Decision Statements

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0.1 Decision Statements

Note Book Owner: Emdadul Hoque PROGRAM 01: Write a program which prompts a user to enter the radius of a circle. If the radius is greater than zero then calculate and print the area and circumference of the circle.

[ ]:
```
from math import pi
radius = eval(input("Enter radius of a circle: "))


if radius > 0:
    area = pi * radius * radius
    print("Area of the circule is = ", format(area,".2f"))
    circumference = 2*pi*radius
    print("Circumference of the circule is = ", format(circumference,".2f"))
else:
     print("Please give right input")
```

1 Check if a variable is a string using isinstance()

This isinstance(x, str) method can be used to test whether any variable is a particular datatype. By giving the second argument as "str", we can check if the variable we pass is a string or not

[38]:
```
x = 10
tst = isinstance(x, int)
print(tst)
```

```
True
```

[ ]:
```
x = "string"
tst = isinstance(x, str)
print(tst)
```

PROGRAM 02: Write a program to calculate the salary of a medical representative considering the sales bonus and incentives offered to him are based on the total sales. If the sales exceed or equal to '1,00,000 follow the particulars of Column 1, else follow Column 2

[44]:
```
sales = float(input("Enter total sales of the month"))
basic = 4000
```

```
conveyance = 500
da = 110 * basic/100
if sales >= 100000:
    hra = 20 * basic/100
    incentive = sales * 10/100
    bonus = 1000

else:
    hra = 10 * basic/100
    incentive = sales * 4/100
    bonus = 500


salary = basic+hra+incentive+bonus+conveyance+da
print("Salary Receipt of Employee")
print(" Total Sales", sales)
print(" Basic = ", basic)
print(" HRA = ", hra)
print(" Da = ", da)
print(" Incentive = ", incentive)
print(" Bonus = ", bonus)
print(" Conveyance = ", conveyance)
print(" Gross Salary = ", salary)
```

```
Enter total sales of the month1000000
Salary Receipt of Employee
 Total Sales 1000000.0
 Basic =  4000
 HRA =  800.0
 Da =  4400.0
 Incentive =  100000.0
 Bonus =  1000
 Conveyance =  500
 Gross Salary =  110700.0
```

PROGRAM 3: Write a program that prompts a user to enter two different numbers. Perform basic arithmetic operations based on the choices.

[49]:
```
first_number = float(input("Enter the first number: "))
second_number = float(input("Enter the second number: "))

print("Which operation you want to: ")
print("1) Addition")
print("2) Substraction")
print("3) Multiplication")
print("4) Division")
```

```
choice = int(input("Enter your choice: "))

if choice == 1:
    text = f"Addition of {first_number} and {second_number} is: {first_number +␣
 ↪second_number}"
    print(text)
elif choice == 2:
    text = f"Substraction between {first_number} and {second_number} is:␣
 ↪{first_number - second_number}"
    print(text)
elif choice == 3:
    text = f"Multiplication of {first_number} and {second_number} is:␣
 ↪{first_number * second_number}"
    print(text)
elif choice == 4:
    text = f"Division of {first_number} and {second_number} is: {first_number /␣
 ↪second_number}"
    print(text)
```

```
Enter the first number: 2
Enter the second number: 3
Which operation you want to:
1) Addition
2) Substraction
3) Multiplication
4) Division
Enter your choice: 2
Substraction between 2.0 and 3.0 is: -1.0
```

2 Conditional expressions

[53]:
```
x = 4

if x % 2 == 0:
    x = x * x
else:
    x = x * x* x

print(x)
```

```
16
```

[55]:
```
# expression if condition else expression
x = 4
x = x * x if x % 2 == 0 else x * x * x

print(x)
```

16

PROGRAM 4: Write a program to find the smaller number among the two numbers.

[57]:
```
num1 = int(input("Enter first number: "))
num2 = int(input("Enter Second number: "))

min = num1 if num1 < num2 else num2

print("min:", min)
```

```
Enter first number: 2
Enter Second number: 3
min: 2
```

PROGRAM 5: Write a program to determine the character entered by user

[63]:
```
char = input("Press any key: ")

if(char.isalpha()):
    print("You entered a character")
elif(char.isdigit()):
    print("You entered a digit")
elif(char.isspace()):
    print("You entered a space")
elif(char.isdecimal()):
    print("You entered a decimal")
```

```
Press any key: 4
You entered a digit
```

PROGRAM 6: Write a program to find the greatest number from three numbers.

[68]:
```
first_number = eval(input("Enter the first number: "))
second_number = eval(input("Enter the second number:"))
third_number = eval(input("Enter the third number: "))

text = "The greatest number is: "

if first_number >= second_number and first_number >= third_number:
    print(text, first_number)
elif second_number >= first_number and second_number >= third_number:
    print(text, second_number)
else:
    print(text, third_number)
```

```
Enter the first number: 11.2
Enter the second number:11.3
```

```
Enter the third number: 11.4
The greatest number is:  11.4
```

[ ]: