Assignment-2:

1)Write a function to check whether a number falls in a given range

Sol:

```
min = int(input("Enter min value in range : "))
max = int(input("Enter max value in range : "))
n = int(input("Enter a number : "))
if(min<=n<=max):
 print("In range")
else:
 print("Not in range")
```

2) Some board games require you to reduce the number of cards you are holding by half, rounded down. For instance, if you have 10 cards, you would reduce to 5 and if you had 11 cards you would also reduce to 5. With 12 cards you would reduce to 6. Write a program that asks the user to enter how many cards they have and print out what their hand would reduce to under this rule.

Sol:

```
n = int(input("Enter a numner "))
print(n//2)
```

3)Write a program that asks the user to enter a positive integer. Then generate a random number between that number and 10 more than that number and print the letter A that many times on the same line.

Sol:

```
from random import randint as r
n = int(input("Enter a number : "))
result = r(n,n+10)
print("A"*result)
```

4) This is a very simple billing program. Ask the user for a starting hour and ending hour, both given in 24-hour format (e.g., 1 pm is 13, 2 pm is 14, etc.). The charge to use the service is $5.50 per hour. Print out the user's total bill. You can assume that the service will be used for at least 1 hour and never more than 23 hours. Be careful to take care of the case that the starting hour is before midnight and the ending time is after midnight.

Sol:

```
start = int(input("Enter starting hour : "))
end = int(input("Enter ending hour : "))
print("Users total bill = ",end = " ")
if(end - start >0):
        print((end - start)*5.5,"$")
else:
        print((24 - (start - end))*5.5,"$")
```

5) One way to estimate probabilities is to run what is called a computer simulation. Here we will estimate the probability of rolling doubles with two dice (where both dice come out to the same value). To do this, run a loop 10,000 times in which random numbers are generated representing the dice and a count is kept of how many times doubles appear. Print out the final percentage of rolls that are doubles.

Sol:

```
from random import randint as r
count = 0
for i in range(10000):
  res1 = r(1,6)
  res2 = r(1,6)
if(res1 == res2):
  count += 1
print("Probability of doubles = ",end=  " ")
print(count/10000)
```