Practical 1

Develop programs to understand the decision control structures of

python.

A] Write a program to calculate the electricity bill (accept number of units from

user) according to the following criteria: (if statement)

Unit amt per unit

First 100 units no charge

Next 100 units Rs 5 per unit

After 200 units Rs 10 per unit

(For example, if input unit is 350 than total bill amount is Rs2000)

Program:

```
unit = int(input("Enter the Biling unit: "))

if (unit<=100):

  print("No Charge")

if (unit>100 and unit<201):

  unit2=unit-100

  print("Bill amout Rs: ")

  print(unit2*5)

if (unit>100):

  u1 = unit-200

  u2 = 100*5

  u3 = u1*10

  print("Bill amout Rs: ")

  print(u3+u2)
```

B] Write a program to check whether the last digit of a number (entered by user) is

divisible by 3 or not. (if else statement)

Program:

```
num=int(input("Enter a Number: "))

num1=num%10

if (num1%3==0):

  print("{} is Divisible by 3".format(num1))

else:

  print("{} is Not Divisible by 3".format(num1))
```

C] Write a program to accept percentage from the user and display the grade

according to the following criteria: (elif statement)

Marks Grade

> 90 A

> 80 and <= 90 B

>= 60 and <= 80 C

below 60 D

Program:

```
p = int(input("Enter Your Percentage: "))

if (p>90 and p<=100):

  print("Your Grade is A")

elif (p>80 and p<=90):

  print("Your Grade is B")

elif (p>=60 and p<=80):

  print("Your Grade is C")

elif (p<60):

  print("Your Grade is D")

else:

  print("Enter corrrect percentage")
```

Practical 2

Develop programs to understand the looping statement

A. Read the string from the user and count the number of vowels in that string. (For using sequence)

Program:

```
str = input("Enter a string: ")
vowel=0
for i in str:
    if i=='a' or i=='e' or i=='i' or i=='o' or i=='u' or i=='A' or i=='E' or i=='I' or i=='O' or i=='U':
        vowel = vowel+1
print("The no of vowels in string: ", vowel)
```

using list:

```
str = input("Enter a string: ")
l = ['a','e','i','o','u','A','E','I','O','U']
vowel=0
for i in str:
    if i in l:
        vowel = vowel+1
print("The no of vowels in string: ", vowel)
```

B. Write a program to find the factorial of a number. (for using range())

Program:

```
num=int(input("Enter a no.: "))
factorial=1
if num < 0:
    print("Sorry, factorial does not exist for negative numbers")
elif num == 0:
    print("The factorial of 0 is 1")
```

```
else:

    for i in range(1,num + 1):

        factorial = factorial*i

    print("The factorial of",num,"is",factorial)
```

output:

Enter a no.: 5

The factorial of 5 is 120

C. Write a program to find the sum of the digits of a number accepted from user

(while loop)

Program:

```
n=int(input("Enter a number:"))

tot=0

while(n>0):

    dig=n%10

    tot=tot+dig

    n=n//10

print("The total sum of digits is:",tot)
```

Practical 3

A] Write a program to demonstrate List sequence.

```
# Create an empty list

lst = []
print(type(lst))


# Read the elements of the list from the user

a = int((input("Enter the size of list")))
for i in range(0,a):
    b = (input("Add list element"))
```

```python
    lst.append(b)
print(lst)

# Print elements using slice operator.

lst=[' apple', 'a', '1', 'internet']
print(lst[:])
print(lst[:3])
print(lst[3:])
print(lst[::-1])

# Update the elements of the list

a = ['Ansh', 2, 35, 'code', 2.5]
print("Length of the list", len(a))
print("Before list",a)
a[0] = "ash"
print("After update list",a)

# Add new elements in to the list – append() , insert()

a = ['Ansh', 2, 35, 'code', 2.5]
print("list",a)
print("Length of the list", len(a))
a.append("kash")
print("list",a)
print("Length of the list", len(a))
a.insert(1,25)
print("list",a)
print("Length of the list", len(a))

# Removing elements from the list – remove() del

a = ['Ansh', 2, 35, 'code', 2.5]
print("list",a)
print("Length of the list", len(a))
b = a.pop(1)
print("element deleted using pop()",b)
print("list",a)
a.remove(35)
print("element deleted using remove()",a)
del a[1:3]
print("element deleted using del keyword",a)

# Find out length of the list

a = ['Ansh', 2, 35, 'code', 2.5]
```

```python
print("list",a)
print("Length of the list", len(a))

# Find out maximum between list

a = [1,5,8,6,2]
print("Largest element of list", max(a))


# Find out minimum between list

a = [1,5,8,6,2]
print("Smallest element of list", min(a))
```

