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// main.py

1 # Portions of this code were developed with assistance from an AI tool (Claude)
2 from datetime import datetime
3 import json
4 import requests
5 from colorama import Fore, Style
6 from menu import InteractiveMenu
7
8 SUPPORTED_CURRENCIES = [
9     "USD", "EUR", "GBP", "JPY", "AUD", "CAD", "CHF", "CNY",
10    "SEK", "NZD", "MXN", "SGD", "HKD", "NOK", "KRW", "TRY",
11    "INR", "BRL", "ZAR", "DKK", "PLN", "THB", "IDR", "HUF",
12    "CZK", "ILS", "PHP", "MYR", "RON", "BGN", "ISK",
13 ]
14
15 class ExpenseTracker():
16     def __init__(self,filename='data.txt'):
17         self.filename = filename
18
19     def open_file(self) -> list:
20         try:
21             with open(self.filename,'r') as file:
22                 expenseList = json.load(file)
23             return expenseList
24         except FileNotFoundError:
25             print("File doesn't exist, creating ...")
26             with open(self.filename,'w') as file:
27                 json.dump([],file)
28             return []
29
30     def write_file(self,data:list):
31         try:
32             with open(self.filename,'w') as file:
33                 json.dump(data,file)
34         except FileNotFoundError:
35             with open(self.filename,'w') as file:
36                 json.dump([],file)
37
38     def assign_id(self) -> int:
39         totalExpenseList = self.open_file()
40         if len(totalExpenseList) == 0:
41             return 1
42         else:
43             max_id = max(expense['id'] for expense in totalExpenseList)
44             return max_id + 1
45
46     def convert_currency(self,price:float,from_curr:str,to_curr:str) -> float:
47         from_curr = from_curr.upper()
48         to_curr = to_curr.upper()
49         if from_curr == to_curr:
50             return price
51         url = f"https://api.frankfurter.app/latest?from={from_curr}&to={to_curr}"
52         response = requests.get(url)
53         data = response.json()
54         if 'rates' not in data or to_curr not in data['rates']:
55             raise ValueError(f"Could not convert from {from_curr} to {to_curr}: {data.get('message', 'unknown error')}")
56         return price * data['rates'][to_curr]
57
58     def view_total_expenses(self)-> list:
59         expenseList = self.open_file()
60         return expenseList
61
62     def view_filtered_expenses(self)-> list:
63         expenseList = self.open_file()
64         if not expenseList:
65             return []
66         filter_menu = InteractiveMenu(
67             ["By Price", "By Item", "By Date"],
68             title="Filter By"
69         )
70         filter_choice = filter_menu.show()

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71     if filter_choice is None:
72         return []
73     filteredExpenses = []
74     if filter_choice == "By Price":
75         filter_min_value = float(input("Enter the minimum value:\n> "))
76         filter_max_value = float(input("Enter the maximum value:\n> "))
77         for expense in expenseList:
78             if filter_min_value <= expense['price'] <= filter_max_value:
79                 filteredExpenses.append(expense)
80     elif filter_choice == "By Item":
81         filter_item = input("Search for item:\n> ").lower()
82         for expense in expenseList:
83             if filter_item in expense['purchased'].lower():
84                 filteredExpenses.append(expense)
85     elif filter_choice == "By Date":
86         filter_min_date = input("Enter the start range (yyyy-mm-dd):\n> ")
87         filter_max_date = input("Enter the end range (yyyy-mm-dd):\n> ")
88         for expense in expenseList:
89             if filter_min_date <= expense['date'] <= filter_max_date:
90                 filteredExpenses.append(expense)
91     return filteredExpenses
92
93 def add_expenses(self, price:float, purchased:str, currency:str='usd', date:str='', notes:str='')-> str:
94     if not date:
95         date = datetime.now().strftime("%Y-%m-%d")
96     expense = {
97         'id': self.assign_id(),
98         'price': price,
99         'purchased': purchased,
100        'date': date,
101        'currency': currency.lower(),
102        'notes': notes,
103    }
104     expenseList = self.open_file()
105     expenseList.append(expense)
106     self.write_file(expenseList)
107     return "Expense properly added"
108
109 def edit_expenses(self)-> str:
110     expenseList = self.open_file()
111     if not expenseList:
112         return "No expenses to edit."
113     options = [f"{e['id']}": {e['purchased']} - {e['price']} {e['currency'].upper()} ({e['date']})" for e in expenseList]
114     select_menu = InteractiveMenu(options, title="Select Expense")
115     selected = select_menu.show()
116     if selected is None:
117         return "Edit cancelled."
118     selected_id = int(selected.split(":")[0])
119     edit_menu = InteractiveMenu(
120         ["Price", "Purchased Item", "Date of Purchase", "Notes"],
121         title="Edit Field"
122     )
123     choice = edit_menu.show()
124     if choice is None:
125         return "Edit cancelled."
126     for expense in expenseList:
127         if expense['id'] == selected_id:
128             if choice == "Price":
129                 new_price = float(input("Enter the new price:\n> "))
130                 expense['price'] = new_price
131             elif choice == "Purchased Item":
132                 new_purchased = str(input("Enter the new purchased item:\n> "))
133                 expense['purchased'] = new_purchased
134             elif choice == "Date of Purchase":
135                 new_date = str(input("Enter the new date (yyyy-mm-dd):\n> "))
136                 expense['date'] = new_date
137             elif choice == "Notes":
138                 new_notes = input("Enter the new notes:\n> ")
139                 expense['notes'] = new_notes
140     self.write_file(expenseList)
141     return "Expense edited successfully."
142

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143     def delete_expenses(self) -> str:
144         expenseList = self.open_file()
145         if not expenseList:
146             return "No expenses to delete."
147         options = [f"{e['id']}: {e['purchased']} {e['price']} {e['currency'].upper()} ({e['date']})" for e in expenseList]
148         select_menu = InteractiveMenu(options, title="Delete Expense")
149         selected = select_menu.show()
150         if selected is None:
151             return "Delete cancelled."
152         selected_id = int(selected.split(":")[0])
153         expenseList = [expense for expense in expenseList if expense['id'] != selected_id]
154         self.write_file(expenseList)
155         return "Expense deleted successfully."
156
157     def export_to_csv(self, filename='expenses.csv') -> str:
158         expenseList = self.open_file()
159         if not expenseList:
160             return "No expenses to process."
161         with open(filename, 'w') as file:
162             file.write("id,price,purchased,date,currency,notes\n")
163             for expense in expenseList:
164                 notes = expense.get('notes', '')
165                 file.write(f"{expense['id']},{expense['price']},{expense['purchased']},{expense['date']},{expense['currency']},{notes}")
166         return "Expenses exported successfully."
167
168     def convert_prices_to_currency(self,to_currency:str) -> str:
169         expenseList = self.open_file()
170         if not expenseList:
171             return "No expenses to convert."
172         try:
173             for expense in expenseList:
174                 from_currency = expense['currency']
175                 price_in_new_currency = self.convert_currency(expense['price'],from_currency,to_currency)
176                 expense['price'] = round(float(price_in_new_currency),2)
177                 expense['currency'] = to_currency.lower()
178             self.write_file(expenseList)
179             return "All expenses converted successfully."
180         except ValueError as e:
181             return str(e)
182
183     def format_expenses(expenses: list) -> str:
184         if not expenses:
185             return f"\u001b\{Fore.YELLOW}No expenses found.\u001b\{Style.RESET_ALL}"
186         header = (
187             f"\u001b\{Fore.CYAN}\u001b\{Style.BRIGHT}\n"
188             f"\u001b\{{'ID':<6}{'Item':<20}{'Price':>10} \u001b\{{'Curr':<6}{'Date':<12}{'Notes'}\}\n"
189             f"\u001b\{Style.RESET_ALL}\"
190         )
191         separator = f"\u001b\{Fore.CYAN}\u001b\{'?': * 78}\u001b\{Style.RESET_ALL}\"
192         lines = [separator, header, separator]
193         total = 0.0
194         for e in expenses:
195             price = float(e['price'])
196             total += price
197             notes = e.get('notes', '')
198             if len(notes) > 20:
199                 notes = notes[:17] + "..."
200             lines.append(
201                 f"\u001b\{{e['id']:<6}{e['purchased']:<20}{e['price']:>10.2f} \u001b\{{e['currency'].upper():<6}{e['date']:<12}\u001b\{{notes}\}\u001b\{Style.RESET_ALL}\"
202             )
203         lines.append(separator)
204         lines.append(
205             f"\u001b\{Style.BRIGHT}\u001b\{{'Total':<26}{total:>10.2f}\u001b\{Style.RESET_ALL}\"
206         )
207         lines.append(separator)
208         return "\n".join(lines)
209
210     tracker = ExpenseTracker()
211     menu_options = [
212         "View total expenses",
213         "Filter total expenses",
214         "Add expenses",

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215     "Edit expenses",
216     "Delete expenses",
217     "Export expenses to CSV",
218     "Convert currency",
219     "Exit",
220 ]
221
222 running = True
223 while running:
224     menu = InteractiveMenu(menu_options, title="Expense Tracker")
225     choice = menu.show()
226
227     if choice == "View total expenses":
228         print(format_expenses(tracker.view_total_expenses()))
229     elif choice == "Filter total expenses":
230         print(format_expenses(tracker.view_filtered_expenses()))
231     elif choice == "Add expenses":
232         price = float(input("How much was spent?\n> "))
233         purchased = input("What was purchased?\n> ")
234         notes = input("Notes (optional):\n> ")
235         currency_menu = InteractiveMenu(SUPPORTED_CURRENCIES, title="Currency")
236         currency = currency_menu.show()
237         if currency is None:
238             print("Add cancelled.")
239         else:
240             print(tracker.add_expenses(price, purchased, currency, notes=notes))
241     elif choice == "Edit expenses":
242         print(tracker.edit_expenses())
243     elif choice == "Delete expenses":
244         print(tracker.delete_expenses())
245     elif choice == "Export expenses to CSV":
246         print(tracker.export_to_csv())
247     elif choice == "Convert currency":
248         currency_menu = InteractiveMenu(SUPPORTED_CURRENCIES, title="Convert To")
249         to_currency = currency_menu.show()
250         if to_currency is None:
251             print("Conversion cancelled.")
252         else:
253             print(tracker.convert_prices_to_currency(to_currency))
254     elif choice == "Exit" or choice is None:
255         running = False
256
257     if running:
258         input("Press Enter to continue...")
259

