Course Title: Problem Solving using Python Programming

Week – 1, Assignment

Year / Sem: I/I **Sections**: A1 & E1

Name of the Instructor: Pramod Kumar Poladi

Note: Before writing the code, read and understand the problem statement thoroughly to identify the input mentioned, output expected in the problem statement and then start developing a logic.

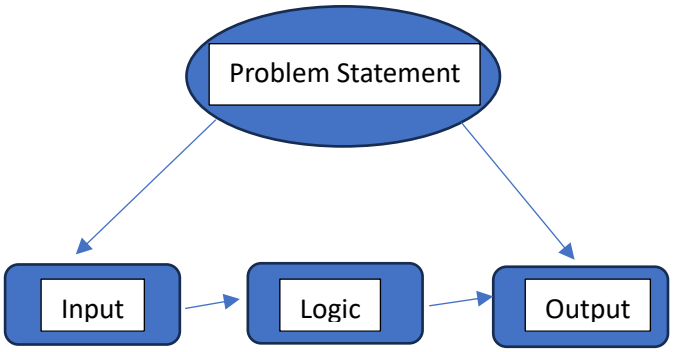

Fig. 1. Problem Solving Process

Assignment 1: Output function

Aim: Write a python program to print the following message using print function.

```
Teach & Demonstrate-> Knowledge->Practice & Assignments-> Skill
 Knowledge--> Skill--> Industry Ready
...Best Wishes...
```

Source Code:

```
Class = "Teach & Demonstrate"

Lab = "Practice & Assignments"

msg1 = " Knowledge"

msg2 = " Skill"

msg3 = " Industry Ready"

print(Class, msg1, Lab, msg2, sep="->")
```

print(msg1, msg2, msg3, sep="-->")

print("...Best Wishes...")

Output:

Teach & Demonstrate-> Knowledge->Practice & Assignments-> Skill

Knowledge--> Skill--> Industry Ready

...Best Wishes...

Assignment 2: Assigning multiple values to multiple variables on same line, same value to multiple variables on same line, and result of operation to a variable.

Aim: Write a Python program for the following scenario by applying an appropriate concept. A quiz exam on Unit-1 has been conducted for 6 students of section A1. Out of 6, 2 students have scored 15 marks (i.e., same mark) in the exam. Print the ID of the location where mark 15 is stored along with the marks.

Address/Id (Ex)	1000	4000	3000	5000	2000	
Location	12	11	16	18	15	
Students(Variables)	s1	s6	s2	s4	s3	s5

Source Code:

s1, s2, s4, s6 = 12, 16, 18, 11

s3 = s5 = 15

print(s3, id(s3), sep="->")

print(s5, id(s5), sep="->")

Output:

15->140703901017320

15->140703901017320

Assignment 3: Arithmetic operators

Aim: As the child is continuously playing video games on a mobile to deviate from playing, the father asked the child to calculate and tell him the number of seconds per year. Write a python program to help the child with solving a problem.

Source Code:

```
days=365

hours=24

minutes=60

seconds=60

print("Dad, the Number of seconds in a year : ",days*hours*minutes*seconds)
```

Output:

```
Dad, the Number of seconds in a year:  31536000
```

Assignment 4: user input dynamically, operators.

WAP to take the temperatures of all 7 days of the week and displays the average temperature of that week.

Source Code:

```
d1=int(input("Temperature of day 1 : "))

d2=int(input("Temperature of day 2 : "))

d3=int(input("Temperature of day 3 : "))

d4=int(input("Temperature of day 4 : "))

d5=int(input("Temperature of day 5 : "))

d6=int(input("Temperature of day 6 : "))

d7=int(input("Temperature of day 7 : "))

avg=(d1+d2+d3+d4+d5+d6+d7)/7

print("The average Temperature is : ",avg)
```

Output:

Temperature of day 1 : 43

Temperature of day 2 : 34

Temperature of day 3 : 4

Temperature of day 4 : 41

Temperature of day 5 : 46

Temperature of day 6 : 35

Temperature of day 7 : 38

The average Temperature is : 34.42857142857143

Assignment 5: user input dynamically, operators.

Write a python program to read item name, item selling price, CGST rate (%), SGST rate (%) from the user, calculate and print CGST, SGST and amount payable including GST.

