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BATCH-27

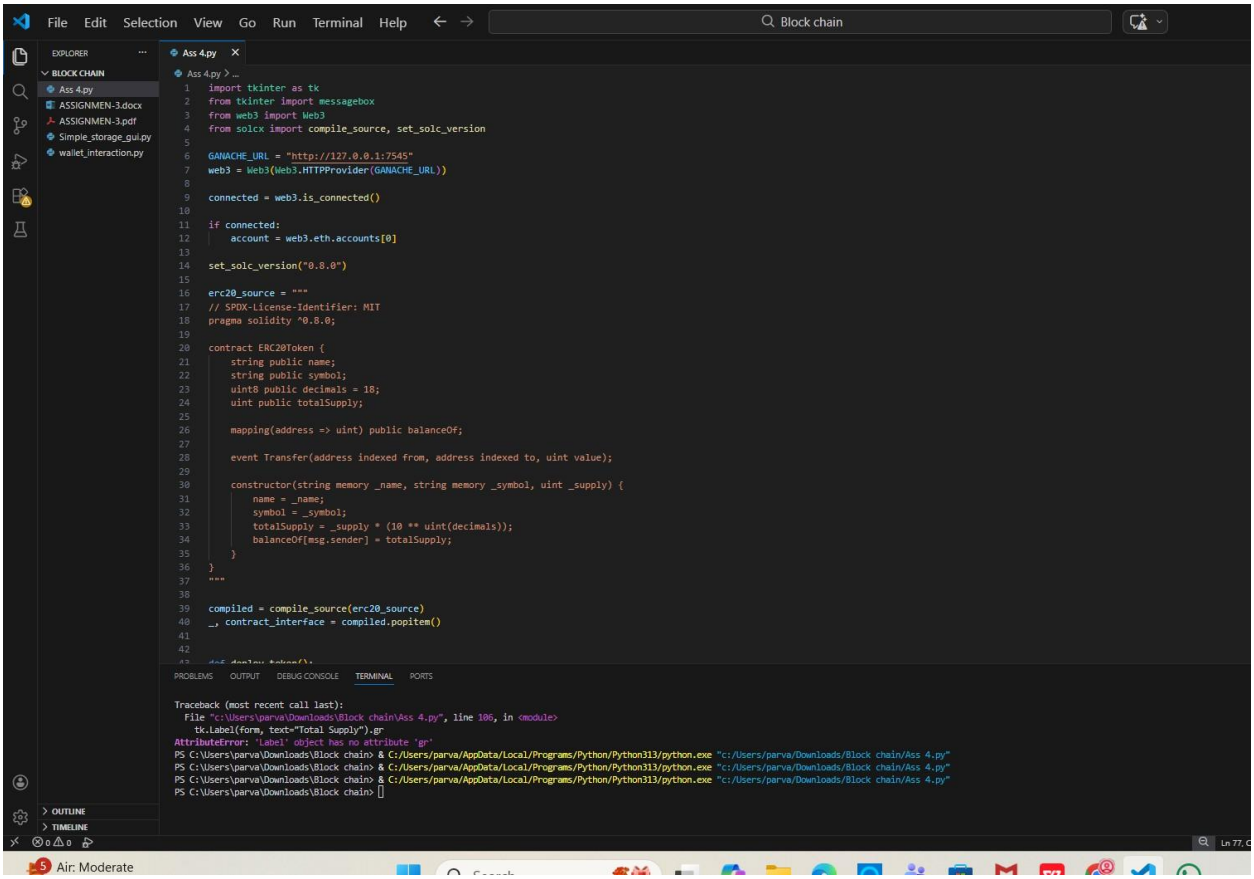
