

```
--- main.py ---
```

```
import discord
```

```
from discord.ext import commands
```

```
from entity.BrowserEntity import BrowserEntity
```

```
from boundary.HelpBoundary import HelpBoundary
```

```
from boundary.AccountBoundary import AccountBoundary
```

```
from boundary.StopBoundary import StopBoundary # Import StopBoundary
```

```
from boundary.LaunchBrowserBoundary import LaunchBrowserBoundary # Import
BrowserBoundary for browser launch
```

```
from boundary.CloseBrowserBoundary import CloseBrowserBoundary # Import
CloseBrowserBoundary for closing browser
```

```
from boundary.LoginBoundary import LoginBoundary
```

```
from boundary.NavigationBoundary import NavigationBoundary # Import NavigationBoundary for
navigating to a URL
```

```
from boundary.GetPriceBoundary import GetPriceBoundary
```

```
from boundary.MonitorPriceBoundary import MonitorPriceBoundary
```

```
from boundary.StopMonitoringPriceBoundary import StopMonitoringPriceBoundary
```

```
from control.MonitorPriceControl import MonitorPriceControl
```

```
from utils.Config import Config
```

```
# Set up the bot's intents
```

```
intents = discord.Intents.default()
```

```
intents.message_content = True # Enable reading message content
```

```
# Initialize the bot with the correct command prefix and intents
```

```
class MyBot(commands.Bot):
```

```
    async def setup_hook(self):
```

```

browser_entity = BrowserEntity()

# Create a single instance of MonitorPriceControl
monitor_price_control = MonitorPriceControl(browser_entity)

await self.add_cog(HelpBoundary(self)) # Register HelpBoundary
await self.add_cog(AccountBoundary(self)) # Register AccountBoundary
await self.add_cog(StopBoundary(self)) # Register StopBoundary
await self.add_cog(LaunchBrowserBoundary(self, browser_entity))
await self.add_cog(NavigationBoundary(self, browser_entity))

        await self.add_cog(CloseBrowserBoundary(self, browser_entity)) # Register
CloseBrowserBoundary to close browser

await self.add_cog(LoginBoundary(self, browser_entity))
await self.add_cog(GetPriceBoundary(self, browser_entity))
await self.add_cog(MonitorPriceBoundary(self, monitor_price_control))
await self.add_cog(StopMonitoringPriceBoundary(self, monitor_price_control))


async def on_ready(self):

    # Greet the user when the bot is online

    print(f"Logged in as {self.user}")

        channel = discord.utils.get(self.get_all_channels(), name="general") # Adjust the channel
name

    if channel:

        await channel.send("Hi, I'm online! Type '!project_help' to see what I can do.")


async def on_command_error(self, ctx, error):

    """Handle unrecognized commands."""

    if isinstance(error, commands.CommandNotFound):

        await ctx.send("Command not recognized. Type !project_help to see the list of commands.")

```

```
# Run the bot
```

```
if __name__ == "__main__":
```

```
    bot = MyBot(command_prefix="!", intents=intents)
```

```
    print("Bot is starting...")
```

```
    bot.run(Config.DISCORD_TOKEN) # Run the bot with your token
```

```
--- Tests_URLs.txt ---
```

Working Commands: Test commands

```
!project_help
```

```
!stop_bot
```

```
!fetch_all_accounts
```

```
!add_account discordtestUser discordTestPass discordtestWebsite
```

```
!fetch_account_by_website discordtestWebsite
```

```
!delete_account 4
```

```
!stop_bot
```

```
!!launch_browser
```

!close\_browser

!navigate\_to\_website

!login\_bestbuy

!get\_price

!start\_monitoring\_price

!stop\_monitoring\_price

!check\_availability <https://www.opentable.com/r/bar-spero-washington/>

!monitor\_availability <https://www.opentable.com/r/bar-spero-washington/>

!monitor\_availability <https://www.opentable.com/r/bar-spero-washington/> "October 2"

!stop\_monitoring\_availability

\*\*\*\*\*

Working on it:

!check\_availability <https://www.opentable.com/r/bar-spero-washington/> "August 22" "8:00 PM"

\*\*\*\*\*

URLs to Test:

<https://www.opentable.com/r/bar-spero-washington/>

[https://www.ebay.com/itm/314411766963?\\_trkparms=amclsrc%3DITM%26aid%3D777008%26algo%3DPERSONAL.TOPIC%26ao%3D1%26asc%3D20240603121456%26meid%3Da07931f944bc4a5b95376fe64d0ab035%26pid%3D102177%26rk%3D1%26rkt%3D1%26itm%3D314411766963%26pmt%3D1%26noa%3D1%26pg%3D4375194%26algv%3DNoSignalMostWatched%26brand%3DSimplifiedSafe&\\_trksid=p4375194.c102177.m166540&\\_trkparms=parentrq%3A71497a9c1910a8cd54f819a0ffff582e%7Cpageci%3A59d1354a-5f2b-11ef-9c4d-f2c982e61003%7Ciid%3A1%7Cvlpname%3Avlp\\_homepage](https://www.ebay.com/itm/314411766963?_trkparms=amclsrc%3DITM%26aid%3D777008%26algo%3DPERSONAL.TOPIC%26ao%3D1%26asc%3D20240603121456%26meid%3Da07931f944bc4a5b95376fe64d0ab035%26pid%3D102177%26rk%3D1%26rkt%3D1%26itm%3D314411766963%26pmt%3D1%26noa%3D1%26pg%3D4375194%26algv%3DNoSignalMostWatched%26brand%3DSimplifiedSafe&_trksid=p4375194.c102177.m166540&_trkparms=parentrq%3A71497a9c1910a8cd54f819a0ffff582e%7Cpageci%3A59d1354a-5f2b-11ef-9c4d-f2c982e61003%7Ciid%3A1%7Cvlpname%3Avlp_homepage)

<https://www.trendyol.com/puma/rebound-v6-low-p-736020132?boutiqueId=61&merchantId=184734&sav=true>

<https://www.bestbuy.com/site/microsoft-xbox-wireless-controller-for-xbox-series-x-xbox-series-s-xbox-one-windows-devices-sky-cipher-special-edition/6584960.p?skuld=6584960>

<https://www.google.com/>

Conclusion:

Control objects: Orchestrate the flow, decide which entities to use, and manage interactions between boundary and entity objects.

