python tool for cryptocurrency portolio management

Creating a cryptocurrency portfolio management tool can be a great way to track the performance of your crypto investments. Below, I’ll guide you through creating a simple Python project for portfolio management, where you can:

- Add new cryptocurrency holdings.

- Track the price of each cryptocurrency in your portfolio.

- Calculate the total value of your portfolio in real-time using live data.

### requriments:

You will need the `requests` library to interact with a cryptocurrency API (we’ll use the \*\*CoinGecko API\*\*, which is free). You can install it via pip:

```bash

pip install requests

```

### Project Overview:

- \*\*Input:\*\* You will manually add cryptocurrency holdings (name, amount, and purchase price).

- \*\*Output:\*\* putThe program will fetch the real-time price of each cryptocurrency and display:

- Current price.

- Total value of each holding.

- Overall portfolio value.

### Code:

```python

import requests

# Function to get the real-time price of a cryptocurrency

def get\_crypto\_price(crypto\_id):

url = f"https://api.coingecko.com/api/v3/simple/price?ids={crypto\_id}&vs\_currencies=usd"

try:

response = requests.get(url)

data = response.json()

return data[crypto\_id]["usd"]

except Exception as e:

print(f"Error fetching data: {e}")

return None

# Portfolio class to manage and calculate portfolio details

class CryptoPortfolio:

def \_\_init\_\_(self):

self.portfolio = []

def add\_holding(self, crypto\_id, amount, purchase\_price):

self.portfolio.append({

"crypto\_id": crypto\_id,

"amount": amount,

"purchase\_price": purchase\_price

})

def view\_portfolio(self):

total\_value = 0

print("\nPortfolio Details:")

for holding in self.portfolio:

crypto\_id = holding["crypto\_id"]

amount = holding["amount"]

purchase\_price = holding["purchase\_price"]

current\_price = get\_crypto\_price(crypto\_id)

if current\_price is not None:

holding\_value = amount \* current\_price

total\_value += holding\_value

print(f"{crypto\_id.capitalize()}: {amount} coins")

print(f" - Purchase Price: ${purchase\_price} per coin")

print(f" - Current Price: ${current\_price} per coin")

print(f" - Total Value: ${holding\_value:.2f}\n")

else:

print(f"Error fetching price for {crypto\_id}\n")

print(f"Total Portfolio Value: ${total\_value:.2f}\n")

return total\_value

# Create a portfolio instance

portfolio = CryptoPortfolio()

# Input: Add holdings to the portfolio

portfolio.add\_holding("bitcoin", 0.5, 30000) # 0.5 Bitcoin bought at $30,000

portfolio.add\_holding("ethereum", 2, 2000) # 2 Ethereum bought at $2000

portfolio.add\_holding("dogecoin", 1000, 0.05) # 1000 Dogecoin bought at $0.05

# Output: View the portfolio details and current value

portfolio.view\_portfolio()

```

### Explanation:

1. \*\*Function: `get\_crypto\_price()`\*\*

- This function sends a request to the CoinGecko API to fetch the current price of a cryptocurrency in USD.

2. \*\*Class: `CryptoPortfolio`\*\*

- This class stores the portfolio in a list of dictionaries, where each dictionary represents a holding with details like:

- `crypto\_id`: The name of the cryptocurrency (e.g., "bitcoin").

- `amount`: The number of coins you hold.

- `purchase\_price`: The price at which you bought the cryptocurrency.

- The `view\_portfolio()` method fetches real-time prices, calculates the total value of each holding, and prints out the portfolio details.

3. \*\*Portfolio Input:\*\*

- We manually add holdings using `add\_holding()` with details like cryptocurrency ID (e.g., "bitcoin"), amount, and purchase price.

4. \*\*Output:\*\*

- The current price of each cryptocurrency is displayed.

- The total value of each holding is calculated based on the real-time price.

- Finally, the total portfolio value is printed.

### Example Output:

```

Portfolio Details:

Bitcoin: 0.5 coins

- Purchase Price: $30000 per coin

- Current Price: $45000 per coin

- Total Value: $22500.00

Ethereum: 2 coins

- Purchase Price: $2000 per coin

- Current Price: $3200 per coin

- Total Value: $6400.00

Dogecoin: 1000 coins

- Purchase Price: $0.05 per coin

- Current Price: $0.07 per coin

- Total Value: $70.00

Total Portfolio Value: $28970.00

```