**LAB-1**

**PYTHON**

**QUESTION-01:**

**import** re *#this module is helpful for regular expressions matching operations***def** verify():  
 **while True**:  
 password = input(**"Enter a password: "**) *#inputting the password*

*#verifying the length of the input whether it matches the length criteria* **if** len(password) < 6 **or** len(password)>16:

print(**"length should be between 6 and 16 letters"**)

*#verifies whether it contains a number*

**elif** re.search(**'[0-9]'**,password) **is None**:

print(**"Needed atleast a number"**)

*#verifies whether it contains a capital letter*  
 **elif** re.search(**'[A-Z]'**,password) **is None**:

print(**"Needed atleast a capital letter"**)

*#verifies whether it contains a special character in it*  
 **elif** re.search(**'[[$@!\*]'**, password) **is None**:  
 print(**"Needed a special character in it"**) **else**:  
 print(**"Password matched the criteria"**)  
 **break**verify()

**QUESTION-02:**

sentence=input(**"enter the sentence: "**) *#inputing the sentence*final=sentence.split(**' '**) *#splitting the sentence with blank space stored in final*index=len(final) *#finding the length of the final*mid=int(index/2)  
**if** index==2: *#if the length is resulted as 2, we can conclude theres no middle word* print(**"no middle word"**)  
**if** index%2==0:*#if the length is even number, then the sentence contains 2 middle words* print(**"Middle words are:"**,final[mid-1:mid+1])  
**else** : *#if odd, prints the middle word, pointing with mid value* print(**"Middle word is:"**,final[mid])  
  
  
**def** findlong(final) : *#to find the longest in sentence* longest\_word=**' '** longest\_length=0  
 **for** word **in** final: *#for every word in final list, we r gonna find the longest* **if** len(word)>longest\_length:  
 longest\_word=word  
 longest\_length=len(word)  
  
 print(**"longest word:"**, longest\_word)  
findlong(final)  
  
print(**"reversed sentence is:"**, sentence[::-1]) *#printing the given sentence in reverse order*

**QUESTION-03:**

input = [1,3,6,2,-1,2,8,-2,9]  
output = []  
input.sort() *#sorting the list*r=len(input)-1  
**for** i **in** range(len(input)-2):  
 l = i + 1 *# we don't want l and i to be the same value.  
 # for each value of i, l starts one greater  
 # and increments from there.* **while** (l < r):  
 sum\_ = input[i] + input[l] + input[r]  
 **if** (sum\_ < 0):  
 l = l + 1  
 **if** (sum\_ > 0):  
 r = r - 1  
 **if not** sum\_: *# 0 is False in a boolean context* output.append([input[i],input[l],input[r]])  
 l = l + 1 *# increment l when we find a combination that works*print(output)

**QUESTION-04:**

pythonlist=[**'harsha'**,**'akshay'**,**'harish'**,**'avinash'**,**'chintu'**]*#list of students from python class*weblist=[**'harsha'**,**'chintu'**,**'nagraj'**] *#list of students from web class*

*#this function helps in finding the ppl who enrolled in both classes***def** common(a, b):

**return** set(a) & set(b)  
  
*#this function helps in finding the ppl who r not common in both classes***def** notcommon(a,b):

**return** (set(a) **or** set(b))-(set(a) **and** set(b))  
  
  
  
print(**"list of students who are common in both classes:"**,common(pythonlist, weblist))  
print(**"list of students who are not common in both classes:"**,notcommon(pythonlist, weblist))