Python

Suresh techs

Operators

Chapter 11

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Python programming operations

```
pinNumber = input('Enter your pin number')
amount = input('Enter your amount')
```

```
a = 10
b = 20
c = a + b

print(a,b,c,sep="->")
```

a,b,c are operands

+, = are operators

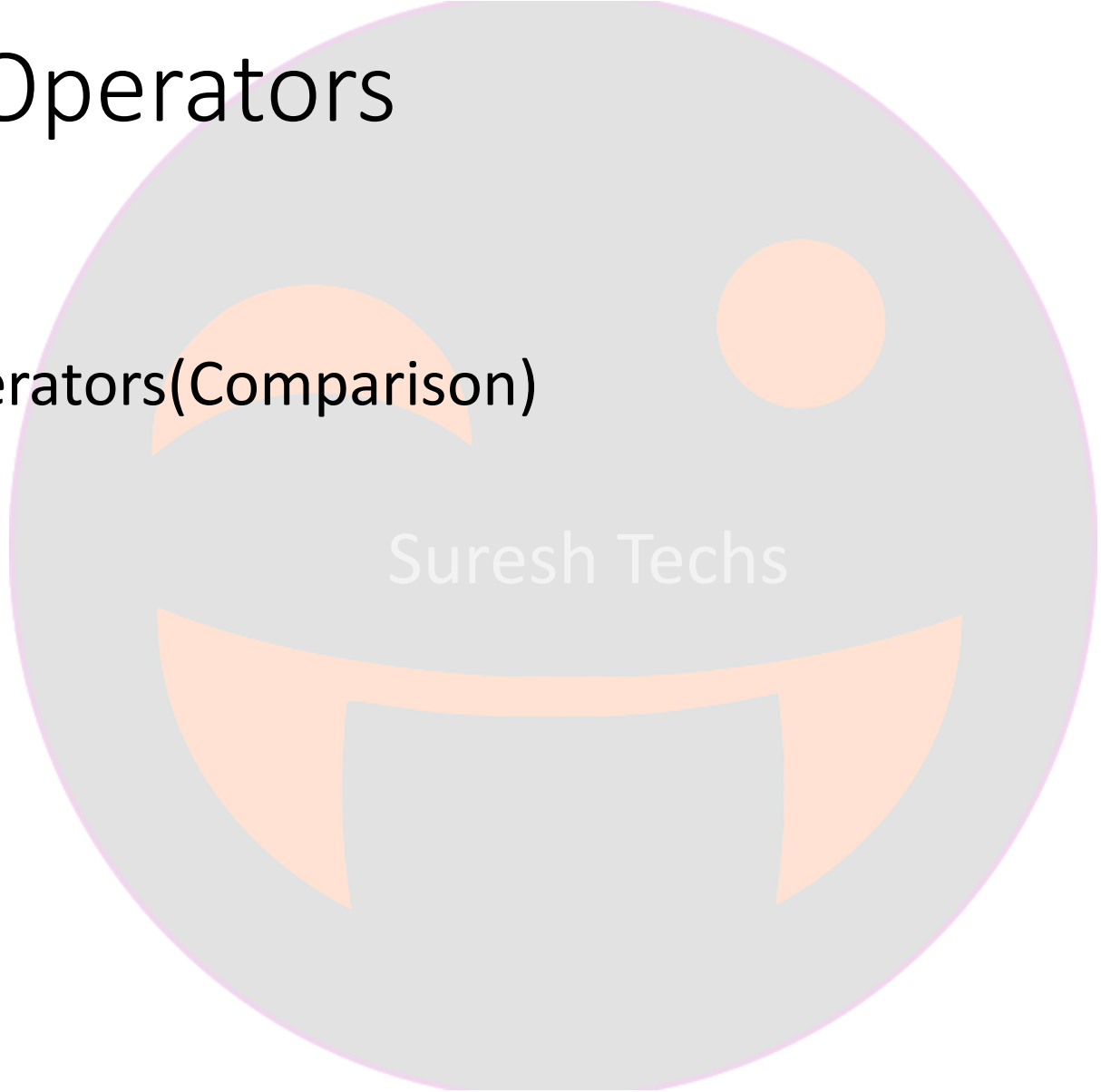
```
10->20->30
```

Operators

- Are used to perform various operations on values and variables

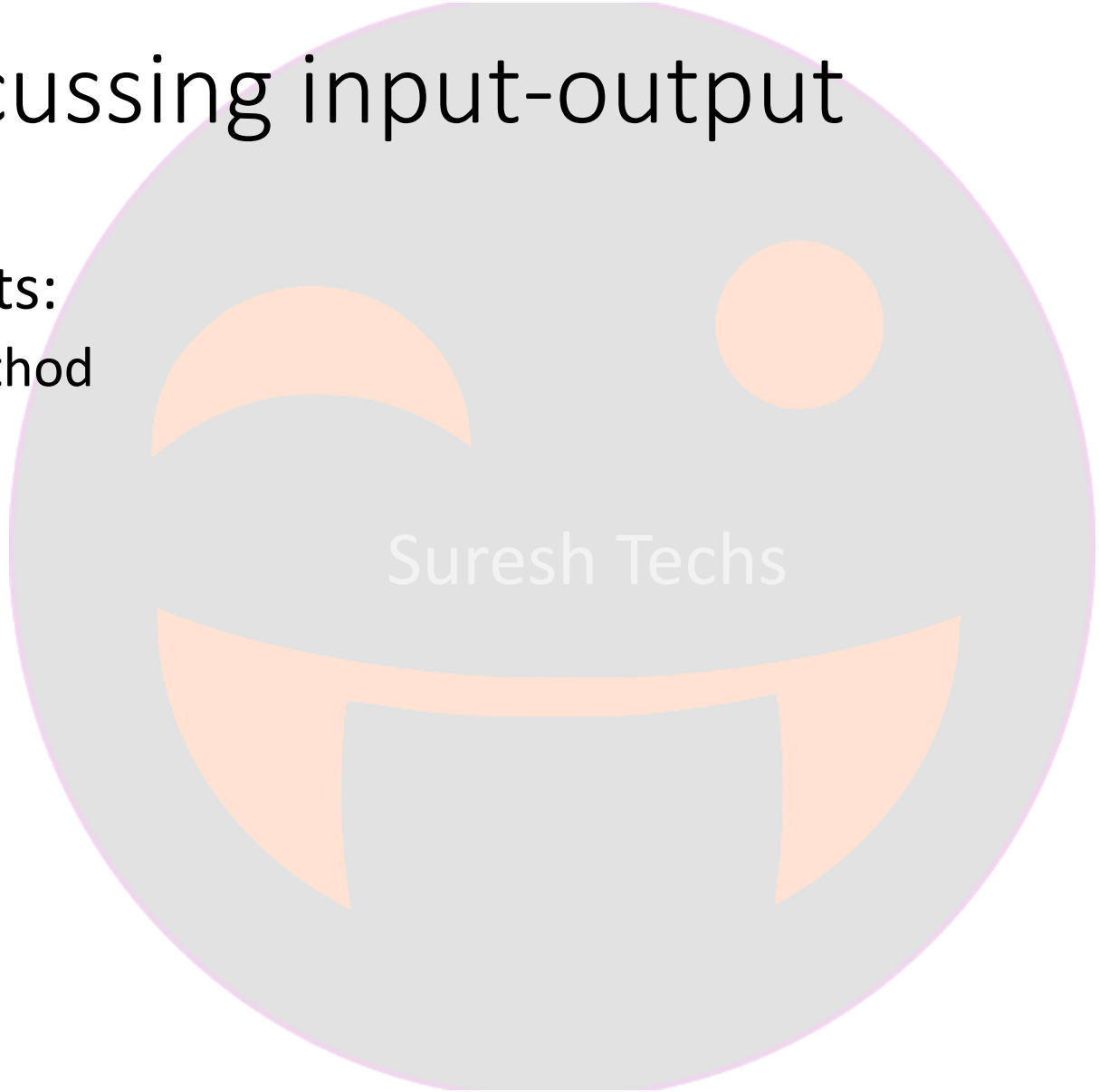
Different Operators

- Arithmetic
- Relational operators(Comparison)
- Assignment
- Logical
- Bitwise



While discussing input-output

- Fancier outputs:
  - format() method



format() method on print function

- What if I wanted to print “Take your cash 1000, balance in your account is 49000”?
- Let’s use format() method


```
print('Take your cash {},balance in your account is {}'.
format(cashValue,remainingAmount),sep="@@",end="===")
```

Will see more examples soon

Arithmetic operators

Operator	Description	Syntax
+	Adds two operands	a+b
-	Subtracts two operands	a-b
*	Multiplies two operands	a*b
/	Divides the first operand by second (float)	a/b
//	Divides the first operand by second (floor)	a//b
%	Returns the reminder when first operand is divided by second	a%b
**	Returns first to the power of second	a**b

Relational operators

- Returns either True or False

Operator	Description	Syntax
==	True if both operands are equal	a==b
>	True if left operand is greater than right	a>b
<	True if left operand is less than right	a<b
>=	True if left operand is greater than or equal to right operand	a>=b
<=	True if left operand is less than or equal to right operand	a<=b
!=	Not equal to: True if the operands are not equal	a!=b

Program

```
#Relational operations
a = 9
b = 2

print(a==b)
print(a>b)
print(a<b)
print(a>=b)
print(a<=b)
print(a!=b)
```

```
False
True
False
True
False
True
```

Logical operators

Operator	Description	Syntax
and	True if both the operands are true	a and b
Or	True if one of the operand is true	a or b
not	True if operand is false, vice versa	not a

Program

```
#Logical operators

a = True
b = False

print(a and b)
print(a or b)
print(not b)
print(not a)
```



```
False
True
True
False
```

Bitwise operators

Operator	Description	Syntax
&	Bitwise AND	a & b
|	Bitwise OR	a | b
~	Bitwise NOT	~a
^	Bitwise XOR	a^b
>>	Bitwise right shift	a>>
<<	Bitwise left shift	a<<

Note: Will be discussed later in the advanced course

Assignment operators

Operator	Description	Syntax
=	Assign right side expression to left side operand	a = b+c
+=	AddAnd – Adds right side operand with left side operand and then assign it to left side operand	a+=b a=a+b
