Gym Churn Analysis - Setup Guide

Project Overview

This repository contains a Jupyter notebook for analyzing gym membership churn patterns using Python data science libraries.

Prerequisites

Before setting up this project, ensure you have the following installed:

- **Python 3.8+** - Download from python.org
- **Git** - Download from git-scm.com
- **VS Code** - Download from code.visualstudio.com
- **VS Code Extensions**:
  - Python (by Microsoft)
  - Jupyter (by Microsoft)

Step-by-Step Setup Instructions

1. Clone the Repository

Open your terminal/command prompt and run:

```
git clone https://github.com/jonathandeng34/gym-churn.git
cd gym-churn
```

2. Create Virtual Environment

Create an isolated Python environment for this project:

On macOS/Linux:

```
python3 -m venv venv
source venv/bin/activate
```

On Windows:

```
python -m venv venv
venv\Scripts\activate
```

3. Install Dependencies

With your virtual environment activated, install all required packages:

```
# Upgrade pip to latest version
pip install --upgrade pip

# Install all project dependencies
pip install -r requirements.txt
```

This will install the following packages:

- jupyter, notebook, jupyterlab, ipykernel
- pandas, numpy
- matplotlib, seaborn, plotly
- scikit-learn
- ipywidgets

4. Configure Jupyter Kernel

Make your virtual environment available to Jupyter:

```
python -m ipykernel install --user --name=gym-churn --display-name="Python (gym-churn)"
```

5. VS Code Configuration

1. **Open the project in VS Code:**

   ```
   code .
   ```

2. **Select Python Interpreter:**

   - Press `Cmd+Shift+P` (Mac) or `Ctrl+Shift+P` (Windows/Linux)
   - Type "Python: Select Interpreter"
   - Choose `./venv/bin/python` (Mac/Linux) or `.\venv\Scripts\python.exe` (Windows)

3. **Configure Notebook Kernel:**

   - Open `cleaning_and_eda.ipynb`
   - Click the kernel selector in the top-right corner of the notebook
   - Select "Select Another Kernel"
   - Choose "Jupyter Kernel"
   - Select "Python (gym-churn)"

6. Verify Your Setup

Test that everything is working correctly:

1. **Run the first cell** (imports):
    - Should complete without errors
    - May show "Matplotlib is building the font cache" message (normal)
2. **Run the second cell** (load dataset):
    - Should display "Dataset Shape: (114000, 21)"
    - Should show the first 5 rows of data

Project Structure

After setup, your project directory should look like this:

```
gym-churn/
├── .git/                  # Git version control
├── .vscode/
│   └── settings.json      # VS Code configuration
├── venv/                  # Virtual environment (don't commit!)
├── dataset.csv            # The gym membership data
├── cleaning_and_eda.ipynb  # Main analysis notebook
├── requirements.txt       # Python dependencies
├── README.md             # Project documentation
└── .gitignore            # Files to ignore in Git
```

Daily Workflow

Starting Work

1. **Navigate to project directory:**

```
cd gym-churn
```

2. **Activate virtual environment:**

```
# Mac/Linux
source venv/bin/activate

# Windows
venv\Scripts\activate
```

3. **Open VS Code:**

```
code .
```

Ending Work

1. **Deactivate virtual environment:**

```
deactivate
```

Troubleshooting

Kernel Issues

Problem: "The kernel failed to start" or "Python Environment 'Python' is no longer available"

Solutions:

1. **Refresh Kernels:**
   - `Cmd+Shift+P` → "Jupyter: Refresh Kernels"
   - Select kernel again
2. **Reinstall Kernel:**

```
python -m ipykernel install --user --name=gym-churn --display-
name="Python (gym-churn)"
```

3. **Restart VS Code** and reselect interpreter

Missing Packages

Problem: ImportError or ModuleNotFoundError

Solution:

```
# Ensure virtual environment is activated
source venv/bin/activate  # or venv\Scripts\activate on Windows

# Reinstall requirements
pip install -r requirements.txt
```

Virtual Environment Issues

Problem: Commands not found or wrong Python version

Solution:

1. **Verify activation:**
   - Terminal prompt should show `(venv)` prefix

- Check Python path: `which python` (should point to venv)

2. **Recreate if necessary:**

```
deactivate
rm -rf venv  # rmdir /s venv on Windows
python3 -m venv venv
source venv/bin/activate
pip install -r requirements.txt
```

Adding New Packages

If you need to install additional packages:

1. **Install the package:**

```
pip install package-name
```

2. **Update requirements.txt:**

```
pip freeze > requirements.txt
```

3. **Commit the updated requirements.txt** to share with team

Best Practices

Git Workflow

- **Never commit the `venv/` directory** (already in .gitignore)
- **Always update requirements.txt** when adding new packages
- **Commit notebook files with cleared outputs** for cleaner diffs

Environment Management

- **Always activate the virtual environment** before working
- **Keep requirements.txt updated** for team synchronization
- **Use the same Python version** across team members when possible

Contact & Support

For issues specific to this project setup:

1. Check this troubleshooting guide first
2. Ensure all prerequisites are properly installed
3. Verify virtual environment is activated
4. Contact the project maintainer if issues persist

Repository: https://github.com/jonathandeng34/gym-churn **Last Updated:** October 10, 2025