ASSIGNEMENT-04

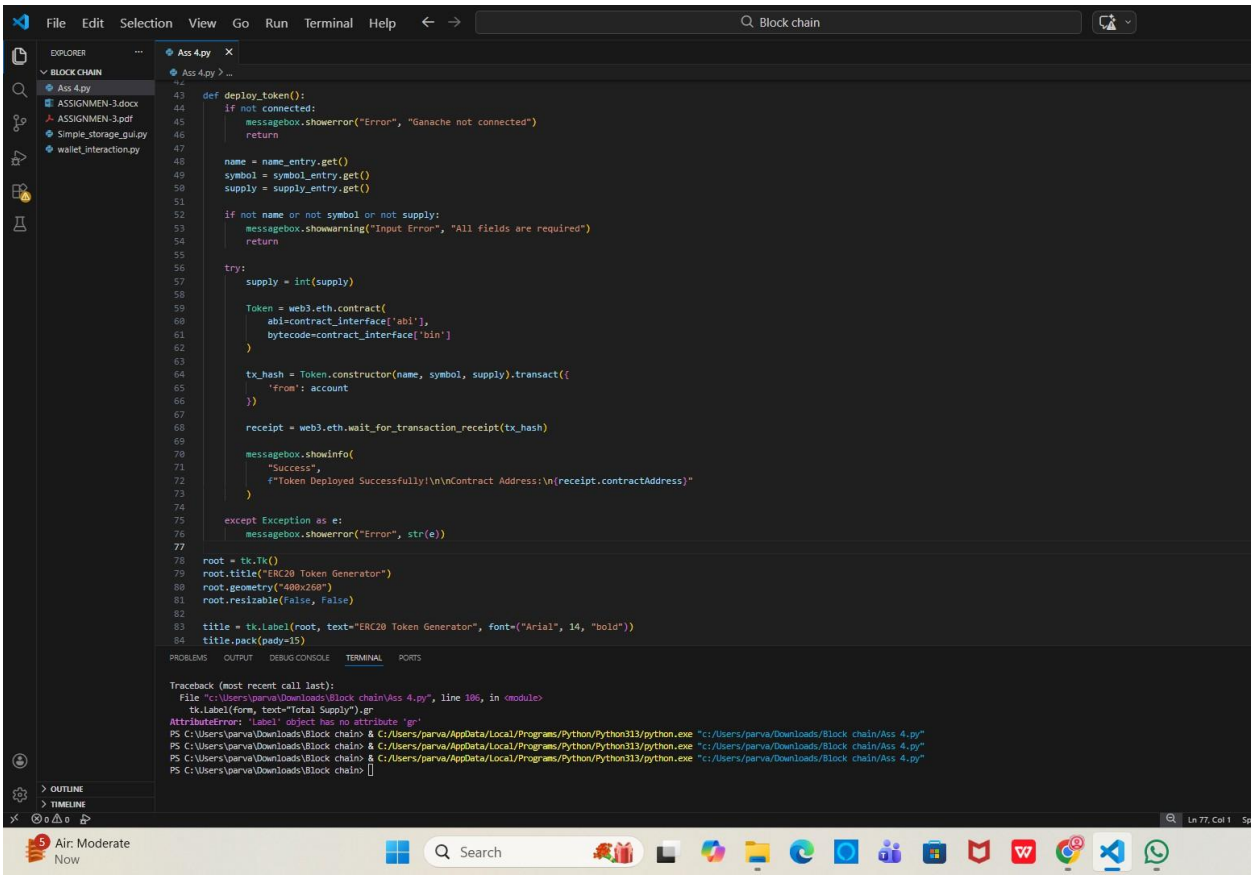
PROBLEM:

