



# SESSION - 6

## WHILE LOOP



# Learning Outcomes:

- **Remember:** The students will list different types of blocks being learnt in the session .
- **Understand:** - They will focus on understanding the WHILE LOOP
- **Apply:** They will apply While loop to build different codes
- **Analyze:** They will check their understanding by developing a code of multiple programs.
- **Create:** They will create the code in EduBlocks

# WHILE LOOP

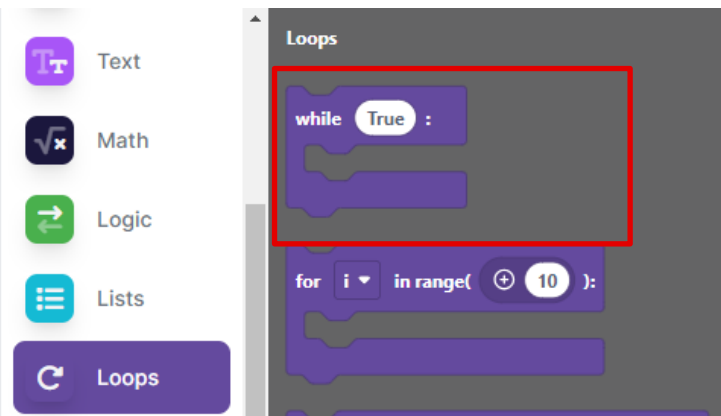
- While Loop is mainly used to run the code for either unlimited times or until the condition is matched
- For example if we want to make a code to print one number or a name for 100 time



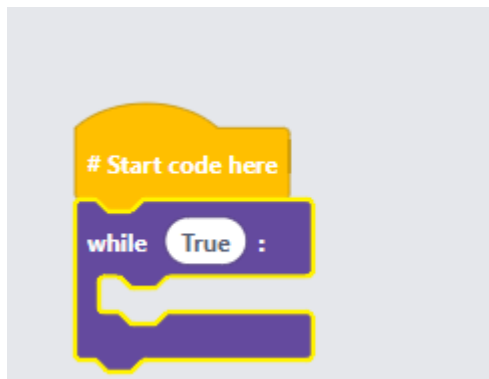
## TASK 01:-

**</> WRITE A PROGRAM TO PRINT THE NAME  
USING WHILE LOOP**

# Program Step 1:-



Get a while loop from loops drawer




Code

```
1 #Start code here
2 while True:
3     pass
4
```

# Program Step 2:-



Get print "Hello World" Block to print the name multiple times



Code

```
1 #Start code here
2 while True:
3     print("OMOTEC")
4
```

## Output

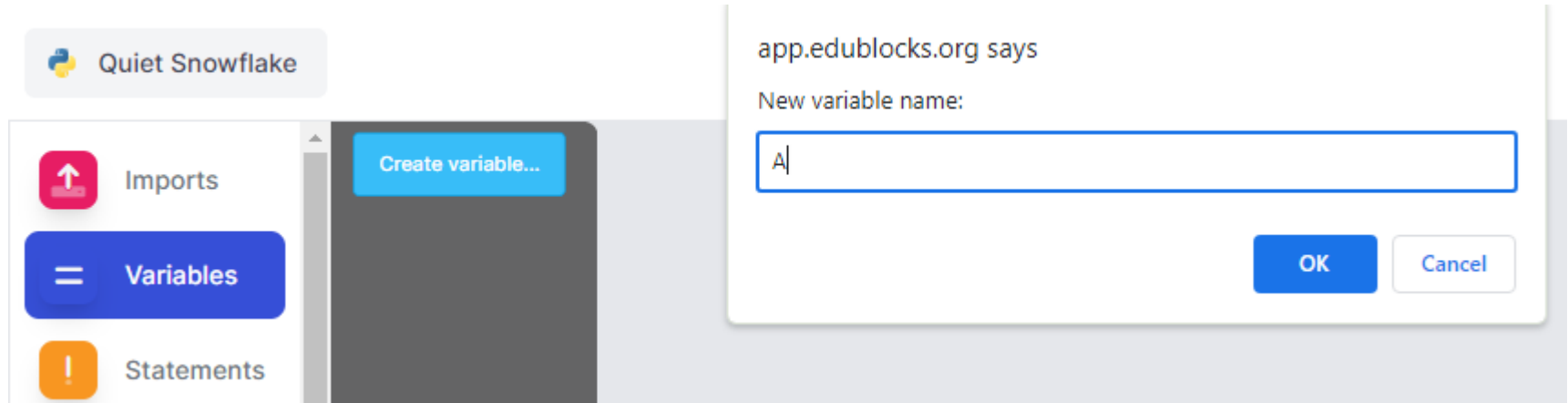
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## TASK 02:-