Entity objects: Contain the business logic (like logging in, updating prices, managing accounts).

```
--- AccountBoundary.py ---
```

```
from discord.ext import commands
```

```
from control.AccountControl import AccountControl
```

```
class AccountBoundary(commands.Cog):
```

```
    def __init__(self, bot):
```

```
        self.bot = bot
```

```
        self.control = AccountControl()
```

```
    @commands.command(name="fetch_all_accounts")
```

```
    async def fetch_all_accounts(self, ctx):
```

```
        """Fetch all accounts from the database."""
```

```
        await ctx.send("Command recognized, taking action: Fetching all accounts.")
```

```
        accounts = self.control.fetch_all_accounts()
```

```
        if accounts:
```

```
            account_list = "\n".join([f"ID: {acc[0]}, Username: {acc[1]}, Password: {acc[2]}, Website: {acc[3]}" for acc in accounts])
```

```
            await ctx.send(f"Accounts:\n{account_list}")
```

```
        else:
```

```
            await ctx.send("No accounts found.")
```

```
    @commands.command(name="fetch_account_by_website")
```

```
    async def fetch_account_by_website(self, ctx, website: str):
```

```
"""Fetch an account by website."""
```

```
await ctx.send(f"Command recognized, taking action: Fetching account for website {website}.")
```

```
account = self.control.fetch_account_by_website(website)
```

```
if account:
```

```
    await ctx.send(f"Account for {website}: Username: {account[0]}, Password: {account[1]}")
```

```
else:
```

```
    await ctx.send(f"No account found for website {website}.")
```

```
@commands.command(name="add_account")
```

```
async def add_account(self, ctx, username: str, password: str, website: str):
```

```
    """Add a new account."""
```

```
    await ctx.send("Command recognized, taking action: Adding a new account.")
```

```
    result = self.control.add_account(username, password, website)
```

```
    if result:
```

```
        await ctx.send(f"Account for {website} added successfully.")
```

```
    else:
```

```
        await ctx.send(f"Failed to add account for {website}.")
```

```
@commands.command(name="delete_account")
```

```
async def delete_account(self, ctx, account_id: int):
```

```
    """Delete an account by ID."""
```

```
    await ctx.send(f"Command recognized, taking action: Deleting account with ID {account_id}.")
```

```
    result = self.control.delete_account(account_id)
```

```
    if result:
```

```
        await ctx.send(f"Account with ID {account_id} deleted successfully.")
```

```
    else:
```

```
        await ctx.send(f"Failed to delete account with ID {account_id}.")
```

--- CloseBrowserBoundary.py ---

from discord.ext import commands

from control.CloseBrowserControl import CloseBrowserControl

from entity.BrowserEntity import BrowserEntity

class CloseBrowserBoundary(commands.Cog):

def \_\_init\_\_(self, bot, browser\_entity):

self.bot = bot

self.close\_browser\_control = CloseBrowserControl(browser\_entity) # Pass the browser\_entity  
to the control

@commands.command(name='close\_browser')

async def close\_browser(self, ctx):

await ctx.send("Command recognized, taking action to close the browser.")

result = self.close\_browser\_control.close\_browser()

await ctx.send(result)

--- GetPriceBoundary.py ---

from discord.ext import commands

from control.GetPriceControl import GetPriceControl

class GetPriceBoundary(commands.Cog):

def \_\_init\_\_(self, bot, browser\_entity):



```
self.bot = bot
```

```
self.price_control = GetPriceControl(browser_entity)
```

```
@commands.command(name='get_price')
```

```
async def get_price(self, ctx, url: str=None):
```

```
    """Command to get the price from the given URL."""
```

```
    await ctx.send("Command recognized, taking action.")
```

```
    response = await self.price_control.get_price(url)
```

```
    await ctx.send(response)
```

```
--- HelpBoundary.py ---
```

```
from discord.ext import commands
```

```
from control.HelpControl import HelpControl
```

```
class HelpBoundary(commands.Cog): # Cog to register with the bot
```

```
    def __init__(self, bot):
```

```
        self.bot = bot
```

```
        self.control = HelpControl() # Initialize control object
```

```
@commands.command(name="project_help")
```

```
async def project_help(self, ctx):
```

```
    """Send a message with all the available commands."""
```

```
    await ctx.send("Command recognized, taking action.")
```

```
    response = self.control.get_help_message()
```

```
    await ctx.send(response)
```

--- LaunchBrowserBoundary.py ---

from discord.ext import commands

from control.LaunchBrowserControl import LaunchBrowserControl

class LaunchBrowserBoundary(commands.Cog):

def \_\_init\_\_(self, bot, browser\_entity):

self.bot = bot

self.launch\_browser\_control = LaunchBrowserControl(browser\_entity) # Pass the

browser\_entity to the control

@commands.command(name='launch\_browser')

async def launch\_browser(self, ctx):

await ctx.send("Command recognized, taking action.")

result = self.launch\_browser\_control.launch\_browser()

await ctx.send(result)

