1. Write a program in python to calculate the electricity bill according to the number of units consumed

- First 100 units-No charge to be paid
- Next 100 units-Rs. 5 per unit
- After 200 units-.Rs. 10 per unit

Code:

```
print("\n1. Write a program in python to calculate the electricity bill according to the number of units")
units=int(input("Enter the units : "))

if (units<100):
        print("No Charge to be paid")
elif (units<=200):
   print("Charges to be paid are ",(units-100)," * 5 i,e,",(units-100)*5)
elif (units>200  ):
   print("Charges to be paid are 100 * 0 + 100 * 5 + ",(units-100-100)," * 10 i,e,",(100*5)+(units-200)*10)
else:
   print("Enter Valid Units")
```

Output:

```
1. Write a program in python to calculate the electricity bill according to the number of units
Enter the units : 500
Charges to be paid are 100 * 0 + 100 * 5 +  300  * 10 i,e, 3500
```

2. Write a program to display the last digit of a number.

Code:

```
#2. Write a program to display the last digit of a number.
print("\n2. Write a program to display the last digit of a number")
number=int(input("Enter the Number: "))
print("Last Digit of Given Number",number,"is",number%10)
```

Output:

```
2. Write a program to display the last digit of a number
Enter the Number: 689
Last Digit of Given Number 689 is 9
```

3. Write a python code to find the greatest number of a list using for loop

Code:

```
#3. Write a python code to find the greatest number of a list using for loop
print("\n3. Write a python code to find the greatest number of a list using for loop")
number_list =[50,25,63,76,20]
greatest= number_list[0]
for num in number_list:
    if greatest < num:
        greatest =num
print("Greatest Number in ",number_list,"is",greatest)
```

Output:

```
3. Write a python code to find the greatest number of a list using for loop
Greatest Number in  [50, 25, 63, 76, 20] is 76
```

4.Write a python code to find the smallest number of a list using for loop

Code:

```
#4. Write a python code to find the smallest number of a list using for loop
print("\n4. Write a python code to find the smallest number of a list using for loop")
smallest=number_list[0]
for num in number_list:
   if smallest > num:
      smallest =num
print("Smallest Number in ",number_list,"is",smallest)
```

Output:

```
4. Write a python code to find the smallest number of a list using for loop
Smallest Number in  [50, 25, 63, 76, 20] is 20
```

5. Write a python code to count numbers from 10 to 1 using while loop

Code:

```
#5. Write a python code to count numbers from 10 to 1 using while loop
print("\n5. Write a python code to count numbers from 10 to 1 using while loop")
limit=10
while (limit>0):
   print(limit)
   limit=limit-1
```

Output:

```
5. Write a python code to count numbers from 10 to 1 using while loop
10
9
8
7
6
5
4
3
2
1
```

6. Write a python code to find factorial of a number using while loop

Code:

```
#6. Write a python code to find factorial of a number using while loop
print("\n6. Write a python code to find factorial of a number using while loop")
fact_num=int(input("Enter the Number to find its Factorial: "))
temp=fact_num
factorial=1
while(fact_num >0):
   factorial=factorial*fact_num
   fact_num=fact_num-1

print("Factorial of",temp,"is",factorial)
```

Output:

```
6. Write a python code to find factorial of a number using while loop
Enter the Number to find its Factorial: 5
Factorial of 5 is 120
```

7. Write a python code to calculate the roots of a quadratic equation. Of the form Ax2+Bx+C=0

Code:

```
#7.Write a python code to calculate the roots of a quadratic equation. Of the form Ax2+Bx+C=0
print("\n7.Write a python code to calculate the roots of a quadratic equation. Of the form Ax2+Bx+C=0")
A=int(input("Enter the Coefficent of x^2 :"))
B=int(input("Enter the Coefficent of x:"))
C=int(input("Enter the Constant : "))
x= (B+math.sqrt((B**2-4*A*C)))/2*A
y=(B-math.sqrt((B**2-4*A*C)))/2*A
print("Roots of Quadratic Equation is ",A,"x^2 +",B,"x+",C," =0 are",x,"and",y)
```

Output:

```
7.Write a python code to calculate the roots of a quadratic equation. Of the form Ax2+Bx+C=0
Enter the Coefficent of x^2 :1
Enter the Coefficent of x:5
Enter the Constant : 6
Roots of Quadratic Equation is  1 x^2 + 5 x+ 6 =0 are 3.0 and 2.0
```

8. Write a Python script to print a dictionary where the keys are numbers between 1 and 15 (both included) and the values are the square of the keys

Code:

```
#8. Write a Python script to print a dictionary where the keys are numbers between
#1 and 15 (both included) and the values are the square of the keys
print("\n8. Write a Python script to print a dictionary")
square_dict={}
num=1
while( num <=15):
   square_dict.update({num:num**2})
   num=num+1
print("Dictionary is",square_dict)
```

Output:

```
8. Write a Python script to print a dictionary
Dictionary is {1: 1, 2: 4, 3: 9, 4: 16, 5: 25, 6: 36, 7: 49, 8: 64, 9: 81, 10: 100, 11: 121, 12: 144, 13: 169, 14: 196, 15: 225}
```