**WRITE A PROGRAM WHERE  $A = 20$  and  $B = 5$  ,  
PRINT A IS BIGGER UNTIL A BECOMES  
LESSER THAN B AND DECREASE A EVERY  
SECOND**

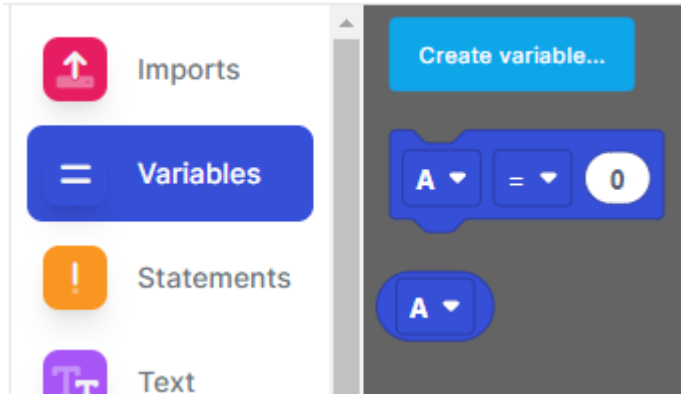


# Program Step 1:-

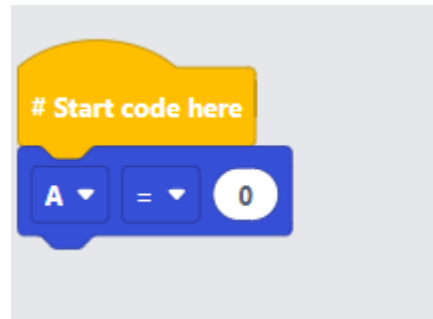


Create a variable with name 'A'

# Program Step 2:-



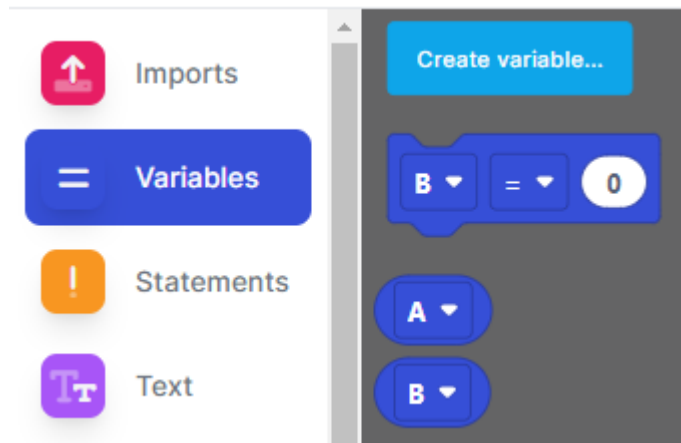
Initialize the A variable



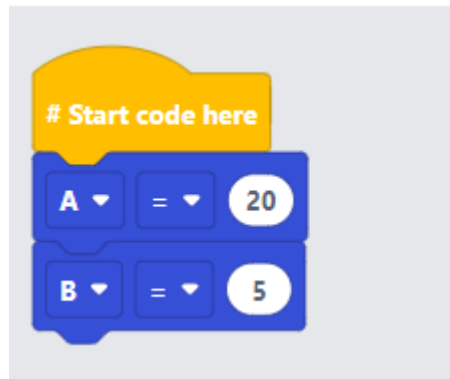
Code

```
1 #Start code here
2 A = 0
3
```

# Program Step 3:-




The same way create another variable with name 'B', and as mentioned in the question, initialize A = 20 and B = 5





Code


```
1 #Start code here
2 A = 20
3 B = 5
4
```

# Program Step 4:-

 Imports

 Variables

 Statements

 Text

Output

```
print( "Hello World" )
```

```
print( 1 )
```

Get print "Hello World" block and write "A is "  
to show the value of A

```
# Start code here
```

```
A = 20
```


```
B = 5
```

```
print( "A is" )
```