--- LoginBoundary.py ---

from discord.ext import commands

from control.LoginControl import LoginControl

class LoginBoundary(commands.Cog):

def \_\_init\_\_(self, bot, browser\_entity):

self.bot = bot

self.login\_control = LoginControl(browser\_entity) # Pass browser\_entity to control

```
@commands.command(name='login')
```

```
async def login(self, ctx, site: str):
```

```
    await ctx.send("Command recognized, taking action.")
```

```
    result = await self.login_control.login(site)
```

```
    await ctx.send(result)
```

```
--- MonitorPriceBoundary.py ---
```

```
from discord.ext import commands
```

```
from control.MonitorPriceControl import MonitorPriceControl
```

```
class MonitorPriceBoundary(commands.Cog):
```

```
    def __init__(self, bot, monitor_price_control):
```

```
        self.bot = bot
```

```
        self.monitor_price_control = monitor_price_control # Use shared instance
```

```
@commands.command(name='start_monitoring_price')
```

```
async def start_monitoring_price(self, ctx, url: str = None, frequency: int = 20):
```

```
    await ctx.send(f"Command recognized, starting price monitoring at {url} every {frequency} second(s).")
```

```
    response = await self.monitor_price_control.start_monitoring_price(ctx, url, frequency)
```

```
    await ctx.send(response)
```

```
--- NavigationBoundary.py ---
```

```
import discord
```

```
from discord.ext import commands
```

```
from control.NavigationControl import NavigationControl
```

```
class NavigationBoundary(commands.Cog):
```

```
    def __init__(self, bot, browser_entity):
```

```
        self.bot = bot
```

```
        self.navigation_control = NavigationControl(browser_entity)
```

```
    @commands.command(name='navigate_to_website')
```

```
    async def navigate_to_website(self, ctx, url: str = None):
```

```
        await ctx.send("Command recognized, taking action.")
```

```
        result = self.navigation_control.navigate_to_website(url)
```

```
        await ctx.send(result)
```

```
--- StopBoundary.py ---
```

```
from discord.ext import commands
```

```
from control.StopControl import StopControl
```

```
class StopBoundary(commands.Cog):
```

```
    def __init__(self, bot):
```

```
        self.bot = bot
```

```
        self.control = StopControl()
```

```
    @commands.command(name="stop_bot")
```

```
    async def stop_bot(self, ctx):
```

```
        """Shut down the bot."""
```

```
        await ctx.send("Command recognized, taking action")
```

```
await self.control.stop_bot(ctx, self.bot) # Call the control's method to stop the bot
```

```
--- StopMonitoringPriceBoundary.py ---
```

```
from discord.ext import commands
```

```
from control.MonitorPriceControl import MonitorPriceControl
```

```
class StopMonitoringPriceBoundary(commands.Cog):
```

```
    def __init__(self, bot, monitor_price_control):
```

```
        self.bot = bot
```

```
        self.monitor_price_control = monitor_price_control # Use shared instance
```

```
@commands.command(name='stop_monitoring_price')
```

```
    async def StopMonitoringPrice(self, ctx):
```

```
        """Command to stop monitoring the price."""
```

```
        await ctx.send("Command recognized, taking action.")
```

```
        response = self.monitor_price_control.stop_monitoring()
```

```
        await ctx.send(response)
```

```
--- __init__.py ---
```

```
#empty init file
```

```
--- AccountControl.py ---
```

```
from DataObjects.AccountDAO import AccountDAO
```

```
class AccountControl:
```

```

def __init__(self):

    self.account_dao = AccountDAO() # DAO for database operations


def add_account(self, username: str, password: str, website: str):

    """Add a new account to the database."""

    self.account_dao.connect() # Establish database connection

    result = self.account_dao.add_account(username, password, website) # Call DAO to add
account

    self.account_dao.close() # Close the connection

    return result


def delete_account(self, account_id: int):

    """Delete an account by ID."""

    self.account_dao.connect() # Establish database connection

    result = self.account_dao.delete_account(account_id)

    self.account_dao.reset_id_sequence() # Reset the ID sequence

    self.account_dao.close() # Close the connection

    return result


def fetch_all_accounts(self):

    """Fetch all accounts using the DAO."""

    self.account_dao.connect() # Establish database connection

    accounts = self.account_dao.fetch_all_accounts() # Fetch accounts from DAO

    self.account_dao.close() # Close the connection

    return accounts if accounts else None


def fetch_account_by_website(self, website: str):

```

```
"""Fetch an account by website."""
```

```
self.account_dao.connect() # Establish database connection
```

```
account = self.account_dao.fetch_account_by_website(website)
```

```
self.account_dao.close() # Close the connection
```

```
return account if account else None
```

```
--- CloseBrowserControl.py ---
```

```
class CloseBrowserControl:
```

```
    def __init__(self, browser_entity):
```

```
        self.browser_entity = browser_entity
```

```
    def close_browser(self):
```

```
        return self.browser_entity.close_browser()
```

```
--- GetPriceControl.py ---
```

```
from entity.PriceEntity import PriceEntity
```

```
from utils.css_selectors import Selectors
```

```
class GetPriceControl:
```

```
    def __init__(self, browser_entity):
```

```
        self.price_entity = PriceEntity(browser_entity)
```

```
    async def get_price(self, url: str):
```

```
        # Fetch the url using the correct CSS selector
```

```
        if not url:
```

```
selectors = Selectors.get_selectors_for_url("bestbuy")

url = selectors.get('priceUrl') # Get the price URL

if not url:

    return "No URL provided, and default URL for BestBuy could not be found."

print("URL not provided, default URL for BestBuy is: " + url)
```

```
# Step 3: Call the entity to get the price

price = self.price_entity.get_price_from_page(url)

return price
```

