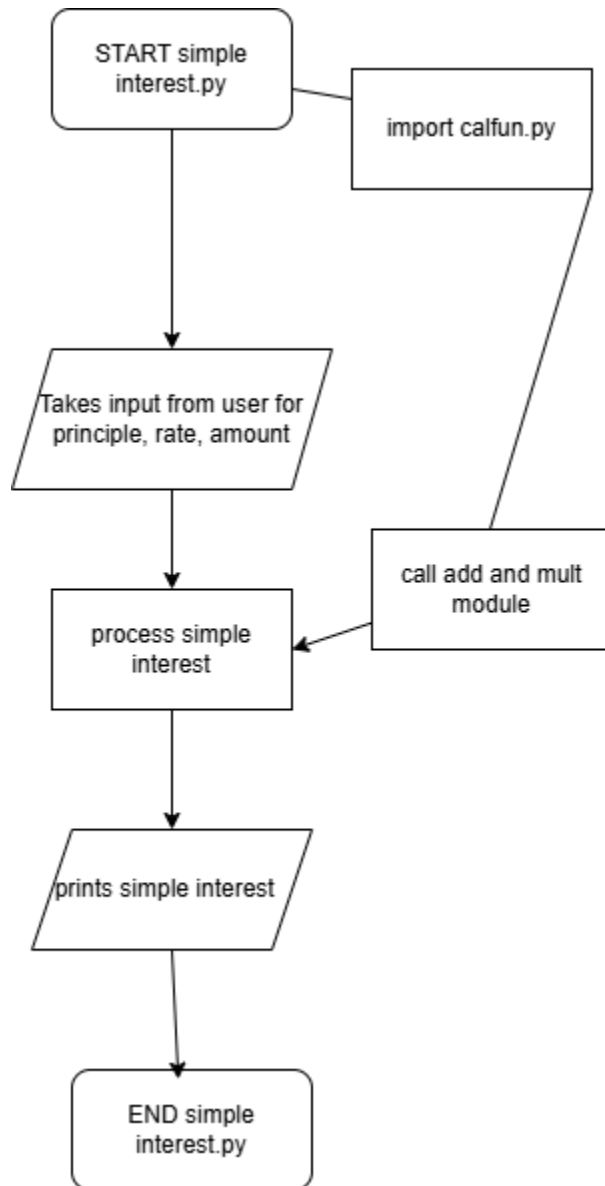


Simple Interest Algorithm

ALGORITHM: SimpleInterest

1. START
2. Import `add` function from `add.py`
3. Import `mult` function from `mult.py`
4. INPUT money (m)
5. INPUT rate (r), convert to decimal: $r = r / 100$
6. INPUT time (t)
7. PRINT "--- Steps ---"
8. CALCULATE `rate_time = mult(r, t)`
9. PRINT "1. rate × time:", r, "×", t, "=", rate_time
10. CALCULATE `one_plus = add(1, rate_time)`
11. PRINT "2. 1 + result:", 1, "+", rate_time, "=", one_plus
12. CALCULATE `si = mult(m, one_plus)`
13. PRINT "3. money × result:", m, "×", one_plus, "=", si
14. PRINT "Interest: ", si (2 decimal places)
15. STOP

FLOWCHART



Level 0: Main Program Logic (Process Flow)

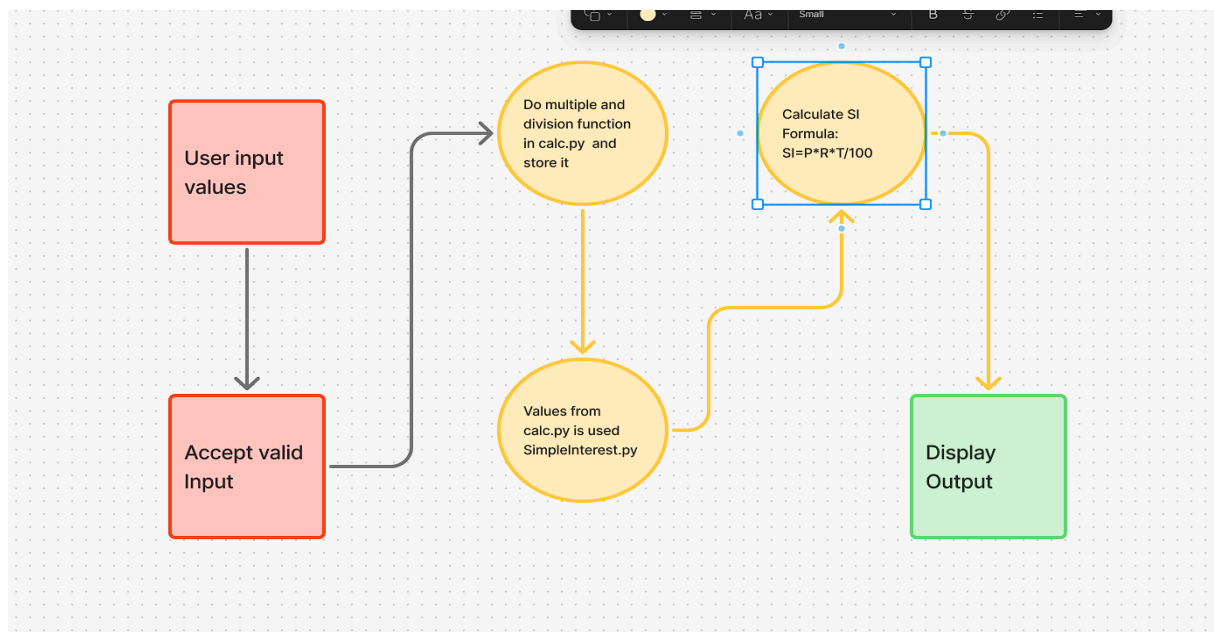
1. **Start:** Initialize the application.
2. **Package Import:** Load `calculate_si` from the external module.
3. **Data Input:** Receive Principal (P), Rate (R), and Time (T) from the user.
4. **Data Transmission:** Pass P, R, T to the module function.
5. **Data Output:** Receive the result and display it to the user.
6. **Stop.**

Level 1: Module Logic (Data Processing)

1. **Reception:** Accept the data packet (P, R, T).
2. **Computation:** Execute $SI = (P \times R \times T) / 100$.
3. **Return:** Send the calculated SI back to the calling script.

Key DFD Components to Draw:

- **External Entity (Square):** The User (providing inputs).
- **Process (Circle/Rounded Rectangle):** "Calculate Interest" and "Display Result."
- **Data Store (Open Rectangle):** Your `calculator` module.
- **Data Flow (Arrows):** Labeled arrows like "Input Data" and "Calculated Interest."



```
# simple_interest.py
from calfun import add, sub, mul, div

def calculate_simple_interest(principal, rate, time):
    return mul(principal, mul(rate, time)) / 100

def main():
    print("Simple Interest Calculator")
    principal = float(input("Enter principal amount: "))
    rate = float(input("Enter rate of interest (%): "))
    time = float(input("Enter time period (years): "))

    simple_interest = calculate_simple_interest(principal, rate, time)
    print(f"Simple Interest: {simple_interest:.2f}")
    total_amount = add(principal, simple_interest)
    print(f"Total Amount: {total_amount:.2f}")

if __name__ == "__main__":
    main()
```