWidget()
```

```
        middle_widget.setLayout(middle_layout)
        middle_widget.setMinimumWidth(200)

        # — Splitter for three panels —
        splitter = QtWidgets.QSplitter(QtCore.Qt.Horizontal)
        splitter.addWidget(self.new_table)
        splitter.addWidget(middle_widget)
        splitter.addWidget(self.main_table)

        self.setCentralWidget(splitter)
        self.resize(1200, 300)

    def select_file(self):
        path, _ = QtWidgets.QFileDialog.getOpenFileName(
            self, "Open File", "", "Data Files (*.csv *.xls *.xlsx)"
        )
        if not path:
            return

        try:
            self.new_df = read_table(path)
        except Exception as e:
            QtWidgets.QMessageBox.critical(
                self, "Read Error",
                f"Could not parse \"{path}\":\n{e}"
            )
            return

        # Populate columns list
        self.col_list.clear()
        for col in self.new_df.columns:
            item = QtWidgets.QListWidgetItem(col)
            item.setFlags(item.flags() | QtCore.Qt.ItemIsUserCheckable)
            item.setCheckState(QtCore.Qt.Checked)
            self.col_list.addItem(item)

        # Show or hide join-controls
        if self.df is None:
            self.join_new_lbl.hide()
            self.join_new_combo.hide()
```

```
            self.join_exist_lbl.hide()
            self.join_exist_combo.hide()
        else:
            self.join_new_lbl.show()
            self.join_new_combo.show()
            self.join_exist_lbl.show()
            self.join_exist_combo.show()
            self.join_new_combo.clear()
            self.join_new_combo.addItems(self.new_df.columns)
            self.join_exist_combo.clear()
            self.join_exist_combo.addItems(self.df.columns)

        # Update preview & counters
        self.new_model.update(self.new_df)
        self.update_counters(self.new_df)
        self.add_btn.setEnabled(True)
        self.reset_btn.setEnabled(True)

    def process_import(self):
        sel_cols = [
            self.col_list.item(i).text()
            for i in range(self.col_list.count())
            if self.col_list.item(i).checkState() == QtCore.Qt.Checked
        ]
        if not sel_cols:
            QtWidgets.QMessageBox.warning(self, "No columns", "Select at least one column.")
            return

        if self.df is None:
            # First file becomes main DF
            self.df = self.new_df[sel_cols].copy()
        else:
            # Merge into existing
            key_new   = self.join_new_combo.currentText()
            key_exist = self.join_exist_combo.currentText()
            # Strip spaces from keys for proper matching
            key_new_stripped = key_new.strip()
            key_exist_stripped = key_exist.strip()
            cols_to_take = [key_new] + [c for c in sel_cols if c != key_new]
            df2 = self.new_df[cols_to_take].copy()
```

```
            # Rename duplicates
            rename_map = {}
            for col in sel_cols:
                if col == key_new: continue
                if col in self.df.columns:
                    i = 1
                    while f"{col}_{i}" in self.df.columns:
                        i += 1
                    rename_map[col] = f"{col}_{i}"
            df2.rename(columns=rename_map, inplace=True)

            merged = pd.merge(
                self.df, df2,
                how='outer',
                left_on=key_exist_stripped,
                right_on=key_new_stripped,
                suffixes=(None, None)
            )
            if key_new_stripped != key_exist_stripped:
                merged[key_exist_stripped] = merged[key_exist_stripped].fillna(merged[key_new_stripped])
                merged.drop(columns=[key_new_stripped], inplace=True)
            self.df = merged

        # Update main preview & counters
        self.main_model.update(self.df)
        self.update_counters(self.df)
        self.export_btn.setEnabled(True)

        # Clear new_df state
        self.new_df = None
        self.new_model.update(pd.DataFrame())
        self.add_btn.setEnabled(False)
        self.reset_btn.setEnabled(True)

    def export_result(self):
        path, _ = QtWidgets.QFileDialog.getSaveFileName(
            self, "Save Result", "results.csv", "CSV Files (*.csv);;Excel Files (*.xlsx)"
        )
        if not path:
```

```
            return
        if path.lower().endswith(('.xls', '.xlsx')):
            self.df.to_excel(path, index=False)
        else:
            self.df.to_csv(path, index=False)
        QtWidgets.QMessageBox.information(self, "Exported", f"Saved to {path}")

    def reset_state(self):
        self.df = None
        self.new_df = None
        self.main_model.update(pd.DataFrame())
        self.new_model.update(pd.DataFrame())
        self.col_list.clear()
        self.counters.setText("Columns: 0 | Rows: 0")
        self.add_btn.setEnabled(False)
        self.export_btn.setEnabled(False)
        self.reset_btn.setEnabled(False)
        self.join_new_lbl.hide()
        self.join_new_combo.hide()
        self.join_exist_lbl.hide()
        self.join_exist_combo.hide()

    def update_counters(self, df=None):
        if df is None:
            df = pd.DataFrame()
        cols, rows = (df.shape if not df.empty else (0, 0))
        self.counters.setText(f"Columns: {cols} | Rows: {rows}")

    def get_current_df(self):
        # Called by the header-menu actions
        current = self.sender().parent()  # the QHeaderView
        df = None; which = None
        if self.new_table.horizontalHeader() is current:
            df, which = self.new_df, 'new_df'
        else:
            df, which = self.df, 'df'
        return df, which

    def show_header_menu(self, pos):
        header = self.sender()
```

```
        logical_index = header.logicalIndexAt(pos)
        if logical_index < 0:
            return
        menu = QtWidgets.QMenu(self)
        delete_action = menu.addAction("Delete")
        rename_action = menu.addAction("Rename")
        action = menu.exec_(header.mapToGlobal(pos))
        if action == delete_action:
            self.delete_column(logical_index)
        elif action == rename_action:
            self.rename_column(logical_index)

    def delete_column(self, col_idx):
        df, which = self.get_current_df()
        if df is None or df.empty:
            return
        if len(df.columns) == 1:
            QtWidgets.QMessageBox.warning(self, "Cannot Delete", "At least one column must remain.")
            return
        col_name = df.columns[col_idx]
        df.drop(columns=[col_name], inplace=True)
        if which == 'new_df':
            self.new_model.update(df)
        else:
            self.main_model.update(df)
        self.update_counters(df)

    def rename_column(self, col_idx):
        df, which = self.get_current_df()
        if df is None or df.empty:
            return
        old = df.columns[col_idx]
        new_name, ok = QtWidgets.QInputDialog.getText(self, "Rename Column", f"Rename '{old}' to:", text=old)
        if not ok or not new_name.strip():
            return
        new = new_name.strip()
        if new == old or new in df.columns:
            QtWidgets.QMessageBox.warning(self, "Invalid Name", "Choose a unique, non-empty name.")
            return
        df.rename(columns={old: new}, inplace=True)
```

```
        if which == 'new_df':
            self.new_model.update(df)
        else:
            self.main_model.update(df)
        self.update_counters(df)


if __name__ == '__main__':
    app = QtWidgets.QApplication(sys.argv)
    window = MainWindow()
    window.show()
    sys.exit(app.exec())
```