--- HelpControl.py ---

```
class HelpControl:
```

```
    def get_help_message(self):
```

```
        """Returns a list of available bot commands."""
```

```
        help_message = (
```

```
            "Here are the available commands:\n"
```

```
            "!project_help - Get help on available commands.\n"
```

```
            "!login 'website' - Log in to a website.\n"
```

```
            "!launch_browser - Launch the browser.\n"
```

```
            "!close_browser - Close the browser.\n"
```

```
            "!navigate_to_website - Navigate to a website.\n"
```

```
            "!get_price - Check the price of a product.\n"
```

```
            "!monitor_price - Monitor a product price.\n"
```

```
            "!stop_monitoring - Stop monitoring a product.\n"
```

```
            "!check_availability - Check the availability in a restaurant.\n"
```



```
"!monitor_availability - Monitor the availability in a restaurant.\n"
```

```
"!stop_monitoring_availability - Stop monitoring availability.\n"
```

```
"!stop_bot - Stop the bot.\n"
```

```
)
```

```
return help_message
```

```
--- LaunchBrowserControl.py ---
```

```
class LaunchBrowserControl:
```

```
    def __init__(self, browser_entity):
```

```
        self.browser_entity = browser_entity
```

```
    def launch_browser(self):
```

```
        return self.browser_entity.launch_browser()
```

```
--- LoginControl.py ---
```

```
from entity.BrowserEntity import BrowserEntity
```

```
from control.AccountControl import AccountControl
```

```
from selenium.webdriver.common.by import By
```

```
from selenium.webdriver.support.ui import WebDriverWait
```

```
from selenium.webdriver.support import expected_conditions as EC
```

```
from utils.css_selectors import Selectors
```

```
import asyncio
```

```
class LoginControl:
```

```
    def __init__(self, browser_entity):
```

```
self.browser_entity = browser_entity # Manages browser state

self.account_control = AccountControl() # Manages account data
```

```
async def login(self, site: str):
```

```
    # Step 1: Fetch account credentials from the entity object
```

```
    account_info = self.account_control.fetch_account_by_website(site)
```

```
    if not account_info:
```

```
        return f"No account found for {site}"
```

```
    # account_info is a tuple (username, password), so access it by index
```

```
    username, password = account_info[0], account_info[1]
```

```
    print(f"Username: {username}, Password: {password}")
```

```
    # Step 3: Get the URL from the CSS selectors
```

```
    url = Selectors.get_selectors_for_url(site).get('url')
```

```
    print(url)
```

```
    if not url:
```

```
        return f"URL for {site} not found."
```

```
    # Step 4: Navigate to the URL and perform login (handled by the entity object)
```

```
    result = await self.browser_entity.perform_login(url, username, password)
```

```
    return result
```

```
--- MonitorPriceControl.py ---
```

```
import asyncio
```

```
from datetime import datetime
```

```
from entity.PriceEntity import PriceEntity
```

```
from utils.css_selectors import Selectors
```

```
class MonitorPriceControl:
```

```
    """MonitorPriceControl handles the business logic of monitoring the price over time  
    and instructs PriceEntity to fetch prices and export data."""
```

```
    def __init__(self, browser_entity):
```

```
        self.price_entity = PriceEntity(browser_entity) # Initialize PriceEntity for data fetching and  
export
```

```
        self.is_monitoring = False # Control flag for monitoring state
```

```
        self.results = [] # List to store results during monitoring
```

```
    async def start_monitoring_price(self, ctx, url: str = None, frequency=20):
```

```
        """Start monitoring the price at a given interval and provide updates to the user via Discord.
```

```
        ctx: Context from Discord command.
```

```
        url: URL of the product page to monitor.
```

```
        frequency: Time interval (in seconds) between price checks.
```

```
        """
```

```
        if self.is_monitoring:
```

```
            return "Already monitoring prices."
```

```
        self.is_monitoring = True # Set monitoring state to true
```

```
        previous_price = None # Track the last price fetched
```

```
        try:
```

```
            while self.is_monitoring:
```

```
# Fetch the current price from PriceEntity
```

```
if not url:
```

```
    selectors = Selectors.get_selectors_for_url("bestbuy")
```

```
    url = selectors.get('priceUrl') # Get the price URL
```

```
    if not url:
```

```
        return "No URL provided, and default URL for BestBuy could not be found."
```

```
    print("URL not provided, default URL for BestBuy is: " + url)
```

```
current_price = self.price_entity.get_price_from_page(url)
```

```
# Determine price changes and prepare the result
```

```
result = ""
```

```
if current_price:
```

```
    if previous_price is None:
```

```
        result = f"Starting price monitoring. Current price: {current_price}"
```

```
    elif current_price > previous_price:
```

```
        result = f"Price went up! Current price: {current_price} (Previous: {previous_price})"
```

```
    elif current_price < previous_price:
```

```
        result = f"Price went down! Current price: {current_price} (Previous: {previous_price})"
```

```
    else:
```

```
        result = f"Price remains the same: {current_price}"
```

```
        previous_price = current_price
```

```
else:
```

```
    result = "Failed to retrieve the price."
```

```
# Add the result to the results list
```

```
self.results.append(result)
```

```
# Create a DTO (Data Transfer Object) to organize the data for export
```

```
data_dto = {
```

```
    "command": "start_monitoring_price", # Command executed
```

```
    "url": url, # URL of the product being monitored
```

```
    "result": result, # Result of the price check
```

```
    "entered_date": datetime.now().strftime('%Y-%m-%d'), # Current date
```

```
    "entered_time": datetime.now().strftime('%H:%M:%S') # Current time
```

```
}
```

```
# Pass the DTO to PriceEntity to handle export to Excel and HTML
```

```
self.price_entity.export_data(data_dto)
```

```
await asyncio.sleep(frequency) # Wait for the next check based on frequency
```

```
except Exception as e:
```

```
    self.results.append(f"Failed to monitor price: {str(e)}")
```

```
def stop_monitoring(self):
```

```
    """Stop the price monitoring loop."""
```

```
    self.is_monitoring = False # Set monitoring state to false
```

```
    # Return the full list of results gathered during monitoring
```

```
    return self.results if self.results else ["No data collected."]
```

```
--- NavigationControl.py ---
```

```
from entity.BrowserEntity import BrowserEntity
```

```
from utils.css_selectors import Selectors
```

```
class NavigationControl:
```

```
    def __init__(self, browser_entity):
```

```
        self.browser_entity = browser_entity
```

```
    def navigate_to_website(self, url: str = None):
```

```
        if not url:
```

```
            selectors = Selectors.get_selectors_for_url("google")
```

```
            url = selectors.get('url')
```

```
        if not url:
```

```
            return "No URL provided, and default URL for google could not be found."
```

```
            print("URL not provided, default URL for Google is: " + url)
```

```
        return self.browser_entity.navigate_to_url(url)
```

```
--- StopControl.py ---
```

```
import discord
```

```
class StopControl:
```

```
    async def stop_bot(self, ctx, bot):
```

```
        """Stop the bot gracefully."""
```

```
        await ctx.send("The bot is shutting down...")
```

```
        await bot.close() # Close the bot
```

```
--- __init__.py ---
```

#empty init file

--- AccountDAO.py ---

import psycopg2

from utils.Config import Config

class AccountDAO:

