MEGHNAD SAHA INSTITUTE OF TECHNOLOGY

*Techno Complex, Madurdaha,Beside NRI Complex, Post-Uchhepota, Kolkata 700 150*

LABORATORY NOTE BOOK

MAKAUT ODD SEMESTER 2024



[MASTERS OF COMPUTER APPLICATION]

[PROGRAMMING CONCEPT WITH PYTHON LAB (MCAN191)]

[RUPAK SARKAR]

ROLL NO: 14271024036 REGN. NO.: 241420510045

STREAM: MCA SEMESTER: I (1ST)

YEAR: 1ST YearSESSION: 2024-2026



MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY



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“LIST OF ASSIGNMENT/EXPERIMENT SUBMISSION DETAILS”

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| --- | --- | --- | --- | --- | --- |
| **SL.**  **NO.** | **ASSIGNMENT / EXPERIMENT NAME** | **DATE OF EXPERIMENT** | **DATE OF SUBMISION** | **CHECKED BY** | **REMARKS (ANY DEVIATION REGARDING SUBMISSION DATES, CONTENT, FORMAT, ETC)** |
| 1. | WAP to implement Selection Sort. | 6/12/2024 | 13/12/2024 |  |  |
| 2. | WAP to implement Bubble Sort. | 6/12/2024 | 13/12/2024 |  |  |
| 3. | WAP to find GCD of two numbers using Recursion. | 6/12/2024 | 13/12/2024 |  |  |
| 4. | WAP to print Fibonacci series using Recursion. | 6/12/2024 | 13/12/2024 |  |  |
| 5. | WAP to print highest frequency character in your name. | 6/12/2024 | 13/12/2024 |  |  |
| 6. | WAP to take list of numbers as input and store them in Even and Odd lists using Lambda Function. | 6/12/2024 | 13/12/2024 |  |  |
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| OBSERVATIONS / COMMENTS ON THE OVERALL PERFORMANCE: |

Signature in full with date Signature in full with date

**Faculty / Technical Assistant Lab Examiner**

**Q.1. Write a program in python to implement selection sort.**

Ans:

def selectionsort(ls):

n=len(ls)

for i in range(n):

min=ls[i]

loc=i

for j in range(i+1,n):

if(ls[j]< min):

min=ls[j]

loc=j

if(loc!=i):

temp=ls[i]

ls[i]=ls[loc]

ls[loc]=temp

if \_\_name\_\_ =="\_\_main\_\_":

ls=[12,21,13,31,14,41,15]

n=len(ls)

print("\n Elements in the list are:",end="")

for i in range(n):

print(ls[i],end=" ")

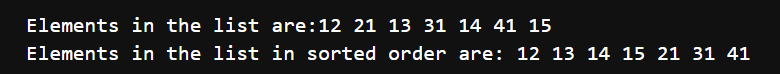
selectionsort(ls)

print("\n Elements in the list in sorted order are:",end=" ")

for i in range(n):

print(ls[i],end=" ")

Output:



**Q.2. Write a python program to implement Bubble Sort.**

Ans:

def bubblesort(ls):

n = len(ls)

for i in range(n):

for j in range(0, n-i-1):

if ls[j] > ls[j+1]:

ls[j], ls[j+1] = ls[j+1], ls[j]

if \_\_name\_\_ == "\_\_main\_\_":

ls = list(map(int, input("Enter the elements for sorting: ").split()))

n = len(ls)

print("\nElements in the list are:", end=" ")

for i in range(n):

print(ls[i], end=" ")

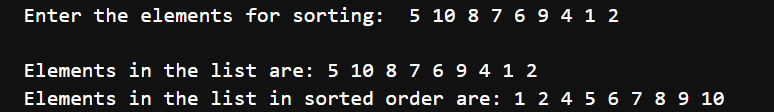
bubblesort(ls)

print("\nElements in the list in sorted order are:", end=" ")

for i in range(n):

print(ls[i], end=" ")

Output:



**Q.3. Write a Python program to find the GCD of two numbers using recursion.**

Ans:

def gcd(a,b):

if b==0:

return a

else:

return gcd(b,a%b)

if \_\_name\_\_=="\_\_main\_\_":

a,b=[int(c) for c in input ("Enter two numbers:").split()]

r=gcd(a,b)

print("GCD of %d and %d is %d" %(a,b,r))

Output:



**Q.4. Write a Python program to find the Fibonacci Series using recursion.**

Ans:

def fibonacci(n):

if n<=0:

return 0

elif n==1:

return 1

else:

return fibonacci(n-1)+ fibonacci(n-2)

if \_\_name\_\_=="\_\_main\_\_":

num=int(input("Enter a number:"))

for i in range(num):

print(fibonacci(i),end=" ")

Output:



**Q.5. Write a Python program to find the highest frequency character in your name.**

Ans:

st=input("Enter Your Name:")

dt={}

for i in st:

if i in dt:

dt[i]+=1

else:

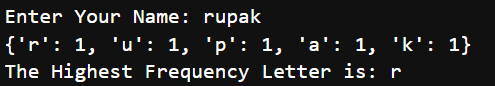
dt[i]=1

print(dt)

largest=max(dt,key=dt.get)

print("The Highest Frequency Letter is:",largest)

Output:



**Q.6. Write a Python program to take a list of numbers as input and store the even and odd numbers separately into different lists using the lambda function.**

Ans:

ls=[x for x in range(1,21)]

even=list(filter(lambda x:(x%2==0),ls))

odd=list(filter(lambda x:(x%2!=0),ls))

print("The given list is:",ls)

print("Even numbers are:",even)

print("Odd numbers are:",odd)

Output:

