**Python Tasks – Day12**

1. **Write a code to implement Guess Game Guess Game**

**constraints / Rules**

**you have 5 chance to guess correct number which is choosen by computer / friend**

**Range which is allowed to select a number 1-50**

**After each guess you should give some tips / hints to user to improve their chance of winning**

**for example if user guess a number which is higher than actual number you should say `hint: think a low number!**

**if user guess a number which is lower than actual number you should say `hint: think a big number!`**

**if user wins we will show a congrats messege and stop our game**

**if any time user guess is out of limit than print a warning message saying Think in Limits 1-50 only!**

**but we do not count this as a chance**

**Ans:**

import random

number = random.randint(1, 50)

chances = 5

while chances > 0:

guess = int(input("Guess the number (between 1 and 50): "))

if guess < 1 or guess > 50:

print("Think in Limits 1-50 only!")

continue

if guess == number:

print("Congratulations! You won!")

break

elif guess < number:

print("Hint: Think a big number!")

else:

print("Hint: Think a low number!")

chances -= 1

if not chances:

print(f"Sorry, you lost. The number was {number}.")

1. **Solve this problem** [**https://www.hackerrank.com/challenges/list-comprehensions/problem**](https://www.hackerrank.com/challenges/list-comprehensions/problem)

**Ans:**

if \_\_name\_\_ == '\_\_main\_\_':

x = int(input())

y = int(input())

z = int(input())

n = int(input())

print(list([i,j,k] for i in range(x+1) for j in range(y+1) for k in range(z+1)  if i+j+k !=n))2

1. **Solve this problem** [**https://www.hackerrank.com/challenges/python-lists/problem**](https://www.hackerrank.com/challenges/python-lists/problem)

**Ans:**

**if \_\_name\_\_ == '\_\_main\_\_':**

**N = int(input())**

**l = []**

**for i in range(N):**

**s = list(input().split())**

**if s[0]=='insert':**

**l.insert(int(s[1]),int(s[2]))**

**if s[0]=='remove':**

**l.remove(int(s[1]))**

**if s[0]=='append':**

**l.append(int(s[1]))**

**if s[0]=='sort':**

**l.sort()**

**if s[0]=='pop':**

**l.pop()**

**if s[0]=='reverse':**

**l.reverse()**

**if s[0]=='print':**

**print(l)**

1. **Solve this problem** [**https://www.hackerrank.com/challenges/finding-the-percentage/problem**](https://www.hackerrank.com/challenges/finding-the-percentage/problem)

**Ans:**

if \_\_name\_\_ == '\_\_main\_\_':

n = int(input())

student\_marks = {}

for \_ in range(n):

line = input().split()

name, scores = line[0], line[1:]

scores = map(float, scores)

student\_marks[name] = scores

query\_name = input()

marks=0

for i in student\_marks[query\_name]:

marks=marks+i

avg=marks/3

print("%.2f"%avg)

1. **Write a program to sort a list without using inbuilt functions (list.sort not allowed)**
   1. **Using Bubble Sort Algorithm**

**Ans:**

def bubble\_sort(arr):

n = len(arr)

for i in range(n):

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

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

arr[j], arr[j+1] = arr[j+1], arr[j]

return arr

arr = [64, 34, 25, 12, 22, 11, 90]

print("Original array is:")

print(arr)

bubble\_sort(arr)

print("Sorted array is:")

print(arr)

* 1. **Using Insertion Sort Algorithm**

**Ans:**

def insertion\_sort(arr):

for i in range(1, len(arr)):

key = arr[i]

j = i - 1

while j >= 0 and key < arr[j]:

arr[j + 1] = arr[j]

j -= 1

arr[j + 1] = key

arr = [5, 2, 4, 6, 1, 3]

insertion\_sort(arr)

print("Sorted array is:")

for i in range(len(arr)):

print("%d" % arr[i])

* 1. **Using Selection Sort Algorithm**

**Ans:**

def selection\_sort(arr):

for i in range(len(arr)):

min\_idx = i

for j in range(i + 1, len(arr)):

if arr[min\_idx] > arr[j]:

min\_idx = j

arr[i], arr[min\_idx] = arr[min\_idx], arr[i]

arr = [5, 2, 4, 6, 1, 3]

selection\_sort(arr)

print("Sorted array is:")

for i in range(len(arr)):

print("%d" % arr[i])