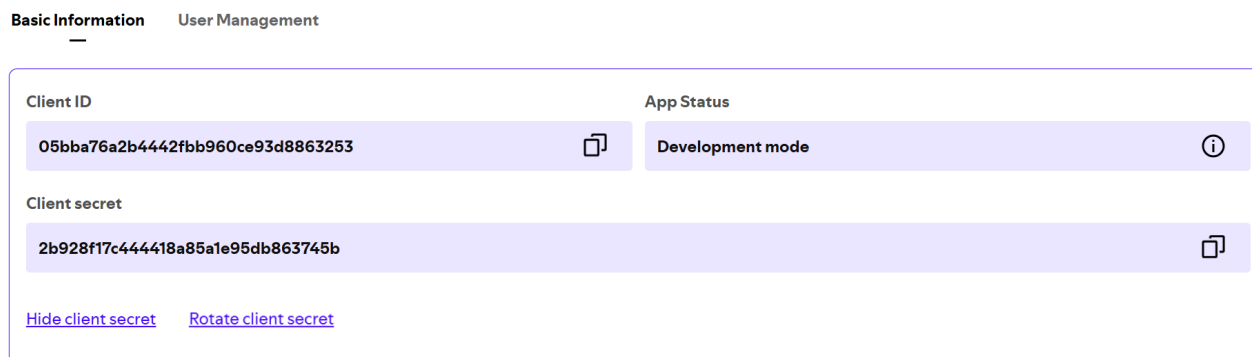
Part 1: Your Scenario (20 points)

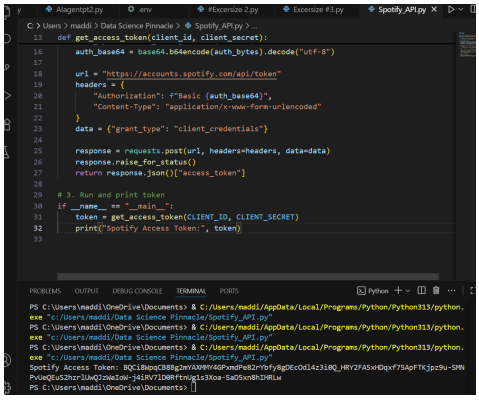
Main Objective: Find the most popular song types by region
Data Sources: Spotify API
Data Types: Popular songs and genres
Geographic Scope: World
Time Range: Present because we are going to be looking at the most popular tracks and genres.

Part 2: Learning about API (15 points)
Write a brief reflection (1 paragraph) on what you learned about APIs

I gained a lot of valuable experience working with APIs and learning how they can be used to access real-world data. This was my first time using an API so I was very nervous, but this activity made learning about them very easy and understandable. I discovered how APIs allow anyone to pull information from many different sources and how they update to reflect real-time data, which is especially interesting to me. I also learned the difference of working with APIs with and without parameters, which help control and refine the data. Overall, this activity was a great introduction that helped me build my confidence and develop skills for using APIs in my final project.

Part 3: Setting Up Free API Access (10 points)
Screenshot showing successful API key creation





Part 4: Build Your AI Data Collection Agent (35 points)
Screenshots of your agent running

```
Spotify AI Data Collection Report
Date: 2025-09-30T17:47:17.743735

Total API Requests: 8
Successful API Requests: 8
Failed API Requests: 0
Artists Passed Quality Check: 3
Collected Artist Count: 3
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

2025-09-30 17:47:14,472 [INFO]: Collected data for artist Bad Bunny
2025-09-30 17:47:14,473 [INFO]: Sleeping for 0.80 seconds before next request.
2025-09-30 17:47:15,274 [INFO]: Processing artist: Adele
2025-09-30 17:47:16,648 [INFO]: Collected data for artist Adele
2025-09-30 17:47:16,649 [INFO]: Sleeping for 1.09 seconds before next request.
2025-09-30 17:47:17,738 [INFO]: Data collection complete.
2025-09-30 17:47:17,741 [INFO]: Saved collected artist data to data/raw\spotify_artists_20250930_1
2025-09-30 17:47:17,744 [INFO]: Generated collection report at data/reports\collection_report.txt
PS C:\Users\maddi\OneDrive\Documents>
```

Part 5:Documentation (20 pts)
Quality assessment report and Collection Summary

metadata_20250930_195017.json > ...


```
{
  "run_time": "2025-09-30T19:50:17.499564",
  "python_version": "3.13.7 (tags/v3.13.7:bcee1c3, Aug 14 2025, 14:15:11) [MSC v.1944 64 bit (AMD64)]",
  "platform": "Windows-11-10.0.26100-SP0",
  "config_used": {
    "artists_to_search": [
      "Taylor Swift",
      "Drake",
      "Bad Bunny",
      "Adele"
    ],
    "collection_settings": {
      "min_delay_seconds": 1.0
    },
    "data_paths": {
      "raw_data": "data/raw",
      "reports": "data/reports"
    }
```



```
    },
    "stats": {
      "total_requests": 8,
      "successful_requests": 8,
      "failed_requests": 0,
      "quality_passed": 3
    },
    "collected_count": 3
}
```

Building an AI agent was a new experience for me that definitely pushed me academically. I had never worked with an API before, so learning what it is and how it is implemented to retrieve real world data was fascinating. Python also isn't my preferred language, as I haven't used it since freshman year, so revisiting it forced me to relearn all the basics and apply them in an advanced way. While completing this project, I have become much more comfortable with API's and Python, and also learned how to design and implement an AI agent.