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

self.dbname = "postgres"

self.user = "postgres"

self.host = "localhost"

self.port = "5432"

self.password = Config.DATABASE\_PASSWORD

def connect(self):

"""Establish a database connection."""

try:

self.connection = psycopg2.connect(

dbname=self.dbname,

user=self.user,

password=self.password,

host=self.host,

port=self.port

)

self.cursor = self.connection.cursor()

print("Database Connection Established.")

except Exception as error:

```
print(f"Error connecting to the database: {error}")
```

```
self.connection = None
```

```
self.cursor = None
```

```
def add_account(self, username: str, password: str, website: str):
```

```
    """Add a new account to the database using structured data."""
```

```
    try:
```

```
        # Combine DTO logic here by directly using the parameters
```

```
        query = "INSERT INTO accounts (username, password, website) VALUES (%s, %s, %s)"
```

```
        values = (username, password, website)
```

```
        self.cursor.execute(query, values)
```

```
        self.connection.commit()
```

```
        print(f"Account {username} added successfully.")
```

```
        return True
```

```
    except Exception as error:
```

```
        print(f"Error inserting account: {error}")
```

```
        return False
```

```
def fetch_account_by_website(self, website):
```

```
    """Fetch account credentials for a specific website."""
```

```
    try:
```

```
        query = "SELECT username, password FROM accounts WHERE LOWER(website) =  
LOWER(%s)"
```

```
        self.cursor.execute(query, (website,))
```

```
        return self.cursor.fetchone()
```

```
    except Exception as error:
```

```
        print(f"Error fetching account for website {website}: {error}")
```



```
return None
```

```
def fetch_all_accounts(self):
```

```
    """Fetch all accounts from the database."""
```

```
    try:
```

```
        query = "SELECT id, username, password, website FROM accounts"
```

```
        self.cursor.execute(query)
```

```
        return self.cursor.fetchall()
```

```
    except Exception as error:
```

```
        print(f"Error fetching accounts: {error}")
```

```
        return []
```

```
def delete_account(self, account_id):
```

```
    """Delete an account by its ID."""
```

```
    try:
```

```
        self.cursor.execute("DELETE FROM accounts WHERE id = %s", (account_id,))
```

```
        self.connection.commit()
```

```
        if self.cursor.rowcount > 0: # Check if any rows were affected
```

```
            print(f"Account with ID {account_id} deleted successfully.")
```

```
            return True
```

```
    else:
```

```
        print(f"No account found with ID {account_id}.")
```

```
        return False
```

```
    except Exception as error:
```

```
        print(f"Error deleting account: {error}")
```

```
        return False
```

```

def reset_id_sequence(self):
    """Reset the ID sequence to the maximum ID."""
    try:
        reset_query = "SELECT setval('accounts_id_seq', (SELECT MAX(id) FROM accounts))"
        self.cursor.execute(reset_query)
        self.connection.commit()
        print("ID sequence reset successfully.")
    except Exception as error:
        print(f"Error resetting ID sequence: {error}")

```

```

def close(self):
    """Close the database connection."""
    if self.cursor:
        self.cursor.close()
    if self.connection:
        self.connection.close()
    print("Database connection closed.")

```

--- BrowserEntity.py ---

```

import asyncio

from selenium.webdriver.common.by import By
from selenium.webdriver.support.ui import WebDriverWait
from selenium.webdriver.support import expected_conditions as EC
from selenium import webdriver
from selenium.webdriver.chrome.service import Service
from utils.css_selectors import Selectors

```

```
class BrowserEntity:
```

```
    def __init__(self):
```

```
        self.driver = None
```

```
        self.browser_open = False
```

```
    def set_browser_open(self, is_open: bool):
```

```
        self.browser_open = is_open
```

```
    def is_browser_open(self) -> bool:
```

```
        return self.browser_open
```

```
    def launch_browser(self):
```

```
        if not self.browser_open:
```

```
            options = webdriver.ChromeOptions()
```

```
            options.add_argument("--remote-debugging-port=9222")
```

```
            options.add_experimental_option("excludeSwitches", ["enable-automation"])
```

```
            options.add_experimental_option('useAutomationExtension', False)
```

```
            options.add_argument("--start-maximized")
```

```
            options.add_argument("--disable-notifications")
```

```
            options.add_argument("--disable-popup-blocking")
```

```
            options.add_argument("--disable-infobars")
```

```
            options.add_argument("--disable-extensions")
```

```
options.add_argument("--disable-webgl")
options.add_argument("--disable-webrtc")
options.add_argument("--disable-rtc-smoothing")
```

```
self.driver = webdriver.Chrome(service=Service(), options=options)
```

```
self.browser_open = True
```

```
return "Browser launched."
```

```
else:
```

```
    return "Browser is already running."
```

```
def close_browser(self):
```

```
    if self.browser_open and self.driver:
```

```
        self.driver.quit()
```

```
        self.browser_open = False
```

```
        return "Browser closed."
```

```
    else:
```

```
        return "No browser is currently open."
```

```
def navigate_to_url(self, url):
```

```
    # Ensure the browser is launched before navigating
```

```
    if not self.is_browser_open():
```

```
        launch_message = self.launch_browser()
```

```
        print(launch_message)
```

```
    # Navigate to the URL if browser is open
```

```
if self.driver:

    self.driver.get(url)

    return f"Navigated to {url}"

else:

    return "Failed to open browser."
```

```
async def perform_login(self, url, username, password):

    # Navigate to the website

    self.navigate_to_url(url)

    await asyncio.sleep(3)


    # Enter the username

    email_field = self.driver.find_element(By.CSS_SELECTOR,
Selectors.get_selectors_for_url(url)['email_field'])

    email_field.send_keys(username)

    await asyncio.sleep(3)


    # Enter the password

    password_field = self.driver.find_element(By.CSS_SELECTOR,
Selectors.get_selectors_for_url(url)['password_field'])

    password_field.send_keys(password)

    await asyncio.sleep(3)


    # Click the login button

    sign_in_button = self.driver.find_element(By.CSS_SELECTOR,
Selectors.get_selectors_for_url(url)['SignIn_button'])
```

```

sign_in_button.click()

await asyncio.sleep(5)


# Wait for the homepage to load

try:

                                                                    WebDriverWait(self.driver,
30).until(EC.presence_of_element_located((By.CSS_SELECTOR,
Selectors.get_selectors_for_url(url)['homePage'])))

        return f"Logged in to {url} successfully with username: {username}"

except Exception as e:

    return f"Failed to log in: {str(e)}"

```

--- PriceEntity.py ---

```

from selenium.webdriver.common.by import By

from utils.exportUtils import ExportUtils # Import ExportUtils for handling data export

from utils.css_selectors import Selectors # Import selectors to get CSS selectors for the browser

from datetime import datetime # Import for date and time

```

```

class PriceEntity:

```

```

    """PriceEntity is responsible for interacting with the system (browser) to fetch prices
    and handle the exporting of data to Excel and HTML."""