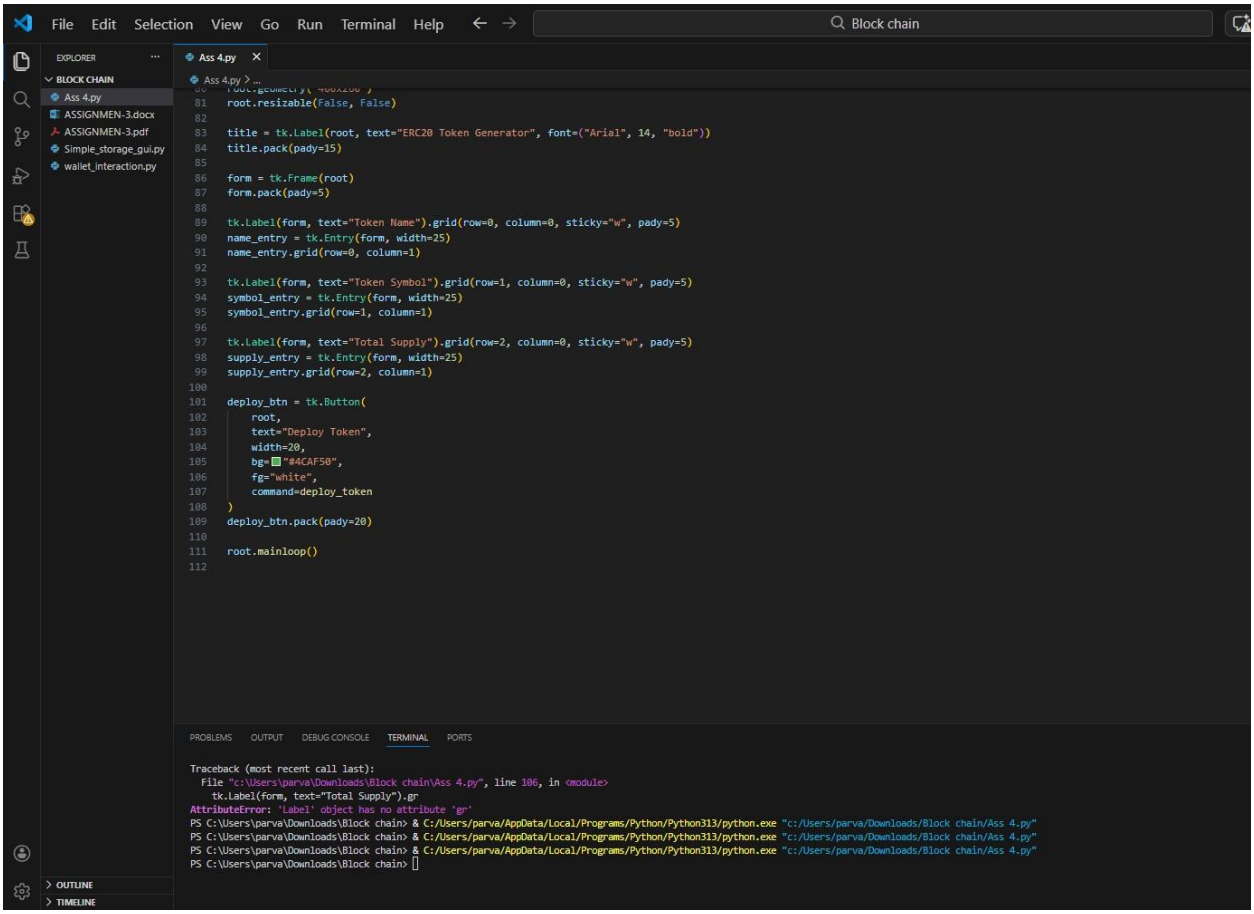
Develop a basic ERC-20 token smart contract using Solidity that allows users to:

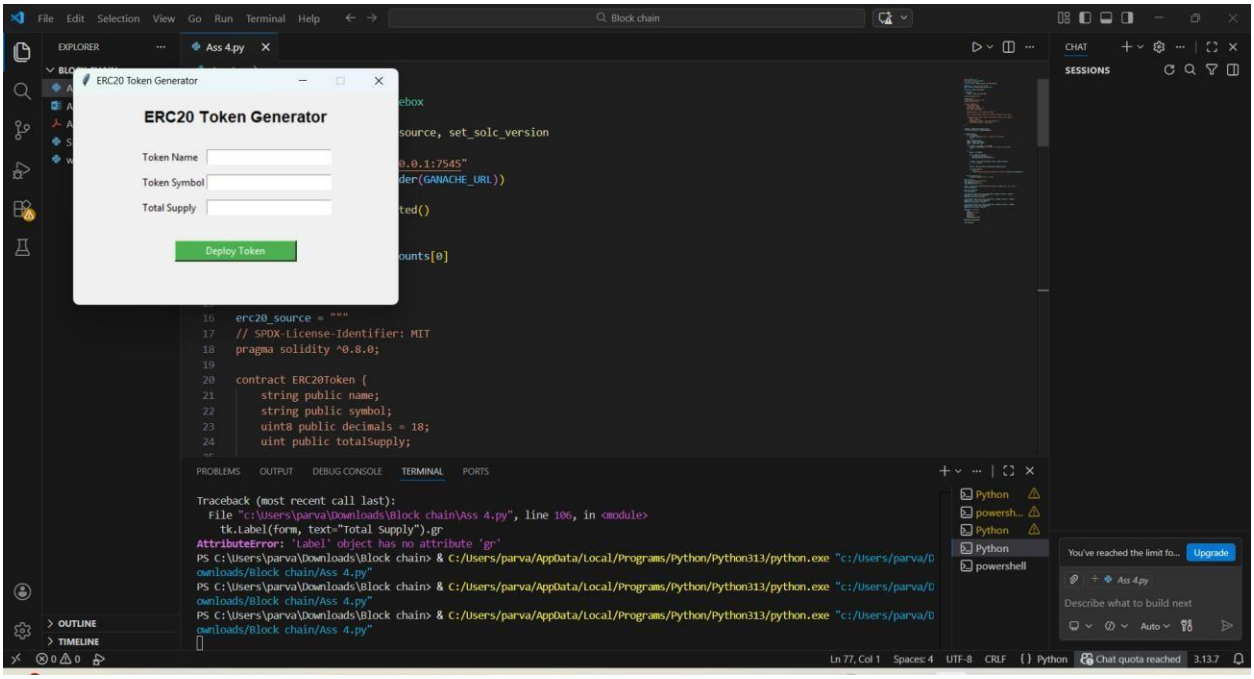
- Define token details such as name, symbol, decimals, and total supply
- Transfer tokens between Ethereum accounts
- Store and manage user token balances
- Emit events to record token transfer activities on the blockchain

