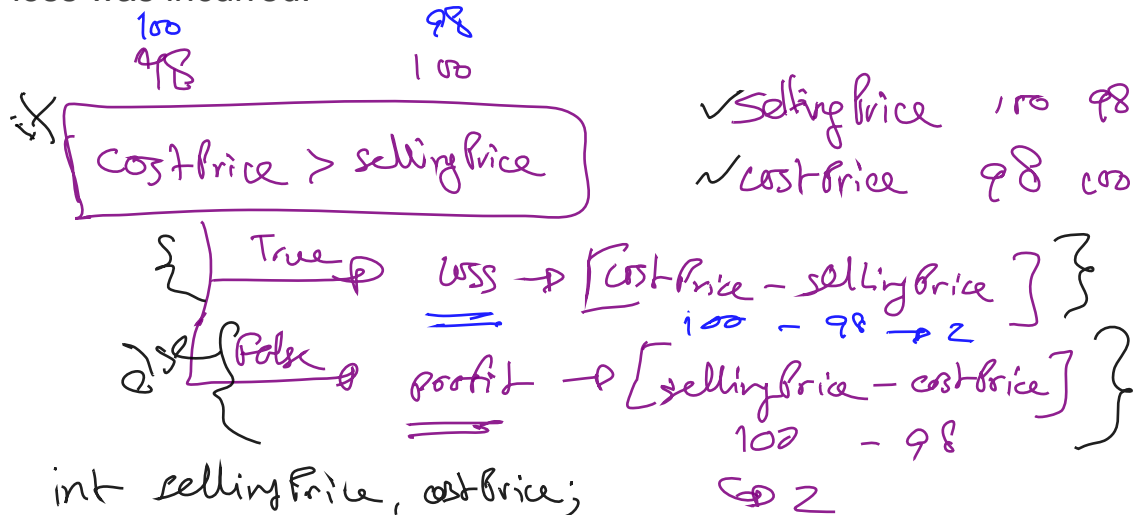1. If the cost price and the selling price of an item are input through the keyboard, write a program to determine whether the seller has made a profit or incurred a loss. Also, determine how much profit was made or loss was incurred.

```
           100                98
           98            100
if
  [ costPrice > sellingPrice ]              ✓selling Price   100   98
                                            ✗costPrice       98    100
      {   True
                 loss → [ costPrice - sellingPrice ] }
                                   100 - 98 → 2
      else  False
              profit → [ sellingPrice - costPrice ] }
                                   100   - 98
int selling Price, costPrice;           ⊕ 2
cin >> sellingPrice;
cin >> costPrice

if ( costPrice > selling Price )
{
        [ Loss ]

        [ costPrice - sellingPrice ]
}
else
{
        [ profit ]

        [ sellingPrice - costPrice ]
}
```
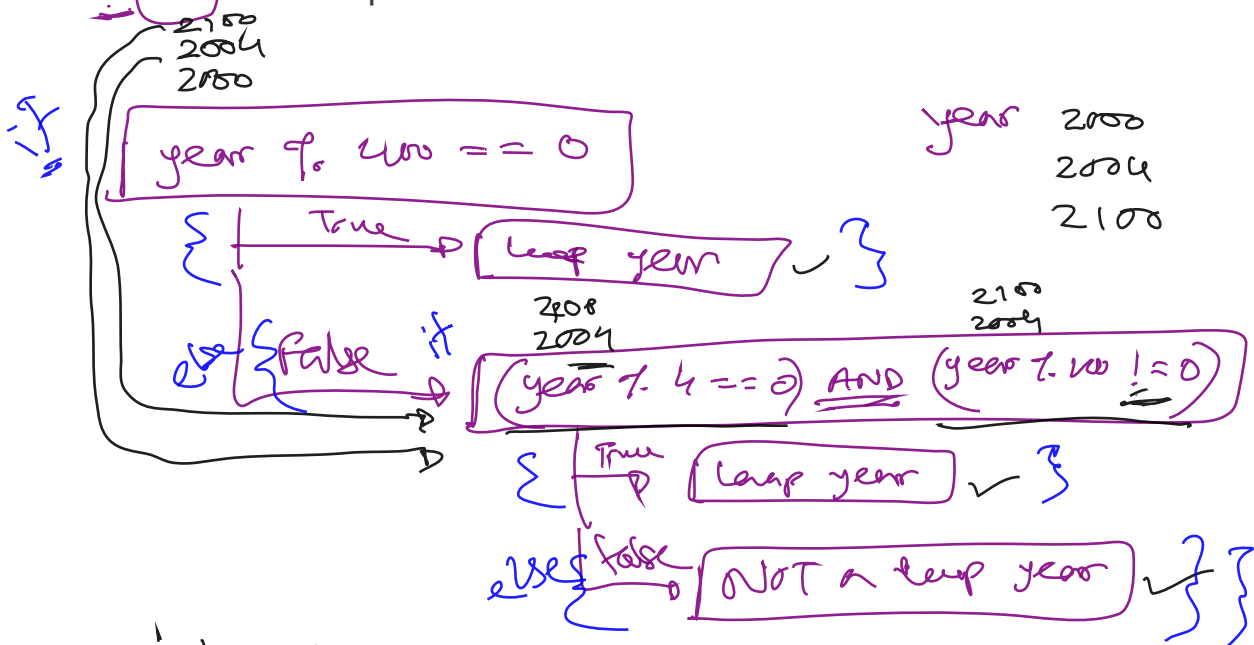
2. Any year is input through the keyboard. Write a program to determine whether the year is a leap year or not.
Logic: (1) The year is multiple of 400.; and (2) The year is multiple of 4 and not multiple of 100.