-=	SubtractAnd – Subtracts right side operand from left side operand and then assign it to left side operand	a-=b a=a-b
*=	MultiplyAnd – Multiplies right side operand with the left side operand and then assign it to the left side operand	a*=b a=a*b

Similarly for other operators:

a/=b a=a/b	a%=b a=a%b	a//=b a=a//b	a**=b a=a**b	a&=b a=a&b	a|=b a=a|b	a^=b a=a^b	a>>=b a=a>>b	a <<= b a= a << b

Program

```
#Assignment operators
a=5
b=2
a+=5
print(a)
a-=5
print(a)
a*=5
print(a)
a/=b
print(a)
a//=b
print(a)
a%=b
print(a)
b**=3
print(b)
```

```
10
5
25
12.5
6.0
0.0
8
```

Few more

- Identity operators(is, is not)
- **Membership operators(in, not in)**
- Ternary operator(true?something : somethingelse)
- Python: [on_true] if [expression] else [on_false]
- Will talk about them later

Program for you (try on your own)

- Find age of the person by asking birth year

```
birthYear = int(input('enter your year of birth'))
currentYear = 2021
print('Your age is:',currentYear-birthYear)
```

Program for you (try on your own)

- But this code will only work in this year
- Will use datetime library
  - **from datetime import date**


```
birthYear = int(input('enter your year of birth'))
currentYear = date.today().year
print('Your age is:',currentYear-birthYear)
```

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