Software Craftmanship

Assignment 1

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Course: Btech Cse (Full Stack Development)

Ques1. Write a program to find the S.I. by user entered principle , rate and time in python using functions.

```python
# Define a SimpleInterestCalculator class
class SimpleInterestCalculator:
    def __init__(self, principal, rate, time):
        self.principal = principal
        self.rate = rate
        self.time = time

    def calculate(self):
        # Simple Interest formula: SI = (P * R * T) / 100
        return (self.principal * self.rate * self.time) / 100

    def display_result(self):
        # Calculate the Simple Interest
        si = self.calculate()
        # Display the result
        print(f"The Simple Interest is: ₹{si:.2f}")

# Main function to get input and display the result
def main():
    # Get user input for principal, rate, and time
    principal = float(input("Enter the principal amount: ₹"))
    rate = float(input("Enter the rate of interest: "))
    time = float(input("Enter the time period (in years): "))
# Create a SimpleInterestCalculator object
    calculator = SimpleInterestCalculator(principal, rate, time)

    # Display the result
    calculator.display_result()
# Run the program
if __name__ == "__main__":
    main()
```

OUTPUT

```
C:\Users\Aastha Srivastava\OneDrive\Documents\GitHub\Software-Craftsmanship\Assignment 1>python main.py
Enter the principal amount: ₹200
Enter the rate of interest: 2
Enter the time period (in years): 1
The Simple Interest is: ₹4.00
```

Ques2. Write a program to make a calculator in python using functions?

```python
# Define a Calculator class
class Calculator:
    @staticmethod
    def add(x, y):
        return x + y

    @staticmethod
    def subtract(x, y):
        return x - y

    @staticmethod
    def multiply(x, y):
        return x * y

    @staticmethod
    def divide(x, y):
        if y != 0:
            return x / y
        else:
            return "Error! Division by zero."

    def display_menu(self):
        print("Select operation:")
        print("1. Add")
        print("2. Subtract")
        print("3. Multiply")
        print("4. Divide")

    def perform_operation(self, choice, num1, num2):
        if choice == '1':
            return f"{num1} + {num2} = {self.add(num1, num2)}"
        elif choice == '2':
            return f"{num1} - {num2} = {self.subtract(num1, num2)}"
        elif choice == '3':
            return f"{num1} * {num2} = {self.multiply(num1, num2)}"
        elif choice == '4':
            return f"{num1} / {num2} = {self.divide(num1, num2)}"
```

```
        else:
            return "Invalid input! Please choose a valid operation."

# Main function to drive the calculator program
def main():
    calculator = Calculator()
    calculator.display_menu()

    # Take input from the user
    choice = input("Enter choice (1/2/3/4): ")

    # Check if the input is a valid choice
    if choice in ['1', '2', '3', '4']:
        # Take numbers from the user
        num1 = float(input("Enter first number: "))
        num2 = float(input("Enter second number: "))

        # Perform the operation and display the result
        result = calculator.perform_operation(choice, num1, num2)
        print(result)
    else:
        print("Invalid input! Please choose a valid operation.")

# Run the program
if __name__ == "__main__":
    main()
```

OUTPUT

```
C:\Users\Aastha Srivastava\OneDrive\Documents\GitHub\Software-Craftsmanship\Assignment 1>python in.py
Select operation:
1. Add
2. Subtract
3. Multiply
4. Divide
Enter choice (1/2/3/4): 1
Enter first number: 34
Enter second number: 35
34.0 + 35.0 = 69.0
```
