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**Discrete Structures Assignment**

**Assignment #2**

**Coded in Python 3.6**

## STEP 1: Constructing Clauses corresponding to the premises

#> for implies

#- for negation

#^ for conjunction

#V for disjunction

```
premises= "-p^q.r!p.-r!s.r!s.s!t.t"
```

# splits at space

```
premises=premises.split(' ')
```

```
clauses=[]
```

```
for i in range(len (premises)):
```

```
    premis=premises[i]
```

```
    premis=premis.split('!')
```

```
    if (len(premis)==1):
```

```
        premis=premis[0].split('^')
```

```
        if(len(premis)!=1):
```

```
            clauses.append(premis[0])
```

```
            clauses.append(premis[1])
```

```
        elif(len(premis)==1):
```

```
            clauses.append(premis[0])
```

```
        ##
```

```
    elif (len(premis)!=1):
```

```
        if premis[0][0] == '-':
```

```
            premis[0]=premis[0][1]
```

```
        else:
```

```
    premis[0] = '-' + premis[0]
    clauses.append(premis[0] + 'v' + premis[1] )
```

```
    #clauses[-1]
    # clauses.append('-'+premis[0]+'^'+ '-' +premis[1]
```

```
if (premis[-1] == premis[i]): #the last index i.e. the conclusion
```

```
    premis=clauses[-1]
    premis=premis.split('v')
    if (len(premis)==1):
        premis=premis[0].split('^')
        if(len(premis)!=1):
            clauses[-1]=(premis[0])
            clauses[-1]=(premis[1])
        else:
            if(premis[0][0]=='-'):
                clauses[-1]=(premis[0][1])
            else:
                clauses[-1]='-' +premis[0])
```

```
elif (len(premis)!=1):
    if premis[0][0] == '-':
        premis[0]=premis[0][1]
    else:
        premis[0] = '-' +premis[0]
```

```
if premis[1][0] == '-':
    premis[1]=premis[1][1]
```

else:

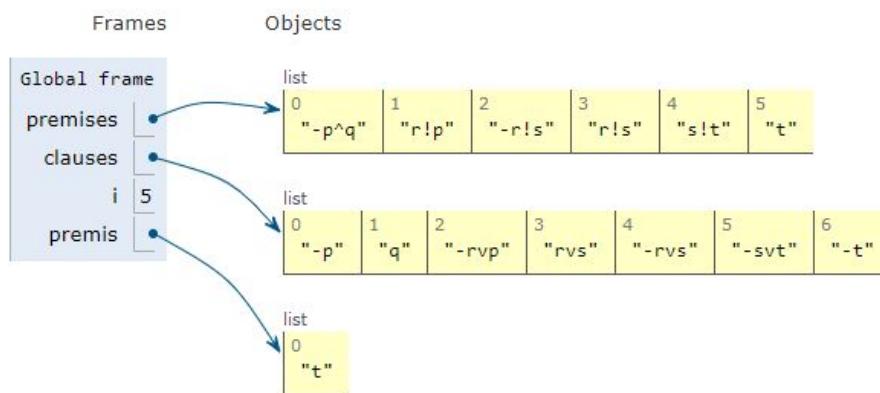
```
premis[1] = '-' + premis[1]
```

```
clauses[-1] = (premis[0] + '^' + premis[1])
```

```
print(clauses)
```

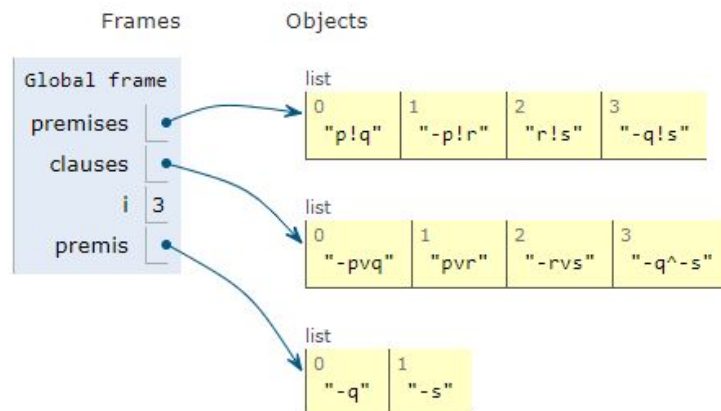
## Example:6

```
['-p', 'q', '-rvp', 'rvs', '-rvs', '-svt', '-t']
```



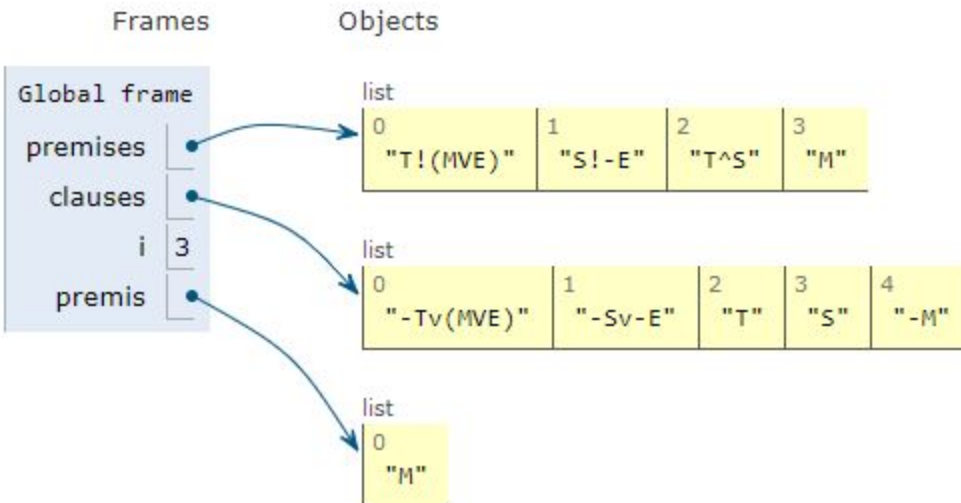
## Example:7

```
['-pvq', 'pvr', '-rvs', '-q^s']
```



## Example:8

`['-Tv(MVE)', '-Sv-E', 'T', 'S', '-M']`



## Example:9

`['-LvA', '-Ev-I', '-AvE', 'L^I']`