Code


```
1 #Start code here
2 A = 20
3 B = 5
4 print("A is")
5
```

# Program Step 5:-

 Imports

 Variables

 Statements

 Text

Output

```
print( "Hello World" )
```

```
print( 1 )
```

Get print variable block and write A on it to print the value of variable A

```
# Start code here
```

```
A = 20
```

```
B = 5
```

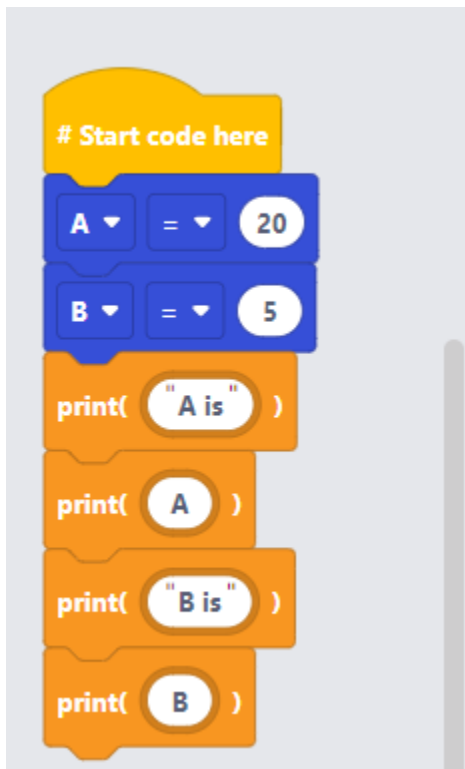
```
print( "A is" )
```

```
print( A )
```

Code

```
1 #Start code here
2 A = 20
3 B = 5
4 print("A is")
5 print(A)
6
```

# Program Step 6:-

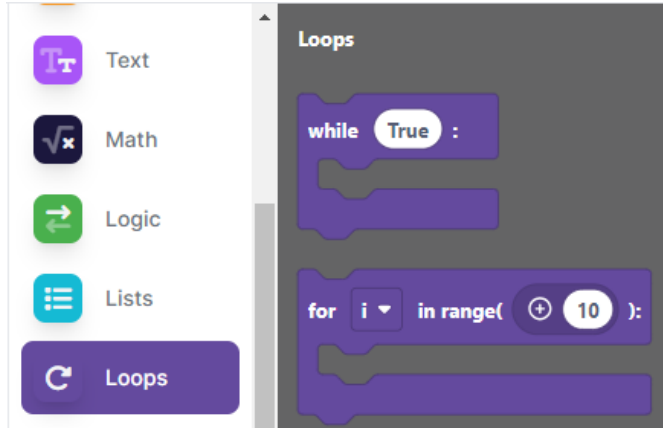


Code

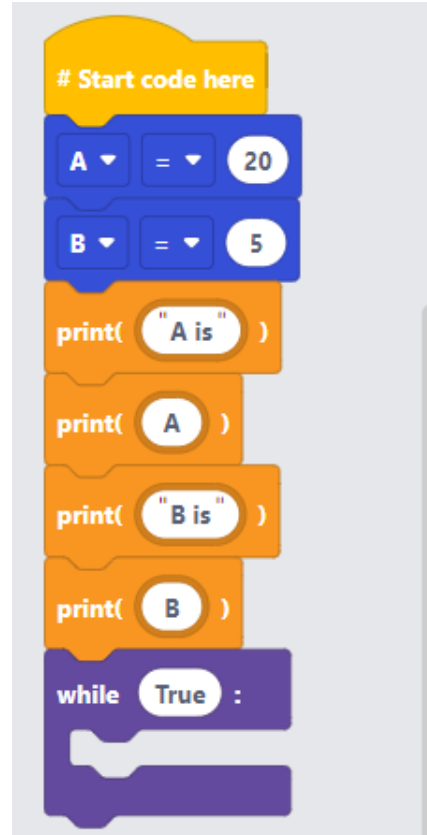
```
1 #Start code here
2 A = 20
3 B = 5
4 print("A is")
5 print(A)
6 print("B is")
7 print(B)
8
```

