**To implement a change machine which the user can enter the money and the machine counts the change.**

IMPLEMENTATION:

This machine has been implemented using Python. The program asks from the user the cost and the tender. If cost is greater than tender, then we consider it as an error and prompt the user to input cost and tender again. This continues until the user has inputted valid values for cost and tender. Tax is calculated as 0.5\*cost and the change is calculated by subtracting (cost+tax) from the tender.The change is calculated using the following formulas:

twenties = change /20

tens = (change-20\*twenties)/10)

fives = (change%10/5)

ones = (change%5)

cents = change-int(change)

quarters = cents/0.25

dimes =((cents-quarters\*0.25)/0.10)

nickels = ((cents-quarters\*0.25-dimes\*0.1)/0.05)

pennies =((cents%0.05/0.01))

The values of change have been all type casted to int.Though we keep cost, tender and tax as float values.

Having calculated the change, we print out the relevant information to the user ie. the tax,change,twenties,tens,fives,ones,cents,quarters,dimes,nickels and pennies.

EXAMPLE:

What is the cost?

Input:200

What is the cash tendered?

Input: 500

OUTPUT:

Tax: 10.0

The change including tax deduction: 290.0

Twentie dollar bill: 14

Ten dollar bill: 1

Five dollar bill: 0

One dollar bill: 0

Quarters: 0

Dimes: 0

Nickels:0

Pennies:0.0