Source Code:

```
item=input("Enter item name :")

sp_cost=float(input("How much is selling price of item: "))

cgst_rate=float(input("What is CGST rate %: "))

sgst_rate=float(input("What is SGST rate %: "))

cgst = sp_cost*(cgst_rate/100)

sgst = sp_cost*(sgst_rate/100)

print("CGST (@",cgst_rate,"%) :",(cgst))

print("SGST(@",sgst_rate,"%) :",(sgst))

amt=sp_cost+cgst+sgst

print("Amount payable: ",(amt))
```

Output:

Enter item name :Laptop

How much is selling price of item: 55000

What is CGST rate %: 9

What is SGST rate %: 9

CGST (@ 9.0 %) : 4950.0

SGST(@ 9.0 %) : 4950.0

Amount payable: 64900.0

Assignment 6: Data Types

Aim: Write a python program to print your details and their type like Name (Ex: 'Pramod Kumar Poladi', 'str'), Roll No. (Ex: 1217, 'int'), Percentage (Ex: 91.1, 'float'), and Exam (Ex: "Intermediate", 'str') using appropriate concepts.

Source Code:

```
Name = 'Pramod Kumar Poladi'

Roll_No = 1217

Percentage = 91.1

Exam = "Intermediate"

print(Name, type(Name))

print(Roll_No, type(Roll_No))

print(Percentage, type(Percentage))

print(Exam, type(Exam))
```

Output:

Pramod Kumar Poladi <class 'str'>

1217 <class 'int'>

91.1 <class 'float'>

Intermediate <class 'str'>

Assignment 7: Operators and Type Conversion

Aim: SR University Coding Club Hackathon: In a hackathon organized by the Coding Club of SR University, a total of 30 teams participated in the grand finale. Each team consisted of exactly 6 students. The event lasted for 3 days, and the total expenditure incurred was Rs. 2,47,600.00. As an organizer of the event, you want to calculate the following:

The amount spent per day

The amount spent on each student per day

The amount spent on each student for all 3 days

Write a Python program to calculate the above values and print the results in integer form.

Source Code:

```
teams = 30

members = 6

tot_exp = 247600

days = 3

print("Amount spent per day : ", int(247600/days))

print("Amount spent on each student per day:", int((247600/days)/(teams*members)))

print("Amount spent on each student for 3 days : ", int(247600/(teams*members)))
```

Output:

```
Amount spent per day :  82533

Amount spent on each student per day :  458

Amount spent on each student for 3 days :  1375
```

Assignment 8: input function, assignment operator

Aim: Write a python program to input three integer numbers and swap them as this: 1st number becomes the 2nd number, 2nd number becomes the 3rd number and 3rd number becomes the first number.

Source Code:

```
n1=int(input("Enter number 1 : "))

n2=int(input("Enter number 2 : "))

n3=int(input("Enter number 3 : "))

print("Original Numbers : ",n1,n2,n3)

n1,n2,n3=n2,n3,n1

print("After Swapping : ",n1,n2,n3)
```

Output:

```
Enter number 1 : 1

Enter number 2 : 2

Enter number 3 : 3

Original Numbers :  1 2 3

After Swapping :  2 3 1
```

Assignment 9: Operators, input function

Aim: Write a python program to read three float numbers in three variables and replace values of variables with the sum of first and second, subtraction of second and third, and multiplication of third and first number respectively.

Source Code:

```
n1=float(input("Enter number 1 : "))

n2=float(input("Enter number 2 : "))

n3=float(input("Enter number 3 : "))
```

```
print("Original Numbers : ",n1,n2,n3)

n1,n2,n3=(n1+n2),(n2-n3),(n3*n1)

print("After Swapping : ",n1,n2,n3)
```

Output:

```
Enter number 1 : 11.1

Enter number 2 : 22.2

Enter number 3 : 33.3

Original Numbers :  11.1 22.2 33.3

After Swapping :  33.3 -11.099999999999998 369.62999999999994
```

Assignment 10:

Aim: Write a python program to print reverse of a given 3 digit integer number on to screen.

Source Code:

```
num = int(input("Enter a 3 digit number which you would like reverse: "))

#digit 1

rem = num%10

rev = rem

num = int(num /10)

#digit 2

rem = num%10

rev = rev *10 + rem

num = int(num /10)

#digit 3

rem = num%10
```

```
rev = rev *10 + rem

num = int(num /10)

#reverse

print("Reverse of given number : ", rev)
```

Output:

```
Enter a 3 digit number which you would like reverse: 123

Reverse of given number:  321
```

Assignment 11:

Aim: Write a Python Program to print number of months, weeks, remaining days for a given days.

Source Code:

```
days = int(input("Enter number of days: "))

print("No. of months in a given days =", int(days/30))

print("No. of weeks in a given days =", int(days/7))

print("No. of remaining in a given days =", int(days%30))
```

Output:

```
Enter number of days: 342

No. of months in a given days = 11

No. of weeks in a given days = 48

No. of remaining in a given days = 12
```

Assignment 12:

Aim: Write a python program to check whether the objects are identical or not.

Source Code:

```
x = 1217
```

y = 1217

z = 1213

print(x is y);

print(x is z);

print(y is not z);

Output:

True

False

True