Follow the same procedure to print the value of variable B

# Program Step 7:-



Add a While loop to the code to make it run multiple times



Code

```
1 #Start code here
2 A = 20
3 B = 5
4 print("A is")
5 print(A)
6 print("B is")
7 print(B)
8 while True:
9     pass
10
```

# Program Step 8:-

Imports

Variables

Statements

Text

Output

```
print( "Hello World" )
```

```
print( 1 )
```

```
# Start code here
```

```
A = 20
```

```
B = 5
```

```
print( "A is" )
```

```
print( A )
```

```
print( "B is" )
```

```
print( B )
```

```
while True :
```

```
    print( "A is bigger" )
```

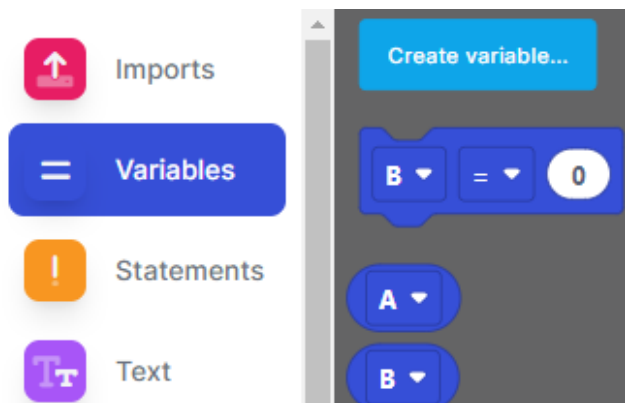
Code

```
1 #Start code here
2 A = 20
3 B = 5
4 print("A is")
5 print(A)
6 print("B is")
7 print(B)
8 while True:
9     print("A is bigger")
10
```

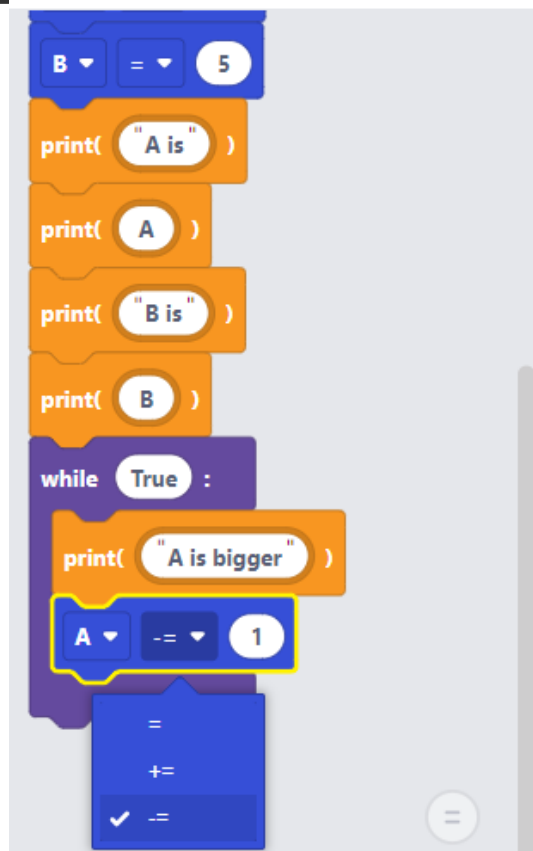
Add a print "Hello World" block inside while loop and print "A is bigger"



# Program Step 9:-



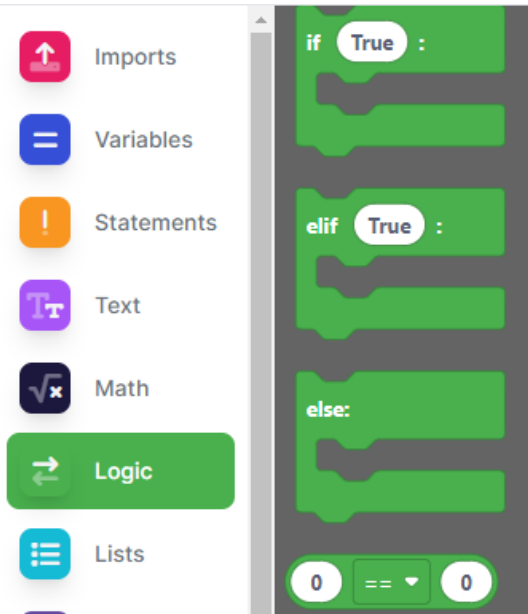
Get a variable initialize block and change the equals to into minus equals to, This means whatever is the value of variable subtract some number from it



