

Assignment 2

Academic task

Assignment

Last date of Submission

31st Aug 2020

Max. Marks

30

Instructions:

- a) Choose your Set according to your Roll No.
- b) Write your Name, Registration Number, Roll No. and SET number on the answer sheet.

| SET NO. | ROLL NO. |
|----------------|--------------------------------|
| 1 | 1,8,15,22,29,36,43,50,57,64,71 |
| 2 | 2,9,16,23,30,37,44,51,58,65,72 |
| 3 | 3,10,17,24,31,38,45,52,59,66 |
| 4 | 4,11,18,25,32,39,46,53,60,67 |
| 5 | 5,12,19,26,33,40,47,54,61,68 |
| 6 | 6,13,20,27,34,41,48,55,62,69 |
| 7 | 7,14,21,28,35,42,49,56,63,70 |

Set 1

1. Write a program to generate all unique combinations of three numbers n1, n2, n3 using for loops. E.g. for 1 2 3

1 2 3

1 3 2

2 1 3

2 3 1

3 1 2

2. Write a program that has dictionary of names of five cricketers and a list of their runs in 5 matches. Create another dictionary from this dictionary that has name of the students and their total runs (sum of all runs). Find out the player with maximum number of runs.

Sample: players= {"Dhoni: [20,45,67,78,80],.....}

OUTPUT: New_players = {"Dhoni":[290],..... }

Dhoni with highest runs=290

3. Write a program to read a name and the displays it in abbreviated form e.g Dev Karan Singh should be displayed as
(a) D.K. Singh.

Set 2

1. Write a program to generate and print all possible combinations of the characters present in a given string. Take length of string = 4 e.g. JOHN will have combinations JONH, JNOH.....
2. Write a program that reads in numbers separated by a space in one line and displays distinct numbers (i.e., if a number appears multiple times, it is displayed only once). (Hint: Read all the numbers and store them in list1. Create a new list list2. Add a number in list1 to list2. If the number is already in the list, ignore it.)

```
Enter ten numbers: 1 2 3 2 1 6 3 4 5 2 ↵ Enter  
The distinct numbers are: 1 2 3 6 4 5
```

3. Write a program that displays a menu and its price. Take the order from the customer. Check if the ordered product is in the menu. In case it is not there, the customer should be asked to reorder and if it is present, then product should be added in the bill. Print the final bill.

Set 3

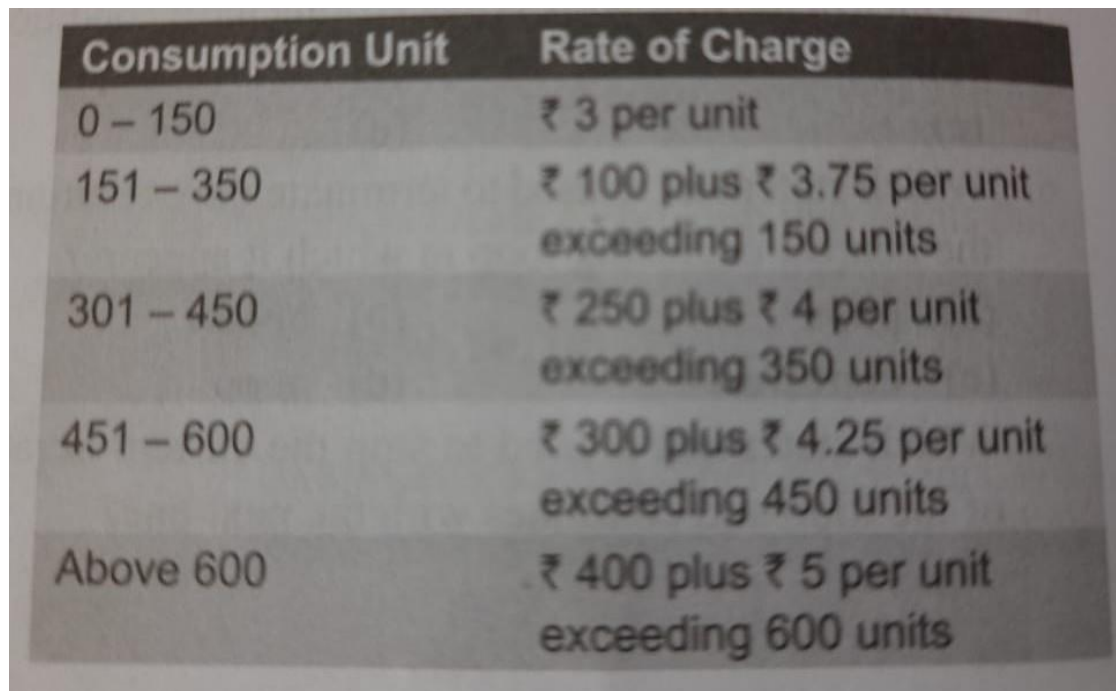
1. Write a program that receives an integer (less than or equal to nine digits in length) and prints out the number in words. For example, if the number input is 12342, then the output should be Twelve Thousand Three Hundred Forty-Two.
2. Write a program that has a dictionary of your friends' name (as keys) and their birthdays. Print the items in the dictionary in a sorted order. Prompt user to enter the name and check if it is present in the dictionary. If the name does not exist, then ask the user to enter DOB. Add the details in the dictionary.
3. Develop a function in Python which takes an English word as input and returns its antonym word. Find suitable data structure for this program and implement. (TAKE 10 WORDS)