2150
2004
2050

if

year % 400 == 0

True → Leap year ✓

else false it

(year % 4 == 0) AND (year % 100 != 0)

True → Leap year ✓

else false → NOT a leap year

year 2000
2004
2100

2408
2004

2100
2004

```
int year;
if ( leap year % 400 == 0)
{

      leap year

}
else
{

      if ((leap year % 4 == 0) && (leap year % 100 != 0))
      {
            leap year
      }
      else
      {
            NOT a leap year
      }
}
```
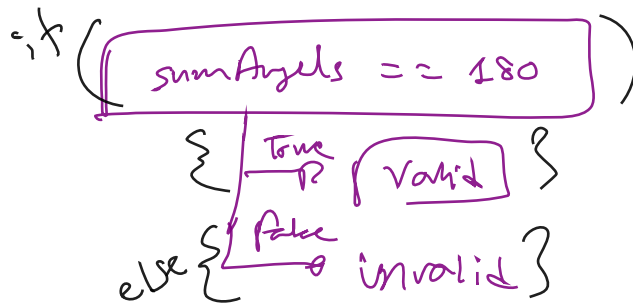
3. Write a program to check whether a triangle is valid or not, when the three angles of the triangle are entered through the keyboard. Please note that a triangle is valid if the sum of all three angles is equal to 180 degrees.
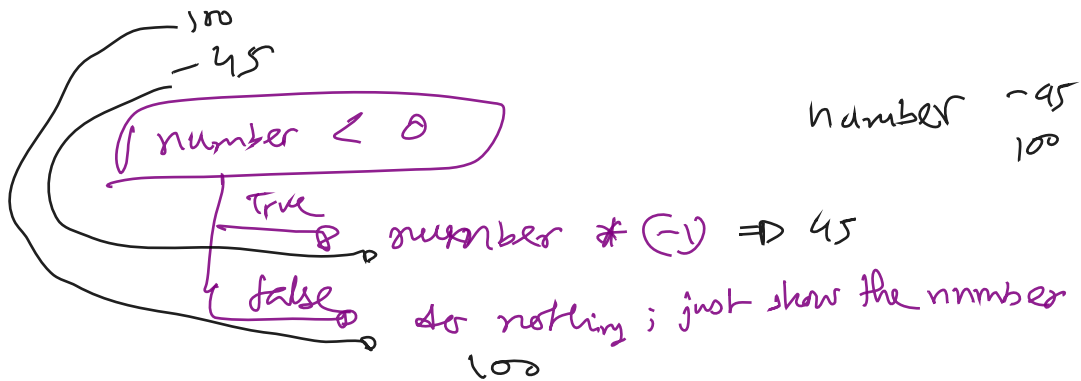
[angle ≠ 0]

sumAngles ← angel 1 + angel 2 + angel 3

angel 1
angel 2
angel 3

it (sumAngles == 180)
{
  True
  ⟶ Valid
}
else {
  False
  ⟶ invalid
}

$*(-1)$

$|-45| \rightarrow 45$

$|100| \rightarrow 100$

4. Find the absolute value of a number entered through the keyboard.

100
-45

number < 0

number   -95
         100

True
number $* (-1) \Rightarrow 45$

false
do nothing ; just show the number
100

5. If a three-digit number is an input through the keyboard, write a program to reverse the number and to determine whether or not the original and the reversed numbers are equal.

create a copy of
the 'input variable'
to check w/ the
'reversed Number'
variable.

inputNumber Copy = inputNumber

inputNumber   369
reversedNumber 963

//reversescopn

reversed Number = [   ]

if (inputNumberCopy ==
        reversed Number)

&

[equal]

}

else

{

[not equal]

}