Code

```
1 #Start code here
2 A = 20
3 B = 5
4 print("A is")
5 print(A)
6 print("B is")
7 print(B)
8 while True:
9     print("A is bigger")
10    A -= 1
11
```

# Program Step 10:-



Imports

Variables

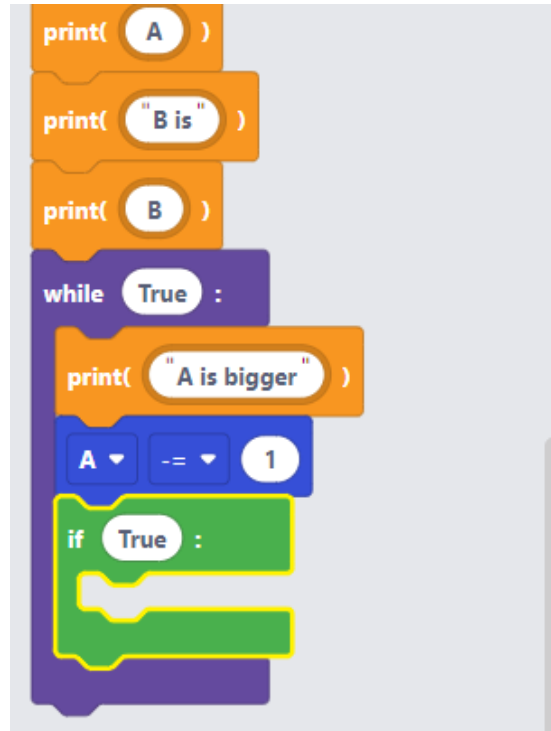
Statements

Text

Math

Logic

Lists



```

print( A )
print( "B is" )
print( B )
while True :
    print( "A is bigger" )
    A -= 1
    if True :

```

Code

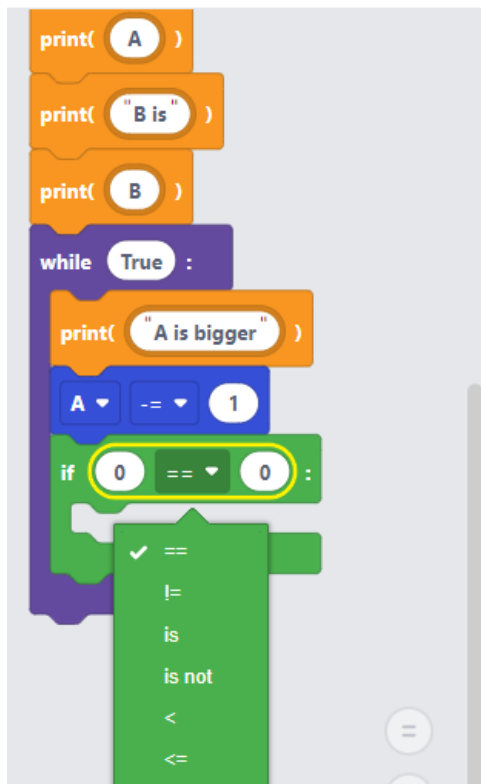
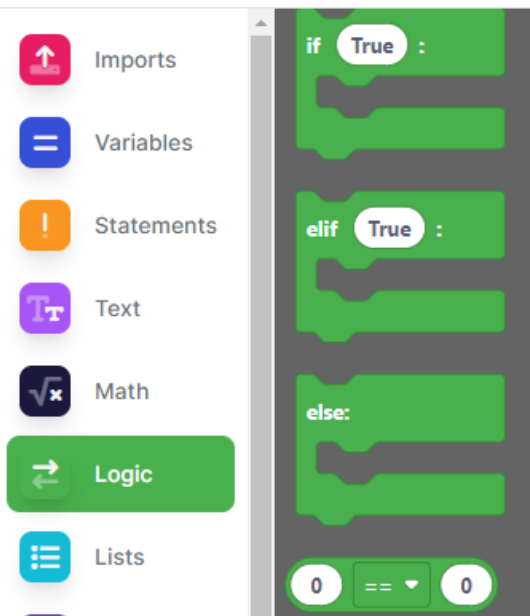
```

1 #Start code here
2 A = 20
3 B = 5
4 print("A is")
5 print(A)
6 print("B is")
7 print(B)
8 while True:
9     print("A is bigger")
10    A -= 1
11    if True:
12        pass
13

