Name : HIDAYAT ULLAH.
R No : B24F0050AI099.
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LAB TASK 01: Cash Denomination Breakdown (Bank Teller)

Scenario:
A cashier needs to break a customer’s cash amount (integer rupees) into the minimum number of notes using these denominations: 1000, 500, 100, 50, 20, 10, 5, 1. The program should accept an integer amount and print how many notes of each denomination are required.

```
amount = int(input (" enter the cash amount ")) ##3786
print("1000:", amount // 1000)
amount = amount % 1000
print("500:", amount // 500)
amount = amount % 500
print("100:", amount // 100)
amount = amount % 100
print("50:", amount // 50)
amount = amount % 50
print("20:", amount // 20)
amount = amount % 20
print("10:", amount // 10)
amount = amount % 10
print("5:", amount // 5)
amount = amount % 5
print("1:", amount // 1)
```

```
 enter the cash amount 3786
1000: 3
500: 1
100: 2
50: 1
20: 1
10: 1
5: 1
1: 1
```

Descriptions

This program takes a cash amount and breaks it into notes. It shows how many 1000, 500, 100, and other notes are needed.

LAB TASK 02: Temperature Batch: Convert & Average (Data Logger)

Scenario:

A lab sensor recorded three temperature readings in Celsius. The lab assistant needs a tiny script to convert each reading to Fahrenheit and compute the average temperature in both Celsius and Fahrenheit.

Formulas:

• Fahrenheit = Celsius × 9/5 + 32 • Average = (t1 + t2 + t3) / 3

Hints:

• Use float(input(...)). • Keep intermediate values in meaningful variable names. • Format numeric output with sensible precision if needed.

```
t1 = float(input("Enter first temperature in Celsius: "))
t2 = float(input("Enter second temperature in Celsius: "))
t3 = float(input("Enter third temperature in Celsius: "))
#Convert to Fahrenheit
f1 = t1 * 9/5 + 32
f2 = t2 * 9/5 + 32
f3 = t3 * 9/5 + 32
#Calculate averages
avg_celsius = (t1 + t2 + t3) / 3
avg_fahrenheit = (f1 + f2 + f3) / 3

print("\nCelsius readings:", t1, ",", t2, ",", t3)
print("Fahrenheit readings:", f1, ",", f2, ",", f3)
print("Average Celsius:", round(avg_celsius, 1))
print("Average Fahrenheit:", round(avg_fahrenheit, 1))
```

```
Enter first temperature in Celsius: 23
Enter second temperature in Celsius: 34
Enter third temperature in Celsius: 65

Celsius readings: 23.0 , 34.0 , 65.0
Fahrenheit readings: 73.4 , 93.2 , 149.0
Average Celsius: 40.7
Average Fahrenheit: 105.2
```

Description:

This program takes 3 temperatures in Celsius, changes them into Fahrenheit, and then finds the average in both Celsius and Fahrenheit.

LAB TASK 3: Compound Interest (Savings Planner) BONUS TASK!

Scenario:

A student wants to know how much their savings will grow if interest is compounded annually. Write a program that computes the future value using annual compound interest.

Formula:

A = P * (1 + r/100) ** t.
• P = principal (initial amount)
• r = annual interest rate (percent).
• t = time in years.
• A = amount after t years.

Hints:

• Use float() for money and rates.
• Use ** for exponent; ensure you compute r/100 correctly.

```
p = float(input("principal: "))
r = float(input("rate (%) : "))
t = int(input("years: "))
a = p * (1 + r/100) ** t
interest = a - p
print(f"Amount after {t}: years = {a}")
print(f"inerest earnd = {interest}")
```

```
principal: 10000
rate (%) : 5
years: 3
Amount after 3: years = 11576.250000000002
inerest earnd = 1576.2500000000018
```

Description:

This program takes money, rate, and years, then calculates how much it will become with compound interest. It also shows how much extra interest is earned.