This practical helps understand state variables, mappings, constructors, events, and functions in Solidity, as well as the basics of Ethereum token standards.




File Edit Selection View Go Run Terminal Help
Block chain
EXPLORER
BLOCK CHAIN
Ass 4.py
ASSIGNMEN-3.docx
ASSIGNMEN-3.pdf
Simple_storage_gui.py
wallet_interaction.py
Ass 4.py
Ass 4.py > ...
def deploy_token():
if not connected:
messagebox.showerror("Error", "Ganache not connected")
return
name = name_entry.get()
symbol = symbol_entry.get()
supply = supply_entry.get()
if not name or not symbol or not supply:
messagebox.showwarning("Input Error", "All fields are required")
return
try:
supply = int(supply)
Token = web3.eth.contract(
abi=contract_interface['abi'],
bytecode=contract_interface['bin']
)
tx_hash = Token.constructor(name, symbol, supply).transact({
'from': account
})
receipt = web3.eth.wait_for_transaction_receipt(tx_hash)
messagebox.showinfo(
"Success",
f"Token Deployed Successfully!\n\nContract Address:\n{receipt.contractAddress}"
)
except Exception as e:
messagebox.showerror("Error", str(e))
root = tk.Tk()
root.title("ERC20 Token Generator")
root.geometry("400x260")
root.resizable(False, False)
title = tk.Label(root, text="ERC20 Token Generator", font=("Arial", 14, "bold"))
title.pack(pady=15)
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
Traceback (most recent call last):
File "c:\Users\parva\Downloads\Block chain\Ass 4.py", line 106, in <module>
tk.Label(form, text="Total Supply").gr
AttributeError: 'Label' object has no attribute 'gr'
PS C:\Users\parva\Downloads\Block chain> & C:/Users/parva/AppData/Local/Programs/Python/Python313/python.exe "c:/Users/parva/Downloads/Block chain/Ass 4.py"
PS C:\Users\parva\Downloads\Block chain> & C:/Users/parva/AppData/Local/Programs/Python/Python313/python.exe "c:/Users/parva/Downloads/Block chain/Ass 4.py"
PS C:\Users\parva\Downloads\Block chain> & C:/Users/parva/AppData/Local/Programs/Python/Python313/python.exe "c:/Users/parva/Downloads/Block chain/Ass 4.py"
PS C:\Users\parva\Downloads\Block chain>
OUTLINE
TIMELINE
Ln 77, Col 1
Air: Moderate
Now
Search





Observation:

- **State variables** = name, symbol, decimals, totalSupply, balanceOf
- **Constructor** = constructor(uint initialSupply)
- **Token transfer function** = transfer(address to, uint value)
- **Balance storage** = mapping(address => uint) balanceOf
- **Event used** = Transfer(address from, address to, uint value)