```

```

    def __init__(self, browser_entity):

```

```

        self.browser_entity = browser_entity # Browser entity to handle web page interaction

```

```

def get_price_from_page(self, url: str):
    # Navigate to the URL using BrowserEntity
    self.browser_entity.navigate_to_url(url)

    selectors = Selectors.get_selectors_for_url(url)

    try:
        # Find the price element on the page using the selector
        price_element = self.browser_entity.driver.find_element(By.CSS_SELECTOR,
selectors['price'])

        return price_element.text # Return the price text
    except Exception as e:
        return f"Error fetching price: {str(e)}"

```

```

def export_data(self, dto):
    """Export price data to both Excel and HTML using ExportUtils.

    dto: This is a Data Transfer Object (DTO) that contains the command, URL, result, date, and
time.
    """

```

```

    """

```

```

    # Extract the data from the DTO

```

```

    command = dto.get('command')

```

```

    url = dto.get('url')

```

```

    result = dto.get('result')

```

```

    entered_date = dto.get('entered_date') # Optional, could be None

```

```

    entered_time = dto.get('entered_time') # Optional, could be None

```

```
# Call the Excel export method from ExportUtils
```

```
ExportUtils.log_to_excel(  
    command=command,  
    url=url,  
    result=result,  
    entered_date=entered_date, # Pass the optional entered_date  
    entered_time=entered_time # Pass the optional entered_time  
)
```

```
# Call the HTML export method from ExportUtils
```

```
ExportUtils.export_to_html(  
    command=command,  
    url=url,  
    result=result,  
    entered_date=entered_date, # Pass the optional entered_date  
    entered_time=entered_time # Pass the optional entered_time  
)
```

```
--- __init__.py ---
```

```
#empty init file
```

```
--- project_structure.py ---
```

```
import os
```

```
def list_files_and_folders(directory, output_file):  
    with open(output_file, 'w') as f:
```



```

for root, dirs, files in os.walk(directory):

    # Ignore .git and __pycache__ folders

    dirs[:] = [d for d in dirs if d not in ['.git', '__pycache__']]


    f.write(f"Directory: {root}\n")

    for dir_name in dirs:

        f.write(f" Folder: {dir_name}\n")

    for file_name in files:

        f.write(f" File: {file_name}\n")


# Update the directory path to your project folder

project_directory = "D:/HARRISBURG/Harrisburg Master's Fifth Term Late Summer/CISC
699/DiscordBotProject_CISC699"

output_file = os.path.join(project_directory, "other/project_structure.txt")


# Call the function to list files and save output to .txt

list_files_and_folders(project_directory, output_file)


print(f"File structure saved to {output_file}")


--- project_text.py ---

import os

from fpdf import FPDF


# Directory where the project files are located

directory = r"D:\HARRISBURG\Harrisburg Master's Fifth Term Late Summer\CISC

```

699\DiscordBotProject\_CISC699"

```
output_pdf_path = os.path.join(directory, "other/project_text.pdf")
```

# Function to retrieve all text from files, ignoring .git and \_\_pycache\_\_ directories

```
def extract_project_text(directory):
```

```
    project_text = ""
```

```
    for root, dirs, files in os.walk(directory):
```

```
        # Ignore .git and __pycache__ directories
```

```
        dirs[:] = [d for d in dirs if d not in ['.git', '__pycache__']]
```

```
        for file in files:
```

```
            if file.endswith('.py') or file.endswith('.txt') or file.endswith('.md'): # Only considering relevant
```

```
file types
```

```
            file_path = os.path.join(root, file)
```

```
            try:
```

```
                with open(file_path, 'r', encoding='utf-8') as f:
```

```
                    project_text += f"--- {file} ---\n"
```

```
                    project_text += f.read() + "\n\n"
```

```
            except Exception as e:
```

```
                print(f"Could not read file {file_path}: {e}")
```

```
    return project_text
```

