

Sheet 2

Convert the following if-else statement to their equivalent short hand if else

Question 1:

```
a=500
b=300
if a==b:
    print('a=b')
elif a>50:
    print('a>50 & a!=b')
else:
    print('a<=50 & a!=b')
```

Question 2:

```
i = 10
if i < 15:
    print("i is less than 15")
```

Question 3:

```
i = 10
if i < 15:
    print(True)
else:
    print(False)
```

Convert the following loops to its list comprehension form:

Question 4:

```
x=[1, 2, 3, 5, 6]
y=[]
for i in range(len(x)):
    y[i:]=[x[i]]
print(y)
```

Question 5:

```
x=[1, 2, 3, 5, 6]
y=['a', 'b', 'c', 'd', 'e']
z=[]
for i in range(len(x)):
    for j in range(len(y)):
        if i==j:
            z[i:]=[(x[i], y[j])]
print(z)
```

Question 6:

```
x=[1, 2, 3, 5, 6]
y=['a', 'b', 'c', 'd', 'e']
z=[]
k=0
for i in range(len(x)):
    for j in range(len(y)):
        if i==j:
            z[k:]=[(x[i], y[j])]
        else:
            z[k:]=[(y[j], x[i])]
        k=k+1
print(z)
```

Question 7:

```
x=[1, 2, 3, 5, 6]
y=['a', 'b', 'c', 'd', 'e']
z=[]
k=0
for i in range(len(x)):
    for j in range(len(y)):
        if i==j:
            z[k:]=[(x[i], y[j])]
        elif i==2:
            z[k:]=[(2, 2)]
        else:
            z[k:]=[(y[j], x[i])]
        k=k+1
print(z)
```

Question 8:

```
x=[[1, 2, 3], [4, 5, 6], [7, 8, 9], [10, 11, 12]]
y=[]
for i in range(len(x)):
    z=[]
    for j in range(len(x[i])):
        z[j:]=[x[i][j]]
    y[i:]=[z]
print(y)
```

What is the output of the following:

Question 9:

```
x=[1, 2, 3, 5, 6]
y=[x[i] for i in range(len(x))]

print(y)
```

Question 10:

```
x=[1, 2, 3, 5, 6]
y=['a', 'b', 'c', 'd', 'e']
z=[(x[i], y[j]) for i in range(len(x)) for j in range(len(y)) if i==j]

print(z)
```