```

Add an if condition which will compare the values of A and B

# Program Step 11:-

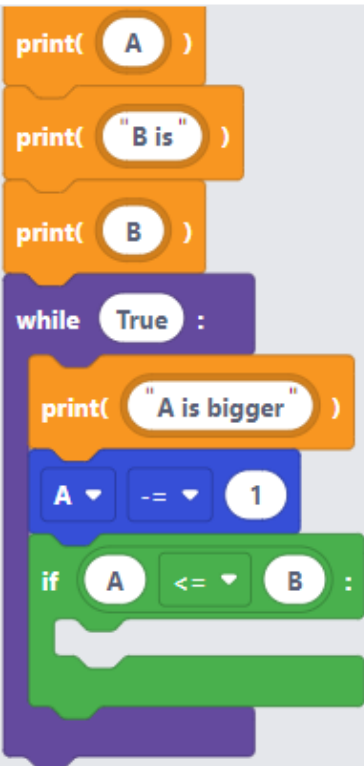


Code

```
1 #Start code here
2 A = 20
3 B = 5
4 print("A is")
5 print(A)
6 print("B is")
7 print(B)
8 while True:
9     print("A is bigger")
10    A -= 1
11    if 0 == 0:
12        pass
13
```

Get a comparison block and change it to less than equals to, to compare the values

# Program Step 12:-



Code

```
1 #Start code here
2 A = 20
3 B = 5
4 print("A is")
5 print(A)
6 print("B is")
7 print(B)
8 while True:
9     print("A is bigger")
10    A -= 1
11    if A <= B:
12        pass
13
```

Write A on the left side and B on the right side on the comparison block to compare if the value of A is smaller or equals to B

# Program Step 13:-

Imports

Variables

Statements

Text

Output

print( "Hello World" )

print( 1 )

Add a print "Hello World" block inside if condition so, If  $A == B$ , Print Both are equal

print( A )

print( "B is" )

print( B )

while True :

print( "A is bigger" )

A -= 1

if A <= B :

print( "Both are equal" )

Code

```
1 #Start code here
2 A = 20
3 B = 5
4 print("A is")
5 print(A)
6 print("B is")
7 print(B)
8 while True:
9     print("A is bigger")
10    A -= 1
11    if A <= B:
12        print("Both are equal")
13
```

# Program Step 13:-

- Imports
- Variables
- Statements
- Text
- Math
- Logic
- Lists
- Loops
- Definitions
- Turtle
- Graphs

## Loops

while True :

for i in range( )

for i in range( )

for i in :

break

print( A )

print( "B is" )

print( B )

while True :

print( "A is bigger" )

A -= 1

if A == B :

print( "Both are equal" )

break

Code

Output

```
1 #Start code here
2 A = 20
3 B = 5
4 print("A is")
5 print(A)
6 print("B is")
7 print(B)
8 while True:
9     print("A is bigger")
10    A -= 1
11    if A == B:
12        print("Both are equal")
13        break
14
```

# Full Program

```
# Start code here
A = 20
B = 5
print("A is ")
print(A)
print("B is ")
print(B)
```



```
while True :
    print("A is bigger")
    A -= 1
    if A == B :
        print("Both are equal")
        break
```

# Syntax Program

```

1  #Start code here
2  A = 20
3  B = 5
4  print("A is")
5  print(A)
6  print("B is")
7  print(B)
8  while True:
9      print("A is bigger")
10     A -= 1
11     if A == B:
12         print("Both are equal")
13         break
14

```



# Output

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A is

20

B is

5

A is bigger

A is bigger

A is bigger

A is bigger

A is bigger

A is bigger

A is bigger

A is bigger

A is bigger

A is bigger

A is bigger

A is bigger

A is bigger

A is bigger

A is bigger

Both are equal

# ACTIVITY SHEETS

### Question 1:

What is a programming loop?