B] Write a program to demonstrate Tuple sequence.

```python
# Creating Tuple

a = ()
tup = tuple()
print(type(a))
print(type(tup))

# Read the elements of the tuple from the user

lst=[]
a = int((input("Enter the size of tuple")))
for i in range(0,a):
    b = (input("Add tuple element"))
    lst.append(b)
tup = tuple(lst)
print(tup)
print(type(tup))

# Print the elements using slice operator.

tup=('apple', 'realme', 'redmi', 'moto')
print(tup[:])
print(tup[:3])
print(tup[3:])
print(tup[::-1])
print(tup[-1:])

# Deleting Tuple

tup = ('apple', 'realme', 'redmi', 'moto')
```

```
print("Tuple",tup)
del tup

# Find out length of the Tuple

tup = ('apple', 'realme', 'redmi', 'moto')
print(" Length of Tuple",len(tup))

# Find out maximum between list

tup = (25,80,74,62,250)
print(tup)
print(" Maximum of Tuple",max(tup))


# Find out minimum between list

tup = (25,80,74,62,250)
print(tup)
print(" Minimum of Tuple",min(tup))
```

C] Demonstrate the dictionary

```
# Creating Dictionary

dic={}
my_dict={"Car1": "Audi", "Car2":"BMW",
      "Car3":"Mercidies Benz","Car4":"Range Rover"}
print(type(dic))
print(my_dict)
print(type(my_dict))

# Sort dictionary by values(Ascending and descending)

import operator

d = {1: 2, 3: 4, 4: 3, 2: 1, 0: 0}

s= sorted(d.items(), key=operator.itemgetter(1))

print('ascending order : ',s)

s1= dict( sorted(d.items(), key=operator.itemgetter(1),reverse=True))

print('descending order : ',s1)


# concatenate two dictionaries to create one

car1_model={'Mercedes':1960}
car2_model={'Audi':1970}
```

```python
car={}
car.update(car1_model)
car.update(car2_model)
print(car)


# check whether the key exist or not

my_dict={"Car1": "Audi", "Car2":"BMW",
    "Car3":"Mercidies Benz","Car4":"Range Rover"}

key = input("Enter the key you want to search:\n")

if key in my_dict.keys():
    print("Present")
else:
    print("Not Present")


# iterate the keys of dictionary

my_dict={"Car1": "Audi", "Car2":"BMW",
    "Car3":"Mercidies Benz","Car4":"Range Rover"}
for x in my_dict:
    print(x)


# iterate the values of dictionary

my_dict={"Car1": "Audi", "Car2":"BMW",
    "Car3":"Mercidies Benz","Car4":"Range Rover"}
for x in my_dict.values():
    print(x)


# iterate the items of dictionary

my_dict={"Car1": "Audi", "Car2":"BMW",
    "Car3":"Mercidies Benz","Car4":"Range Rover"}
for x in my_dict.items():
    print(x)


# remove the specific values

my_dict={"Car1": "Audi", "Car2":"BMW",
    "Car3":"Mercidies Benz","Car4":"Range Rover"}
print("Original Dict \n",my_dict)
```

```python
my_dict.pop('Car3')
print("Element removed using pop \n",my_dict)
del my_dict['Car2']
print("Element removed using del keyword \n",my_dict)
```