Set 4

1. Write a hangman game that randomly generates a word and prompts the user to guess one letter at a time, as shown in the sample run. Each letter in the word is displayed as an asterisk. When the user makes a correct guess, the actual letter is then displayed. When the user finishes a word, display the number of misses and ask the user whether to continue playing. Create a list to store the words, as follows: # Use any words you wish

```
words = ["write", "that", "program", ...]
```

2. Write a program to calculate electricity bill based on following information:



| Consumption Unit | Rate of Charge |
|------------------|--|
| 0 – 150 | ₹ 3 per unit |
| 151 – 350 | ₹ 100 plus ₹ 3.75 per unit exceeding 150 units |
| 301 – 450 | ₹ 250 plus ₹ 4 per unit exceeding 350 units |
| 451 – 600 | ₹ 300 plus ₹ 4.25 per unit exceeding 450 units |
| Above 600 | ₹ 400 plus ₹ 5 per unit exceeding 600 units |

3. Write a function that accepts two positive numbers n and m where $m \leq n$, and returns numbers between 1 and n that are divisible by m .

Set 5

1. (Check password) Some Web sites impose certain rules for passwords. Write a function that checks whether a string is a valid password. Suppose the password rules are as follows:

- A password must have at least eight characters.
- A password must consist of letters, digits and underscore.
- A password must contain at least two digits.

Write a program that prompts the user to enter a password and displays valid

password if the rules are followed or invalid password otherwise.

2. Write a program to create a list of randomly generated numbers in the range 0-99. Then delete all the numbers from the list that are divisible by 3 and convert all the left numbers into a single digit. E.g $77 = 7+7=14=1+5=5$

3. Write a Python program to find maximum length of consecutive 0's in a given binary string where:

Sample Input: 11001000001010

Sample Input: 100010011001010

Set 6

1. Print the following pattern

```
*
* * *
* * * * *
* * * * * *
* * * * * * *
* * * * * * * *
      * * * * *
      * * * * *
      * * * * *
      * * * * *
```

2. Define a python function 'australian_tennis(d)' which reads a dictionary of the following form and identifies the player with the highest total score. The function should return a pair (playername, topscore), where playername is the name of the player with the highest score and topscore is the total runs scored by the player.

Input is:

```
australian_tennis ({'test1':{'Samantha Stosur:7, 'Astra Sharma:8}, {'test2':{'Astra Sharma: 5, 'Ellen Perez: 4}})
```

3. Write a program to calculate the parking charges of a vehicle. Enter the type of vehicle as a character (like c for car, b for bus, etc.) and read the hours and minutes when the vehicle enters the parking lot. When the vehicle is leaving, enters its leaving time. Calculate the difference between the two timings to calculate the number of hours and minutes for which the vehicle was parked. Calculate the charges based on the following information:

| Vehicle Name | Rate till 3 hours | Rate after 3 hours |
|-----------------------------|-------------------|--------------------|
| Truck / bus | Rs 20 | 30 |
| Car | Rs 10 | 20 |
| Scooter /cycle/ Motor cycle | Rs 5 | 10 |

Set 7

1.) Write a program to print the following pattern:

```
*****
*****
*****
*****
*****
*****
```

2.) . Write a program to record the details of books in a library (e.g., Book Title, Book ID, Author(s), etc.) in a dictionary as follows:

```
Books = {(Book ID, Book Title): (Subject, Author(s), Edition, Publisher, etc.),
.....}
```

Arrange the books in a sorted order corresponding to their respective author names.

3.) Create a list with first name for 5 person as FN= ["rahul", "ram",.....]

Second list with last name as LN= ["sharma", "Kapoor",.....]

In output

New List as NL= ["RS", "RK",.....]