# Function to generate a PDF with the extracted text

```
def create_pdf(text, output_path):
```

```
    pdf = FPDF()
```

```
    pdf.set_auto_page_break(auto=True, margin=15)
```

```
pdf.add_page()
```

```
pdf.set_font("Arial", size=12)
```

```
# Ensure proper encoding handling
```

```
for line in text.split("\n"):
```

```
    # Convert the text to UTF-8 and handle unsupported characters
```

```
    try:
```

```
        pdf.multi_cell(0, 10, line.encode('latin1', 'replace').decode('latin1'))
```

```
    except UnicodeEncodeError:
```

```
        # Handle any other encoding issues
```

```
        pdf.multi_cell(0, 10, line.encode('ascii', 'replace').decode('ascii'))
```

```
pdf.output(output_path)
```

```
# Extract project text and create the PDF
```

```
project_text = extract_project_text(directory)
```

```
if project_text:
```

```
    create_pdf(project_text, output_pdf_path)
```

```
    output_pdf_path
```

```
    print("PDF file created with all project's as text at: " + output_pdf_path)
```

```
else:
```

```
    "No project text found."
```

```
--- test_addAccount.py ---
```

```
import sys, os
```

```
sys.path.append(os.path.dirname(os.path.dirname(os.path.abspath(__file__))))
```

```
from control.AccountControl import AccountControl
```

```
def test_add_account(username, password, website):
```

```
    account_control = AccountControl()
```

```
    # Adding a new account
```

```
    result = account_control.add_account(username, password, website)
```

```
    if result:
```

```
        print(f"Account for {website} added successfully.")
```

```
    else:
```

```
        print(f"Failed to add account for {website}.")
```

```
if __name__ == "__main__":
```

```
    test_add_account("newUser", "newPassword123", "newWebsite") # Change values to test
```

```
--- test_deleteAccount.py ---
```

```
import sys, os
```

```
sys.path.append(os.path.dirname(os.path.dirname(os.path.abspath(__file__))))
```

```
from control.AccountControl import AccountControl
```

```
def test_delete_account(account_id):
```

```

account_control = AccountControl()

result = account_control.delete_account(account_id)

if result:

    print(f"Account with ID {account_id} deleted successfully.")

else:

    print(f"Failed to delete account with ID {account_id}.")


if __name__ == "__main__":

    test_delete_account(4) # You can change the account ID here for testing


--- test_excel_creation.py ---

import sys, os

from datetime import datetime


sys.path.append(os.path.dirname(os.path.dirname(os.path.abspath(__file__))))

from utils.exportUtils import ExportUtils

from DataObjects.DataExportDTO import DataExportDTO # Importing the DTO


def test_excel_creation():

    # Mock data that simulates the data received from a website

    mock_command = "MOCK_check_availability"

    mock_url = "MOCKURL_https://www.opentable.com/r/bar-spero-washington/"

    mock_result = "MOCK_No availability for the selected date."

    mock_entered_date = datetime.now().strftime('%Y-%m-%d')

    mock_entered_time = datetime.now().strftime('%H:%M:%S')

```

```
# Create DTO object
```

```
data_dto = DataExportDTO(  
    command=mock_command,  
    url=mock_url,  
    result=mock_result,  
    entered_date=mock_entered_date,  
    entered_time=mock_entered_time  
)
```

```
# Validate the DTO
```

```
try:
```

```
    data_dto.validate()
```

```
except ValueError as ve:
```

```
    print(f"Validation Error: {ve}")
```

```
    return
```

```
# Log data to Excel using the DTO
```

```
result_message = ExportUtils.log_to_excel(  
    command=data_dto.command,  
    url=data_dto.url,  
    result=data_dto.result,  
    entered_date=data_dto.entered_date,  
    entered_time=data_dto.entered_time  
)
```

```
# Output the result of the Excel file creation
```

```

print(result_message)

if __name__ == "__main__":
    test_excel_creation()

--- test_fetchAccounts.py ---

import sys, os

sys.path.append(os.path.dirname(os.path.dirname(os.path.abspath(__file__))))

from control.AccountControl import AccountControl # Import the control layer directly

def test_fetch_accounts():
    account_control = AccountControl() # Use AccountControl instead of AccountBoundary

    # Fetching all accounts
    accounts = account_control.fetch_all_accounts()

    if accounts:
        for account in accounts:
            print(f"ID: {account[0]}, Username: {account[1]}, Password: {account[2]}, Website: {account[3]}")
    else:
        print("No accounts found.")

def test_fetch_account_by_website(website):
    account_control = AccountControl() # Use AccountControl instead of AccountBoundary

```

```

# Fetch the account by website directly

account = account_control.fetch_account_by_website(website)


if account:

    username, password = account # Unpack the returned tuple

    print(f"Website: {website}, Username: {username}, Password: {password}")

else:

    print(f"No account found for website: {website}")


if __name__ == "__main__":

    test_fetch_accounts() # Test fetching all accounts

    test_fetch_account_by_website("ebay") # Test fetching account for a specific website


--- test_html_creation.py ---

import sys, os

from datetime import datetime

sys.path.append(os.path.dirname(os.path.dirname(os.path.abspath(__file__))))

from DataObjects.DataExportDTO import DataExportDTO # Importing the DTO

from utils.exportUtils import ExportUtils


def test_html_creation():

    # Mock data that simulates the data received from a website

    mock_command = "MOCK_check_availability"

    mock_url = "MOCK_https://www.opentable.com/r/bar-spero-washington/"

    mock_result = "No availability for the selected date."

```



```
# Get the current date and time
```

```
mock_entered_date = datetime.now().strftime('%Y-%m-%d')
```

```
mock_entered_time = datetime.now().strftime('%H:%M:%S')
```

```
# Create DTO object
```

```
data_dto = DataExportDTO(  
    command=mock_command,  
    url=mock_url,  
    result=mock_result,  
    entered_date=mock_entered_date,  
    entered_time=mock_entered_time  
)
```

```
# Validate the DTO
```

```
try:
```

```
    data_dto.validate()
```

```
except ValueError as ve:
```

```
    print(f"Validation Error: {ve}")
```

```
    return
```

```
# Prepare the data for HTML export
```

```
mock_data = [data_dto.to_dict()]
```

```
# Export data to HTML using the DTO
```

```
result_message = ExportUtils.export_to_html(  
    data=mock_data,
```

```

        command_name=data.dto.command
    )

    # Output the result of the HTML file creation
    print(result_message)

if __name__ == "__main__":
    test_html_creation()

--- __init__.py ---

#empty init file

--- Config.py ---

class Config:

    DISCORD_TOKEN =

'MTI2OTM4MTE4OTA1NjMzNTk3Mw.Gihcfw.nrQ0x-JiL65P0LIQTO-rTyyXq0qC-2PSSBuXr8'

    CHANNEL_ID = 1269383349278081054

    DATABASE_PASSWORD = 'postgres'

--- css_selectors.py ---

class Selectors:

    SELECTORS = {

        "google": {

            "url": "https://www.google.com/"

        },

        "ebay": {

```

```

"url": "https://signin.ebay.com/signin/",
"email_field": "#userid",
"continue_button": "[data-testid*='signin-continue-btn']",
"password_field": "#pass",
"login_button": "#sgnBt",
"price": ".x-price-primary span" # CSS selector for Ebay price
},
"bestbuy": {

