In [3]:

```
import sys

def main():
    locks, stocks, barrels, t_sales, flag = 0, 0, 0, 0, 0
    commission = 0.0

    locks = int(input("Enter the total number of locks: "))
    if (locks <= 0) or (locks > 70):
        flag = 1

    stocks = int(input("Enter the total number of stocks: "))
    if (stocks <= 0) or (stocks > 80):
        flag = 1

    barrels = int(input("Enter the total number of barrels: "))
    if (barrels <= 0) or (barrels > 90):
        flag = 1

    if flag == 1:
        print("Out of range")
        sys.exit(0)

    t_sales = (locks * 45) + (stocks * 30) + (barrels * 25)
    if t_sales <= 1000:
        commission = 0.10 * t_sales
    elif t_sales < 1800:
        commission = 0.10 * 1000
        commission += 0.15 * (t_sales - 1000)
    else:
        commission = 0.10 * 1000
        commission += 0.15 * 800
        commission += 0.20 * (t_sales - 1800)

    print(f"The total sales is {t_sales}\nThe commission is {commission}")

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

```
Enter the total number of locks:  30
Enter the total number of stocks:  40
Enter the total number of barrels:  50
The total sales is 3800
The commission is 620.0
```

In [ ]:

```python
import calendar

def check(day, month):
    if (month in [4, 6, 9, 11]) and day == 31:
        return 1
    else:
        return 0

def isleap(year):
    if (year % 4 == 0 and year % 100 != 0) or year % 400 == 0:
        return 1
    else:
        return 0

def main():
    while True:
        flag = 'y'
        print("\nEnter today's date in the form of dd mm yyyy")
        day, month, year = map(int, input().split())
        tomm_month = month
        tomm_year = year

        if day < 1 or day > 31:
            print("Invalid day. Value of day, not in the range 1...31")
            flag = 'n'
        if month < 1 or month > 12:
            print("Invalid month. Value of month, not in the range 1....12")
            flag = 'n'
        elif check(day, month):
            print("Invalid day. Value of day, not in the range day<=30")
            flag = 'n'

        if year <= 1812 or year > 2012:
            print("Invalid Year. Value of year, not in the range 1812.......2012")
            flag = 'n'
```

```
    if month == 2:
        if isleap(year) and day > 29:
            print("Invalid date input for leap year")
            flag = 'n'
        elif not isleap(year) and day > 28:
            print("Invalid date input for not a leap year")
            flag = 'n'

    if flag == 'n':
        continue

    if month in [1, 3, 5, 7, 8, 10]:
        if day < 31:
            tomm_day = day + 1
        else:
            tomm_day = 1
            tomm_month = month + 1
    elif month in [4, 6, 9, 11]:
        if day < 30:
            tomm_day = day + 1
        else:
            tomm_day = 1
            tomm_month = month + 1
    elif month == 12:
        if day < 31:
            tomm_day = day + 1
        else:
            tomm_day = 1
            tomm_month = 1
            if year == 2012:
                print("The next day is out of boundary value of year")
                tomm_year = year + 1
            else:
                tomm_year = year + 1
    elif month == 2:
        if day < 28:
            tomm_day = day + 1
        elif isleap(year) and day == 28:
            tomm_day = day + 1
        elif day == 28 or day == 29:
```

```
                tomm_day = 1
                tomm_month = 3

        print(f"Next day is : {tomm_day} {tomm_month} {tomm_year}")
        break

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

```
Enter today's date in the form of dd mm yyyy
 15 -1 1912
Invalid month. Value of month, not in the range 1....12

Enter today's date in the form of dd mm yyyy
 -1 6 1912
Invalid day. Value of day, not in the range 1...31

Enter today's date in the form of dd mm yyyy
 15 6 1811
Invalid Year. Value of year, not in the range 1812.......2012

Enter today's date in the form of dd mm yyyy
 -1 -1 1912
Invalid day. Value of day, not in the range 1...31
Invalid month. Value of month, not in the range 1....12

Enter today's date in the form of dd mm yyyy
```

In [2]:

```
import sys

def binary_search():
    a = []
    n = int(input("Enter the value of n:\n"))
    if n > 0:
        print(f"Enter {n} elements in ASCENDING order")
        a = [int(input()) for _ in range(n)]
        key = int(input("Enter the key element to be searched\n"))
        low = 0
        high = n - 1
        while low <= high:
            mid = (low + high) // 2
```

```
            if a[mid] == key:
                print(f"Successful search\n Element found at Location {mid + 1}")
                return
            elif a[mid] < key:
                low = mid + 1
            else:
                high = mid - 1

        print("Key Element not found")
    else:
        print("Wrong input")

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

```
Enter the value of n:
 5
Enter 5 elements in ASCENDING order
 10
 20
 30
 40
 50
Enter the key element to be searched
 20
Successful search
 Element found at Location 2
```

In [1]:

```
import sys

a, b, c = map(int, input("Enter three sides of the triangle: ").split())

if a > 10 or b > 10 or c > 10:
    print("Out of range")
    sys.exit(0)

if a < b + c and b < a + c and c < a + b:
    if a == b == c:
        print("Equilateral triangle")
    elif a == b != c or a!= b == c or a == c!=b:
        print("Isosceles triangle")
```

```
    else:
        print("Scalene triangle")
else:
    print("Invalid input")
```

```
Enter three sides of the triangle:  1 2 2
Isosceles triangle
```

In [5]:

```
import datetime

def next_date(year, month, day):
    try:
        date = datetime.date(year, month, day)
        next_day = date + datetime.timedelta(days=1)

        if next_day.year > 2012:
            return "Out of year range"

        return next_day
    except ValueError as e:
        return str(e)

def main():
    try:
        year = int(input("Enter the year (1812-2012): "))
        if year < 1812 or year > 2012:
            print("Year must be between 1812 and 2012.")
            return

        month = int(input("Enter the month: "))
        day = int(input("Enter the day: "))

        next_day = next_date(year, month, day)
        print("The next date is:", next_day)
    except ValueError:
        print("Invalid input. Please enter valid numbers for year, month, and day.")

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

```
The next date is: Out of year range
```

In [11]:
```python
import datetime

def next_date(date_str):
    try:
        date = datetime.datetime.strptime(date_str, "%d-%m-%Y").date()
        if not (1912 <= date.year <= 2012):
            return "Year must be between 1912 and 2012."
        next_day = date + datetime.timedelta(days=1)
        return next_day.strftime("%d-%m-%Y")
    except ValueError as e:
        return "Invalid date format. Please enter the date in DD-MM-YYYY format."

def main():
    date_str = input("Enter the date (DD-MM-YYYY): ")
    next_day = next_date(date_str)
    print("The next date is:", next_day)

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

```
The next date is: 13-04-2002
```

In [ ]: