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CHAPTER 1 – PRACTICE SET

1. Write a program to print Twinkle twinkle little star poem in python.
2. Use REPL and print the table of 5 using it.
3. Install an external module and use it to perform an operation of your interest.
4. Write a python program to print the contents of a directory using the os module. Search online for the function which does that.
5. Label the program written in problem 4 with comments.

CHAPTER 2 – PRACTICE SET

1. Write a python program to add two numbers.
2. Write a python program to find remainder when a number is divided by z.
3. Check the type of variable assigned using input () function.
4. Use comparison operator to find out whether ‘a’ given variable a is greater than ‘b’ or not. Take a = 34 and b = 80
5. Write a python program to find an average of two numbers entered by the user.
6. Write a python program to calculate the square of a number entered by the user.

CHAPTER 3 – PRACTICE SET

1. Write a python program to display a user entered name followed by Good Afternoon using input () function.
2. Write a program to fill in a letter template given below with name and date.

```
letter = '''
       Dear <|Name|>,
       You are selected!
       <|Date|>
        '''
```

3. Write a program to detect double space in a string.
4. Replace the double space from problem 3 with single spaces.
5. Write a program to format the following letter using escape sequence characters.

```
letter = "Dear Harry, this python course is nice. Thanks!"
```

CHAPTER 5 – PRACTICE SET

1. Write a program to create a dictionary of Hindi words with values as their English translation. Provide user with an option to look it up!
2. Write a program to input eight numbers from the user and display all the unique numbers (once).
3. Can we have a set with 18 (int) and `'18'` (str) as a value in it?
4. What will be the length of following set s:

```
s = set()
s.add(20)
s.add(20.0)
s.add('20') # length of s after these operations?
```

5. s = {}
   What is the type of `'s'`?
6. Create an empty dictionary. Allow 4 friends to enter their favorite language as value and use key as their names. Assume that the names are unique.
7. If the names of 2 friends are same; what will happen to the program in problem 6?
8. If languages of two friends are same; what will happen to the program in problem 6?
9. Can you change the values inside a list which is contained in set S?

```
s = {8, 7, 12, "Harry", [1,2]}
```

CHAPTER 6 – PRACTICE SET

1. Write a program to find the greatest of four numbers entered by the user.
2. Write a program to find out whether a student has passed or failed if it requires a total of 40% and at least 33% in each subject to pass. Assume 3 subjects and take marks as an input from the user.
3. A spam comment is defined as a text containing following keywords:
   "Make a lot of money", "buy now", "subscribe this", "click this". Write a program to detect these spams.
4. Write a program to find whether a given username contains less than 10 characters or not.
5. Write a program which finds out whether a given name is present in a list or not.
6. Write a program to calculate the grade of a student from his marks from the following scheme:
   90 – 100 => Ex
   80 – 90 => A
   70 – 80 => B
   60 – 70 =>C
   50 – 60 => D
   <50 => F
7. Write a program to find out whether a given post is talking about "Harry" or not.

CHAPTER 7 – PRACTICE SET

1. Write a program to print multiplication table of a given number using for loop.
2. Write a program to greet all the person names stored in a list ‘l’ and which starts with S.
   l = ["Harry", "Soham", "Sachin", "Rahul"]
3. Attempt problem 1 using while loop.
4. Write a program to find whether a given number is prime or not.
5. Write a program to find the sum of first n natural numbers using while loop.
6. Write a program to calculate the factorial of a given number using for loop.
7. Write a program to print the following star pattern.
   ```
    *
   ***
   ***** for n = 3
   ```
8. Write a program to print the following star pattern:
   ```
   *
   **
   ***   for n = 3
   ```
9. Write a program to print the following star pattern.
   ```
   * * *
   *   *   for n = 3
   * * *
   ```
10. Write a program to print multiplication table of n using for loops in reversed order.

CHAPTER 8 – PRACTICE SET

1. Write a program using functions to find greatest of three numbers.
2. Write a python program using function to convert Celsius to Fahrenheit.
3. How do you prevent a python print() function to print a new line at the end.
4. Write a recursive function to calculate the sum of first n natural numbers.
5. Write a python function to print first n lines of the following pattern:

   ***
   ** - for n = 3
   *

6. Write a python function which converts inches to cms.
7. Write a python function to remove a given word from a list ad strip it at the same time.
8. Write a python function to print multiplication table of a given number.

CHAPTER 10 – PRACTICE SET

1. Create a class *"Programmer"* for storing information of few programmers working at Microsoft.
2. Write a class *"Calculator"* capable of finding square, cube and square root of a number.
3. Create a class with a class attribute a; create an object from it and set 'a' directly using 'object.a = 0'. Does this change the class attribute?
4. Add a static method in problem 2, to greet the user with hello.
5. Write a Class 'Train' which has methods to book a ticket, get status (no of seats) and get fare information of train running under Indian Railways.
6. Can you change the self-parameter inside a class to something else (say "harry"). Try changing self to "slf" or "harry" and see the effects.

CHAPTER 13- PRACTICE SET

1. Create two virtual environments, install few packages in the first one. How do you create a similar environment in the second one?

2. Write a program to input name, marks and phone number of a student and format it using the format function like below:

“The name of the student is Harry, his marks are 72 and phone number is 99999888”

3. A list contains the multiplication table of 7. write a program to convert it to vertical string of same numbers.

4. Write a program to filter a list of numbers which are divisible by 5.

5. Write a program to find the maximum of the numbers in a list using the reduce function.

6. Run pip freeze for the system interpreter. Take the contents and create a similar virtualenv.

7. Explore the ‘Flask’ module and create a web server using Flask & Python.