set operation

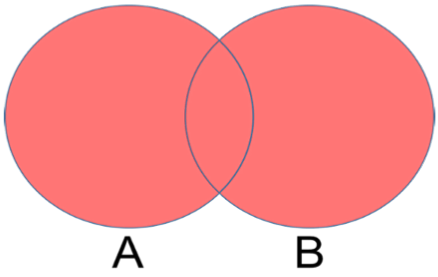
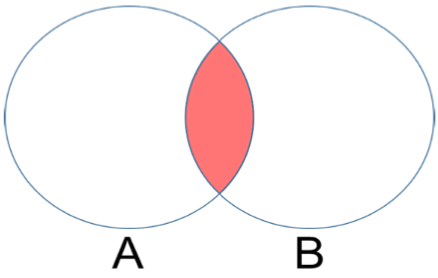
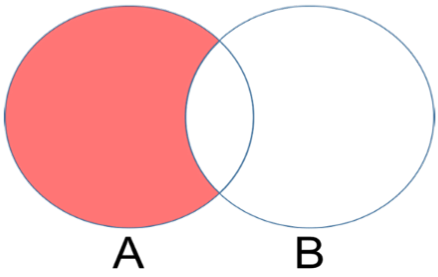
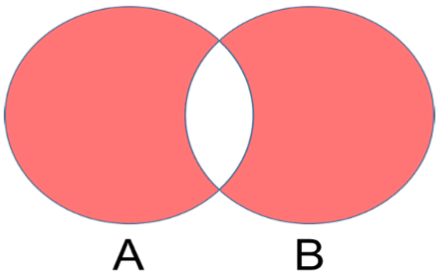
In [35]:
```
import matplotlib.pyplot as plt
```

In [36]:
```
from PIL import Image # python imaging library
```

In [40]:
```
OperationImage1 = Image.open(r'C:\Users\MGAUTAM\OneDrive - United Nations\Data Scie
```

In [41]:
```
OperationImage1
```

Out[41]:

Set Operation	Venn Diagram	Interpretation
Union		$A \cup B$, is the set of all values that are a member of A, or B, or both.
Intersection		$A \cap B$, is the set of all values that are members of both A and B.
Difference		$A \setminus B$, is the set of all values of A that are not members of B
Symmetric Difference		$A \triangle B$, is the set of all values which are in one of the sets, but not both.

In [1]:
```
a = {1,2,3,4,5}
b = {4,5,6,7,8}
c = {8,9,10}
```

In [3]:
```
a.union(b)
```

Out[3]:
```
{1, 2, 3, 4, 5, 6, 7, 8}
```

In [23]:
```
b.union(a)
```

Out[23]: {1, 2, 3, 4, 5, 6, 7}

In [27]:
```
print (a)
print (b)
print (c)
```

```
{1, 2, 3, 4, 5}
{4, 5, 6, 7}
{8, 9, 10}
```

In [28]:
```
a.union(b)
```

Out[28]: {1, 2, 3, 4, 5, 6, 7}

In [29]:
```
a.union(c)
```

Out[29]: {1, 2, 3, 4, 5, 8, 9, 10}

In [30]:
```
b.union(c)
```

Out[30]: {4, 5, 6, 7, 8, 9, 10}

In [31]:
```
a|b
```

Out[31]: {1, 2, 3, 4, 5, 6, 7}

In [32]:
```
b|c
```

Out[32]: {4, 5, 6, 7, 8, 9, 10}

In [33]:
```
a|b
```

Out[33]: {1, 2, 3, 4, 5, 6, 7}

In [34]:
```
b|c
```

Out[34]: {4, 5, 6, 7, 8, 9, 10}

In [4]:
```
a.union(b,c)
```

Out[4]: {1, 2, 3, 4, 5, 6, 7, 8, 9, 10}

In [5]:
```
a | b
```

Out[5]: {1, 2, 3, 4, 5, 6, 7, 8}

In [6]:
```
a | b | c
```

Out[6]: {1, 2, 3, 4, 5, 6, 7, 8, 9, 10}

In [7]:
```
print(a)
print(b)
print(c)
```

```
{1, 2, 3, 4, 5}
{4, 5, 6, 7, 8}
{8, 9, 10}
```

In [8]:
```
a.intersection(b)
```

Out[8]:
```
{4, 5}
```

In [9]:
```
a.intersection(c)
```

Out[9]:
```
set()
```

In [10]:
```
a & b
```

Out[10]:
```
{4, 5}
```

In [11]:
```
print(a)
print(b)
print(c)
```

```
{1, 2, 3, 4, 5}
{4, 5, 6, 7, 8}
{8, 9, 10}
```

In [12]:
```
a.difference(b)
```

Out[12]:
```
{1, 2, 3}
```

In [13]:
```
b.difference(a)
```

Out[13]:
```
{6, 7, 8}
```

In [14]:
```
b-c
```

Out[14]:
```
{4, 5, 6, 7}
```

In [15]:
```
c-b
```

Out[15]:
```
{9, 10}
```

In [16]:
```
a-c
```

Out[16]:
```
{1, 2, 3, 4, 5}
```

In [17]:
```
print(a)
print(b)
print(c)
```

```
{1, 2, 3, 4, 5}
{4, 5, 6, 7, 8}
{8, 9, 10}
```

In [18]:
```
b.difference_update(c)
```

In [19]:
```
b
```

Out[19]:
```
{4, 5, 6, 7}
```

In [20]:
```
print(a)
print(b)
print(c)
```

```
{1, 2, 3, 4, 5}
{4, 5, 6, 7}
{8, 9, 10}
```

In [21]:
```
a.symmetric_difference(b)
```

Out[21]:
```
{1, 2, 3, 6, 7}
```

In [22]:
```
a^b
```

Out[22]:
```
{1, 2, 3, 6, 7}
```

superset, subset , disjoint

In [ ]:

In [ ]:

In [ ]: