# Solution for Question set 3

### *1. Solution:*

```
class Person(object):
 def getGender( self ):
 return "Unknown"
class Male( Person ):
 def getGender( self ):
 return "Male"
class Female( Person ):
 def getGender( self ):
 return "Female"
aMale = Male()
aFemale= Female()
print aMale.getGender()
print aFemale.getGender()
```

### *2. Solution*

```
dic = { }
s=raw_input()
for s in s:
 dic[s] = dic.get(s,0)+1
print '\n'.join(['%s,%s' % (k, v) for k, v in dic.items()])
```

### 3. Solution:

```
s=raw_input()
s = s[::-1]
print s
```

### 4. Solution:

```
s=raw_input()
s = s[::2]
print s
```

### 5. Solution:

```
def solve(numheads,numlegs):
```

```python
ns='No solutions!'
for i in range(numheads+1):
j=numheads-i
if 2*i+4*j==numlegs:
return i,j
return ns,ns
numheads=35
numlegs=94
solutions=solve(numheads,numlegs)
print (solutions)
```

**6. Solution:**

```python
def removeDuplicate( li ):
newli=[]
seen = set()
for item in li:
if item not in seen:
seen.add( item )
newli.append(item)
return newli
li=[12,24,35,24,88,120,155,88,120,155]
print (removeDuplicate(li))
```

**7. Solution:**

```python
set1=set([1,3,6,78,35,55])
set2=set([12,24,35,24,88,120,155])
set1 &= set2
li=list(set1)
print (li)
```

8. **Solution**:

```python
subjects=["I", "You"]
verbs=["Play", "Love"]
objects=["Hockey","Football"]
for i in range(len(subjects)):
```

```
for j in range(len(verbs)):
for k in range(len(objects)):
sentence = "%s %s %s." % (subjects[i], verbs[j], objects[k])
print (sentence)
```

### 9. Solution:

```
import math
def bin_search(li, element):
 bottom = 0
 top = len(li)-1
 index = -1
 while top>=bottom and index==-1:
 mid = int(math.floor((top+bottom)/2.0))
 if li[mid]==element:
 index = mid
 elif li[mid]>element:
 top = mid-1
 else:
 bottom = mid+1
 return index
li=[2,5,7,9,11,17,222]
print bin_search(li,11)
print bin_search(li,12)
```