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// menu.py

1 import sys
2 import os
3 from colorama import Fore, Style, init
4 from math import ceil
5 from typing import List, Optional
6
7
8 class InteractiveMenu:
9     """
10         A responsive interactive menu system with keyboard navigation.
11         Supports Windows (msvcrt) and macOS/Linux (tty/termios).
12     """
13
14     def __init__(self,
15                 options: List[str],
16                 cursor: str = "?",
17                 highlight_color: str = Fore.GREEN,
18                 items_per_page: int = 10,
19                 title: str = "Menu"):
20         """Initialize the interactive menu."""
21         init(convert=True)
22         self.original_options = [opt for opt in options if opt.strip()]
23         self.cursor = cursor
24         self.highlight_color = highlight_color
25         self.items_per_page = items_per_page
26         self.title = title
27         self.current_index = 0
28         self.current_page = 1
29         self.total_pages = max(1, ceil(len(self.original_options) / items_per_page))
30
31         self.can_navigate = False
32         self._platform = None
33         self.msvcrt = None
34         self.tty = None
35         self.termios = None
36         if os.name == 'nt':
37             try:
38                 import msvcrt
39                 self.msvcrt = msvcrt
40                 self.can_navigate = True
41                 self._platform = 'windows'
42             except ImportError:
43                 pass
44         else:
45             try:
46                 import tty
47                 import termios
48                 self.tty = tty
49                 self.termios = termios
50                 self.can_navigate = True
51                 self._platform = 'unix'
52             except ImportError:
53                 pass
54
55     def _clear_screen(self) -> None:
56         """Clear the terminal screen."""
57         os.system('cls' if os.name == 'nt' else 'clear')
58
59     def _get_key(self) -> Optional[str]:
60         """Get a single keypress without Enter. Supports Windows and Unix."""
61         if not self.can_navigate:
62             return None
63
64         if self._platform == 'windows' and self.msvcrt is not None:
65             if self.msvcrt.kbhit():
66                 key = self.msvcrt.getch()
67                 if key == b'\xe0': # Special key prefix on Windows
68                     key = self.msvcrt.getch()
69                     if key == b'H': return 'up'
70                     elif key == b'P': return 'down'

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143
144     if not self.can_navigate:
145         print("Interactive navigation not available.")
146         return None
147
148     old_settings = None
149     if self._platform == 'unix' and self.termios is not None and self.tty is not None:
150         old_settings = self.termios.tcgetattr(sys.stdin)
151         self.tty.setcbreak(sys.stdin.fileno())
152
153     try:
154         # Initial render
155         self._clear_screen()
156         self._render_menu()
157
158         while True:
159             key = self._get_key()
160             if key is None:
161                 continue
162
163             needs_refresh = False
164
165             if key == 'up' and self.current_index > 0:
166                 self.current_index -= 1
167                 new_page = (self.current_index // self.items_per_page) + 1
168                 if new_page != self.current_page:
169                     self.current_page = new_page
170                     needs_refresh = True
171
172             elif key == 'down' and self.current_index < len(self.original_options) - 1:
173                 self.current_index += 1
174                 new_page = (self.current_index // self.items_per_page) + 1
175                 if new_page != self.current_page:
176                     self.current_page = new_page
177                     needs_refresh = True
178
179             elif key == 'left' and self.total_pages > 1 and self.current_page > 1:
180                 self.current_page -= 1
181                 self.current_index = (self.current_page - 1) * self.items_per_page
182                 needs_refresh = True
183
184             elif key == 'right' and self.total_pages > 1 and self.current_page < self.total_pages:
185                 self.current_page += 1
186                 self.current_index = min(
187                     (self.current_page - 1) * self.items_per_page,
188                     len(self.original_options) - 1
189                 )
190                 needs_refresh = True
191
192             elif key == 'reset':
193                 self.current_index = 0
194                 self.current_page = 1
195                 needs_refresh = True
196
197             elif key == 'enter':
198                 selected_option = self.original_options[self.current_index]
199                 self._clear_screen()
200                 return selected_option
201
202             elif key in ['escape', 'quit']:
203                 self._clear_screen()
204                 return None
205
206             # Only refresh if something changed
207             if needs_refresh:
208                 self._clear_screen()
209                 self._render_menu()
210
211         except KeyboardInterrupt:
212             self._clear_screen()
213             return None
214     except Exception as e:

```