```

"priceUrl":

```

"https://www.bestbuy.com/site/microsoft-xbox-wireless-controller-for-xbox-series-x-xbox-series-s-xb
ox-one-windows-devices-sky-cipher-special-edition/6584960.p?skuId=6584960",

```

```

"url": "https://www.bestbuy.com/signin/",
"email_field": "#fld-e",
#"continue_button": ".cia-form__controls button",
"password_field": "#fld-p1",
"SignIn_button": ".cia-form__controls button",
"price": "[data-testid='customer-price'] span", # CSS selector for BestBuy price
"homePage": ".v-p-right-xxs.line-clamp"
},

```

```

"opentable": {
"url": "https://www.opentable.com/",
"date_field": "#restProfileSideBarDtpDayPicker-label",
"time_field": "#restProfileSideBarDtpTimePickerDtpPicker",
"select_date": "#restProfileSideBarDtpDayPicker-wrapper", # button[aria-label*="{ }"]
"select_time": "h3[data-test='select-time-header']",
"no_availability": "div._8ye6OVzeOuU- span",
"find_table_button": ".find-table-button", # Example selector for the Find Table button

```

```
"availability_result": ".availability-result", # Example selector for availability results
```

```
"show_next_available_button": "button[data-test='multi-day-availability-button']", # Show  
next available button
```

```
"available_dates": "ul[data-test='time-slots'] > li", # Available dates and times
```

```
}
```

```
}
```

```
@staticmethod
```

```
def get_selectors_for_url(url):
```

```
    for keyword, selectors in Selectors.SELECTORS.items():
```

```
        if keyword in url.lower():
```

```
            return selectors
```

```
    return None # Return None if no matching selectors are found
```

```
--- exportUtils.py ---
```

```
import os
```

```
import pandas as pd
```

```
from datetime import datetime
```

```
class ExportUtils:
```

```
@staticmethod
```

```
def log_to_excel(command, url, result, entered_date=None, entered_time=None):
```

```
    # Determine the file path for the Excel file
```

```
    file_name = f"{command}.xlsx"
```

```
    file_path = os.path.join("ExportedFiles", "excelFiles", file_name)
```

```
# Ensure directory exists

os.makedirs(os.path.dirname(file_path), exist_ok=True)

# Timestamp for current run

timestamp = datetime.now().strftime('%Y-%m-%d %H:%M:%S')

# If date/time not entered, use current timestamp

entered_date = entered_date or datetime.now().strftime('%Y-%m-%d')
entered_time = entered_time or datetime.now().strftime('%H:%M:%S')

# Check if the file exists and create the structure if it doesn't

if not os.path.exists(file_path):

    df = pd.DataFrame(columns=["Timestamp", "Command", "URL", "Result", "Entered Date",
"Entered Time"])

    df.to_excel(file_path, index=False)

# Load existing data from the Excel file

df = pd.read_excel(file_path)

# Append the new row

new_row = {

    "Timestamp": timestamp,

    "Command": command,

    "URL": url,

    "Result": result,

    "Entered Date": entered_date,
```

```
"Entered Time": entered_time  
}
```

```
# Add the new row to the existing data and save it back to Excel  
df = pd.concat([df, pd.DataFrame([new_row])], ignore_index=True)  
df.to_excel(file_path, index=False)
```

```
return f"Data saved to Excel file at {file_path}."
```

```
@staticmethod
```

```
def export_to_html(command, url, result, entered_date=None, entered_time=None):
```

```
    """Export data to HTML format with the same structure as Excel."""
```

```
# Define file path for HTML
```

```
file_name = f"{command}.html"
```

```
file_path = os.path.join("ExportedFiles", "htmlFiles", file_name)
```

```
# Ensure directory exists
```

```
os.makedirs(os.path.dirname(file_path), exist_ok=True)
```

```
# Timestamp for current run
```

```
timestamp = datetime.now().strftime('%Y-%m-%d %H:%M:%S')
```

```
# If date/time not entered, use current timestamp
```

```
entered_date = entered_date or datetime.now().strftime('%Y-%m-%d')
```

```
entered_time = entered_time or datetime.now().strftime('%H:%M:%S')
```

```
# Data row to insert
```

```
new_row = {  
    "Timestamp": timestamp,  
    "Command": command,  
    "URL": url,  
    "Result": result,  
    "Entered Date": entered_date,  
    "Entered Time": entered_time  
}
```

```
# Check if the HTML file exists and append rows
```

```
if os.path.exists(file_path):
```

```
    # Open the file and append rows
```

```
    with open(file_path, "r+", encoding="utf-8") as file:
```

```
        content = file.read()
```

```
        # Look for the closing </table> tag and append new rows before it
```

```
        if "</table>" in content:
```

```
            new_row_html =
```

```
f"<tr><td>{new_row['Timestamp']}td>{new_row['Result']}Time']}
```

```
        content = content.replace("</table>", new_row_html + "</table>")
```

```
        file.seek(0) # Move pointer to the start
```

```
        file.write(content)
```

```
        file.truncate() # Truncate any remaining content
```

```
        file.flush() # Flush the buffer to ensure it's written
```

```
else:
```

```
# If the file doesn't exist, create a new one with table headers
```

```
with open(file_path, "w", encoding="utf-8") as file:
```

```
    html_content = "<html><head><title>Command Data</title></head><body>"
```

```
    html_content += f"<h1>Results for {command}</h1><table border='1'>"
```

```
                                html_content    +=
```

```
"<tr><th>Timestamp</th><th>Command</th><th>URL</th><th>Result</th><th>Entered
```

```
Date</th><th>Entered Time</th></tr>"
```

```
                                html_content    +=
```

```
f"<tr><td>{new_row['Timestamp']}</td><td>{new_row['Command']}</td><td>{new_row['URL']}</td><td>{new_row['Result']}</td><td>{new_row['Entered Date']}</td><td>{new_row['Entered Time']}</td></tr>\n"
```

```
    html_content += "</table></body></html>"
```

```
    file.write(html_content)
```

```
    file.flush() # Ensure content is written to disk
```

```
return f"HTML file saved and updated at {file_path}."
```