



SESSION - 2

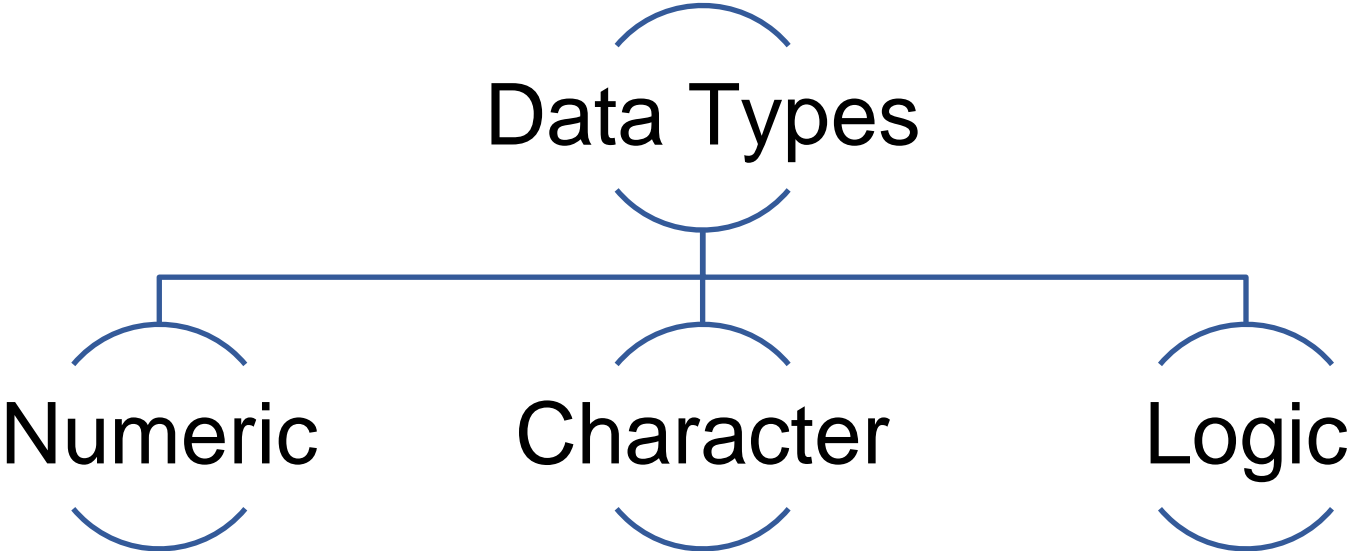
VARIABLES



Learning Outcomes:

- **Remember:** The students will list different types of blocks being learnt in the session .
- **Understand:** - They will focus on understanding different data types & variables
- **Apply:** They will learn to apply and check the execution of the learnt data types.
- **Analyze:** They will check their understanding by developing a code.
- **Create:** They will create the code in EduBlocks

Data types are like categories for information. Imagine you have a magic box, and this box can hold different types of things. Data types help us know what kind of things can go into the box.



NUMERIC DATA TYPES

- ❑ Numeric –
 - only numeric numbers comes under this type 0 to 9
 - it covers all the numeric values including negative number



CHARACTER DATA TYPE



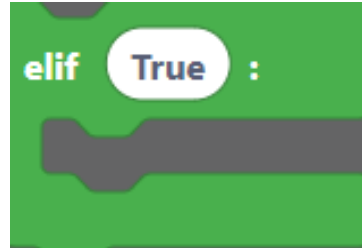
Character or String-

- All the alphabets A to Z, a to z and 0 to 9 including special characters comes in this category.
- Remember 0 to 9 in this category is different from numeric.
- this data type is represented by “” or “ ” example - “omotec”,

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

LOGICAL DATA TYPE

- ❑ Logical –
 - this type of variable only have 2 elements 0 and 1.
 - True and False



VARIABLES

- **What is a variable?**

Think of a variable as a box or a jar with a label on it. You can put things inside this box and give it a name. The name is like the label on the jar, and it helps you remember what's inside.



- **What can you put in a variable?**

You can put different things in a variable. It could be a number, like how many candies you have. It could be a word, like your name. It could even be a whole list of things, like your favorite colors.

VARIABLES

Variable is a memory element in the programming. It is mainly used to store any value of any data type.

- It can Store only one value at a time
- Value can be of any data type
- A variable always have a name
- Examples:

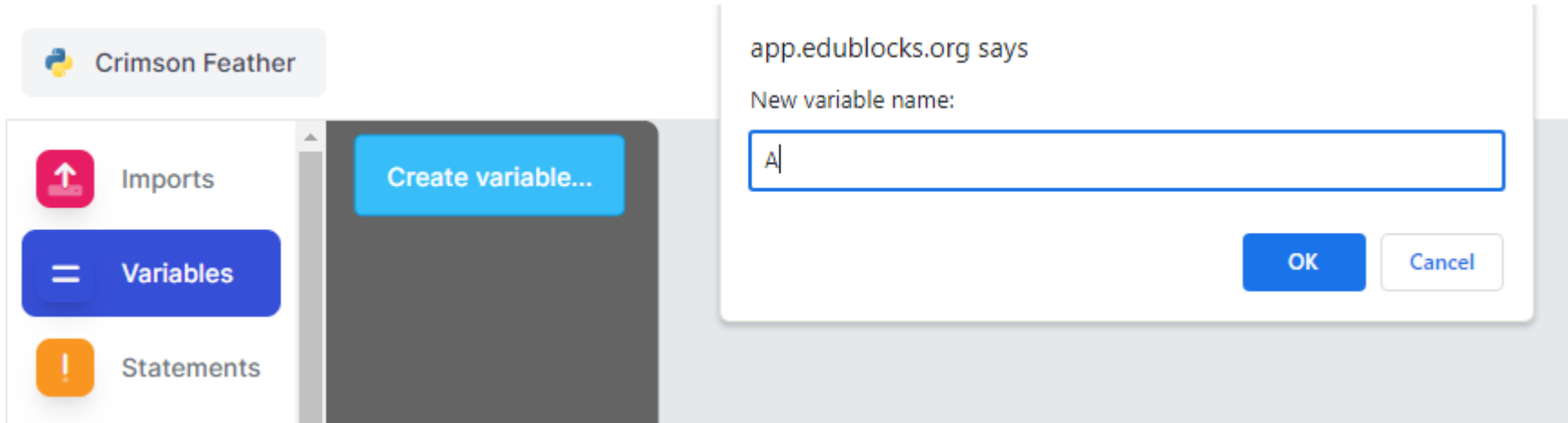
x = 5

y = "John"

TASK 01:-

**</> WRITE A PROGRAM TO PRINT A NUMERIC
VALUE**

Program Step 1:-



Create a variable name it as "A"

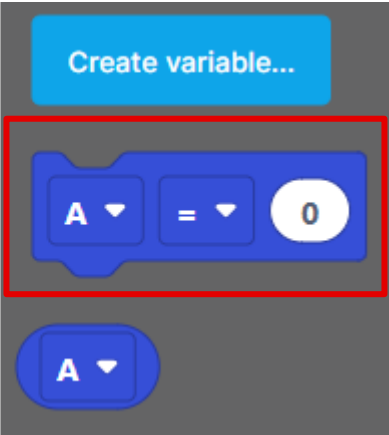
Program Step 2:-

Imports

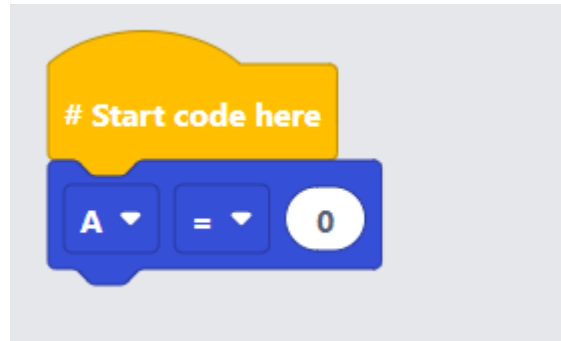
Variables

Statements

Text



Initialize the "A" variable



Code

Output

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

Program Step 3:-




Code


Output


```
1 #Start code here
2 A = 10
3
```


Store an int block to specify that input will be stored value


Program Step 4:-

 Imports

 Variables

 Statements

 Text

 Math

Output

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

```
print( 1 )
```

Connect print variable block for print the variable

```
# Start code here
```

```
A = 10
```

```
print( 1 )
```

```
1 #Start code here
2 A = 10
3 print(1)
4
```

Program Step 5:-

Imports

Variables

Statements

Text

Create variable...

A = 0

A

Add the 'A' value block to print blocks

Start code here

A = 10

print(A)

```
1 #Start code here
2 A = 10
3 print(A)
4
```

Output



Save



Run

Start code here

A ▾

= ▾

10

print(A ▾)

Code

```
1 #Start code here
2 A = 10
3 print(A)
4
```

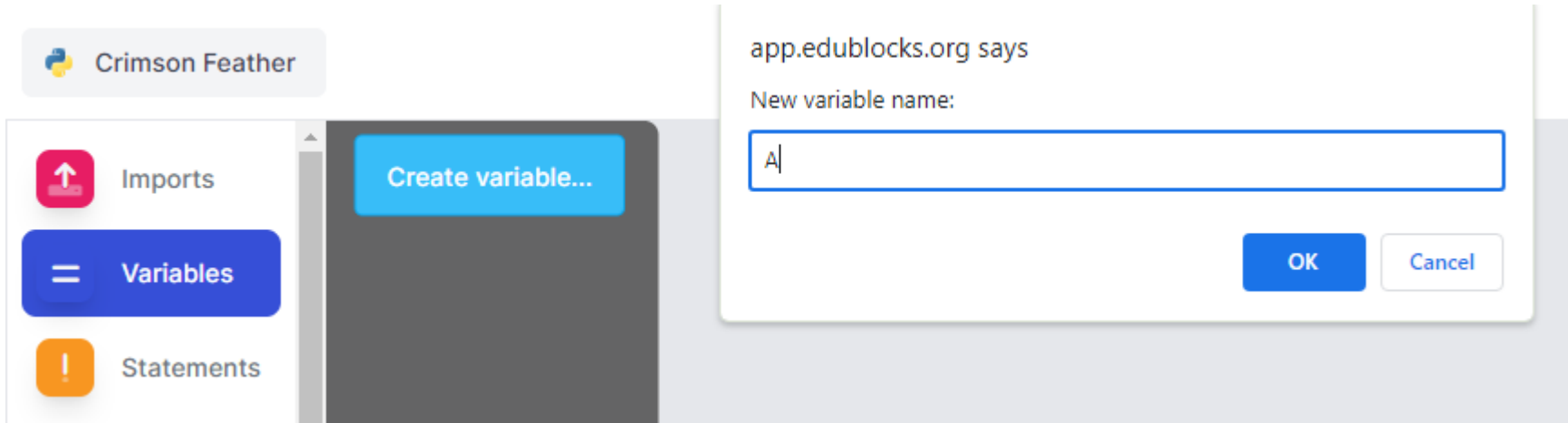
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TASK 02:-

**</> WRITE A PROGRAM TO PRINT A
CHARACTER**

Program Step 1:-



Create a variable name it as "A"

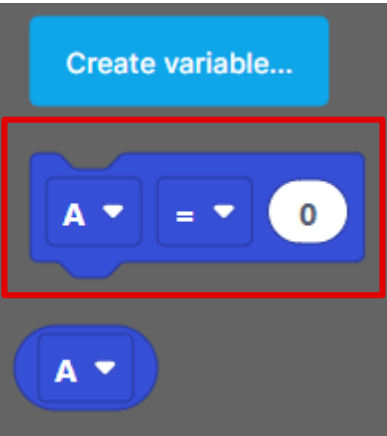
Program Step 2:-

Imports

Variables

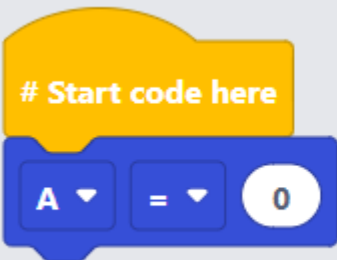
Statements

Text



Initialize the "A" variable

Start code here



Code

Output

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

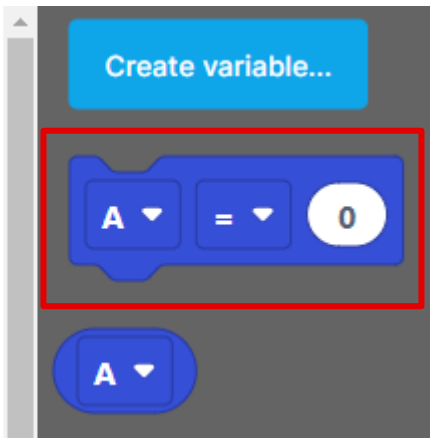
Program Step 3:-

Imports

Variables

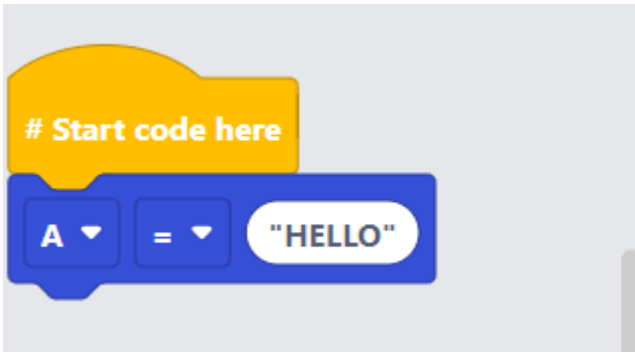
Statements

Text



Store an int block to specify that input will be stored character with “double quotation marks”

Start code here



Code

```
1 #Start code here
2 A = "HELLO"
3
```

Program Step 4:-

Imports

Variables

Statements

Text

Math

Output

print("Hello World")

print(1)

Connect print variable block for print the variable

Start code here

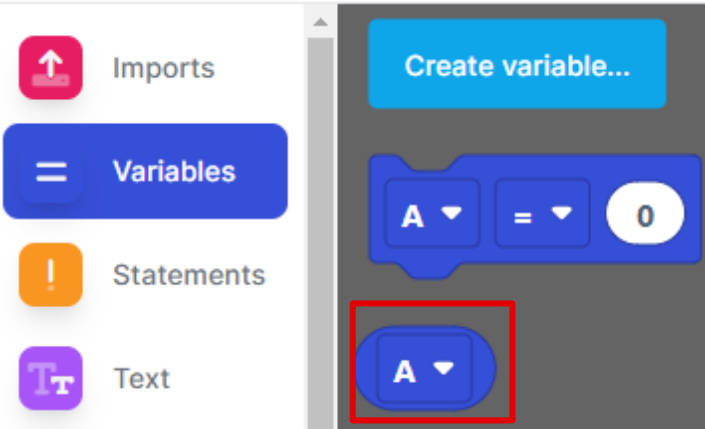
A = "HELLO"

print(1)

Code

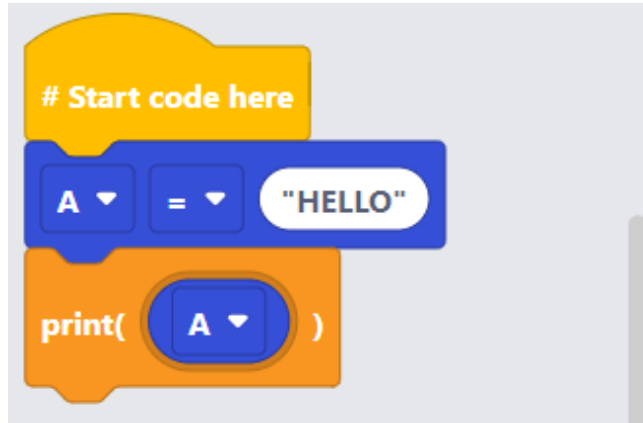
```
1 #Start code here
2 A = "HELLO"
3 print(1)
4
```

Program Step 5:-



The block palette on the left includes: Imports (pink arrow icon), Variables (blue equals icon), Statements (orange exclamation mark icon), and Text (purple T icon). The workspace shows a 'Create variable...' block, followed by a variable block 'A' set to '0'. A red box highlights a small 'A' value block at the bottom of the workspace.

Add the 'A' value block to print blocks



The workspace shows a sequence of blocks: a yellow 'Start code here' block, a blue variable block 'A' set to 'HELLO', and an orange 'print('A')' block where the 'A' is a value block from the variable 'A'.

```
1 #Start code here
2 A = "HELLO"
3 print(A)
4
```

Output

Start code here

A ▼


= ▼

"HELLO"

print(A ▼)

Code

```
1 #Start code here
2 A = "HELLO"
3 print(A)
4
```

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HELLO

TASK 03:-

**</> WRITE A PROGRAM TO CHANGE THE DATA
TYPE OF THE VARIABLE**

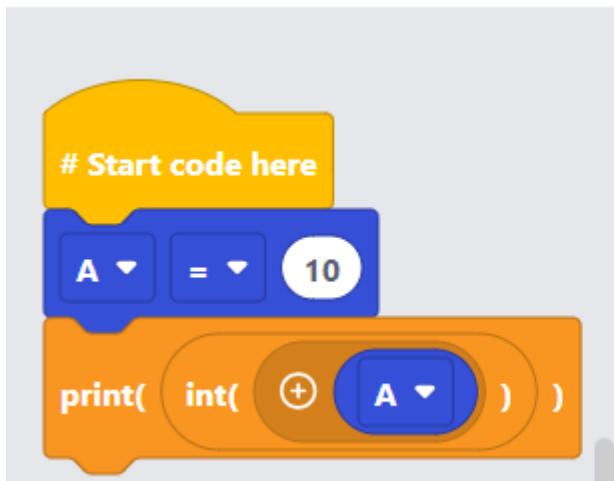
INTEGER

- They are often called just integers or ints, are positive or negative whole numbers with no decimal point.



```
1 int(1)
2
```


Program



Code

```
1 #Start code here
2 A = 10
3 print(int(A))
4
```

Note: Only the numeric value will change to integer.
we can not change an alphabet into integer

Output


Start code here

A ▼ = ▼ 10

print(int(+ A ▼))

Code

Output

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TASK 04:-

**</> WRITE A PROGRAM TO CHANGE THE DATA
TYPE OF THE VARIABLE**

Program

Start code here

print(input("What is your name?"))

Code

```
1 #Start code here
2 print(input("What is your name?"))
3
```

This command allows you to take input and data from the user to perform certain operation during output


Output

Start code here

```
print( input( "What is your name?" ) )
```

Code

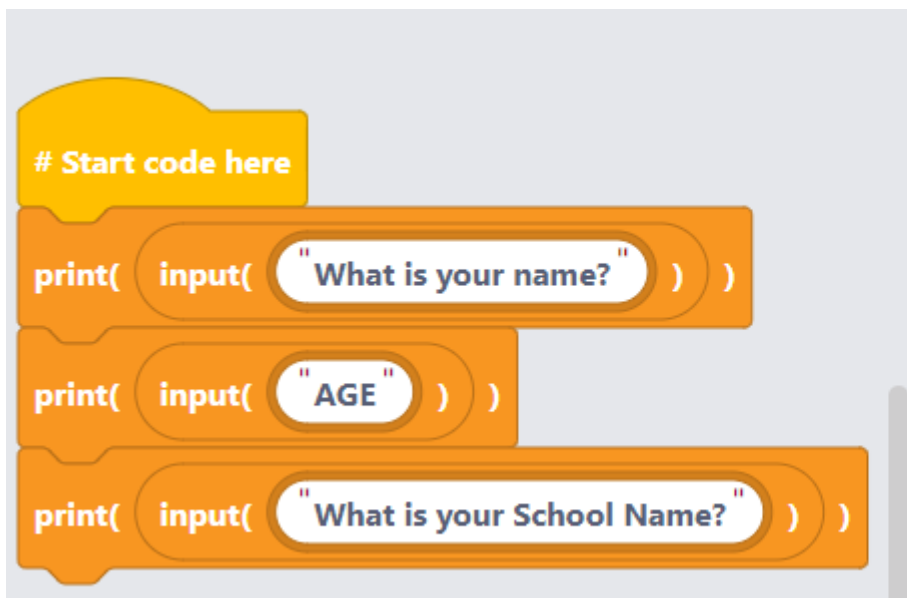
Output

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What is your name? omotec
omotec

TASK 05:-

</> WRITE A PROGRAM TO DISPLAY YOUR DETAILS LIKE NAME,AGE,SCHOOL NAME IN THREE DIFFERENT LINES

Program



Code

```
1 #Start code here
2 print(input("What is your name?"))
3 print(input("AGE"))
4 print(input("What is your School Name?"))
5
```

Output

Start code here

```
print( input( "What is your name?" ) )
```

```
print( input( "AGE" ) )
```

```
print( input( "What is your School Name?" ) )
```

Code

Output

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What is your name? omotec

omotec

AGE 34

34

What is your School Name? john high school

john high school

TASK 06:-

</> WRITE A PROGRAM TO SAVE THE NUMERIC INPUT VALUE FROM USER TO A VARIABLE.

Program

Start code here

A ▾ = ▾ int(⊕ input(" ENTER THE NUMBER "))

print(A ▾)

Code

```
1 #Start code here
2 A = int(input("ENTER THE NUMBER"))
3 print(A)
4
```

Output

Start code here

```
A = int( + input( "ENTER THE NUMBER" ) )
```

```
print( A )
```

Code

Output

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ENTER THE NUMBER 12

12

ACTIVITY SHEETS

Question 1:

Which of the following statements assigns the value 100 to the variable x in Python:

- A. Let x=100
- B. X<<100
- C. x=100
- D. X=!100

Question 2:

Which of the following are valid Python variable names:

- A. `return`
- B. `ver.1.3`
- C. `route466`
- D. `4square`

Question 3: Look at the following code: What type of data is stored in the variable age?

```
age = 23
```

- A. int
- B. float
- C. double
- D. name

Question 4:

If I want to store my height in a variable, which of the following would be a good variable name in best practice?

- A. inch
- B. Height
- C. adxxcc
- D. number

Question 5: Look at the following code:

```
age = "23"
```

```
age = int(age) What does the int() function do to the data in my variable?
```

- A. Does nothing
- B. Changes the string to float
- C. Changes the number to string
- D. Changes the string to integer