- A. Check the given condition
- B. Assigns the loop
- C. import libraries
- D. repeats the code

## Question 2:

What is the meaning of statement:

`while True:`

- A. Repeat the code 5 times
- B. Repeat the code forever
- C. Assign the value
- D. Check the condition

### Question 3:

What does the following code do:

```
A-=10
```

- A. Assigns 10 value to A
- B. Add 10 to value A
- C. Subtract 10 from the value A
- D. Compare if A is 10

#### Question 4:

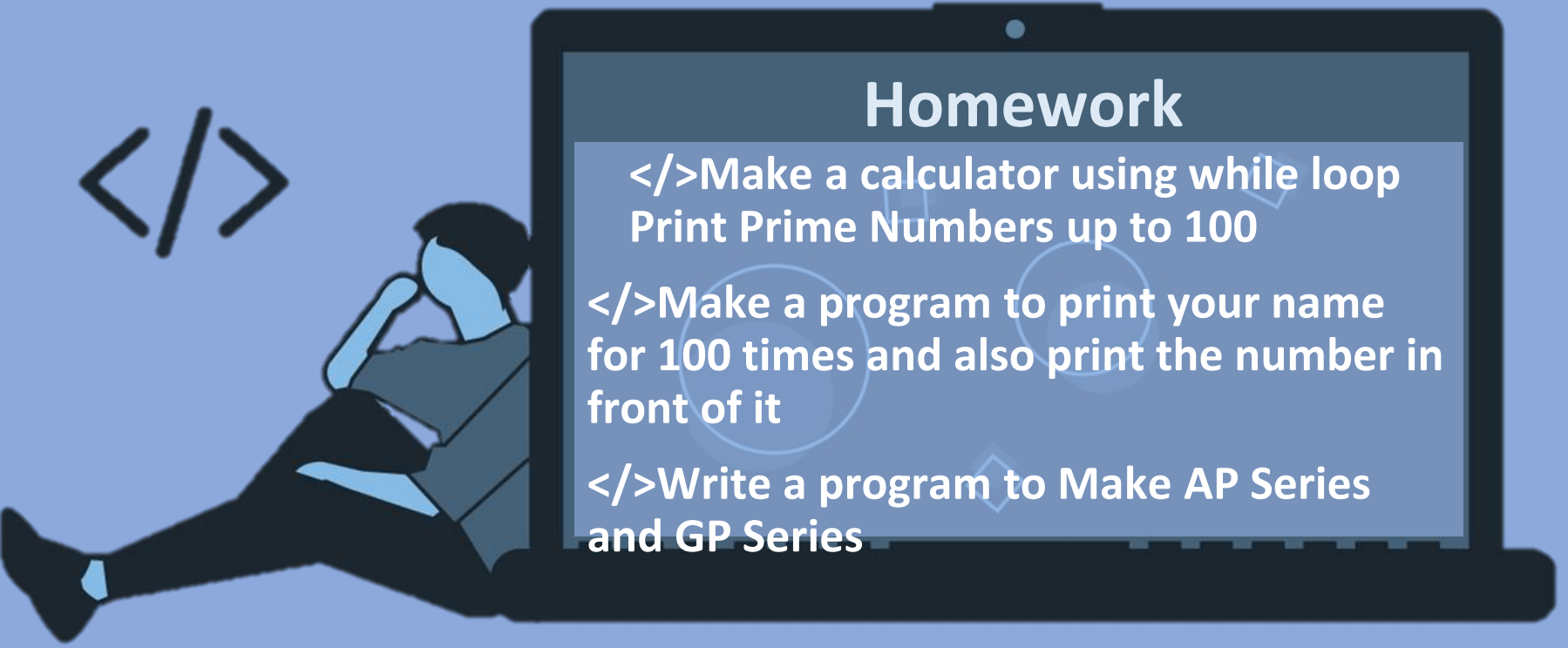
What is the function of break statement?

- A. Break the loop
- B. Break the condition
- C. Remove the value from the variable
- D. Add a delay to the code

### Question 5:

What is the difference between print ("Hello World") and print(X)

- A. Data type is different
- B. condition is different
- C. different loops
- D. no difference



## Homework

</>Make a calculator using while loop  
Print Prime Numbers up to 100

</>Make a program to print your name  
for 100 times and also print the number in  
front of it

</>Write a program to Make AP Series  
and GP Series