SESSION - 10
LISTS

Learning Outcomes:

- **Remember**: The students will list different aspects of a LIST creation and its execution .
- **Understand**: They will focus on understanding the execution and applications of LISTS,
- **Apply**: They will apply the concept of LIST to work on multiple programs
- **Analyze**: They will check their understanding by developing the codes.
- **Create**: They will create the code in EduBlocks

Remember & Understanding

LISTS

Python offers a range of compound datatypes often referred to as sequences. List is one of the most frequently used and very versatile datatype used in Python.

In Python programming, a list is created by placing all the items (elements) inside a square bracket [ ], separated by commas.

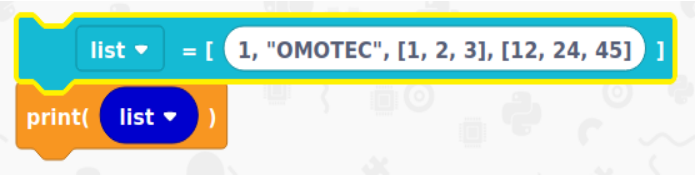
It can have any number of items and they may be of different types (integer, float, string etc.).

LIST INDEX

List Index

We can use the index operator [] to access an item in a list. Index starts from 0. So, a list having 5 elements will have index from 0 to 4.

Trying to access an element other that this will raise an IndexError. The index must be an integer. We can't use float or other types; this will result into TypeError.



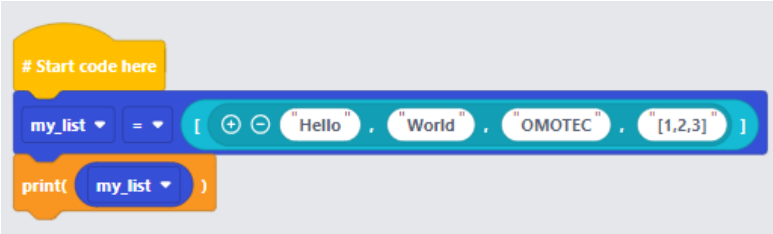

```
list2 = [1, "OMOTEC", [1, 2, 3], [12, 24, 45]]
print(list2)
```

Nested List: A list can even have another list as an item. This is called nested list

INDEXING AND NEGATIVE INDEXING

Negative indexing: Python allows negative indexing for its sequences. The index of -1 refers to the last item, -2 to the second last item and so on.

+ INDEXING

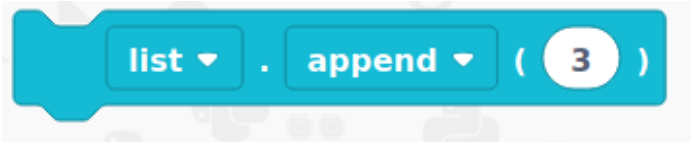



```
Powered by trinket
['Hello', 'World', 'OMOTEC', '[1,2,3]']
```

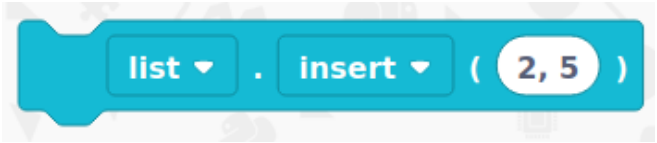
- INDEXING


```
Powered by trinket
[1,2,3]
OMOTEC
```

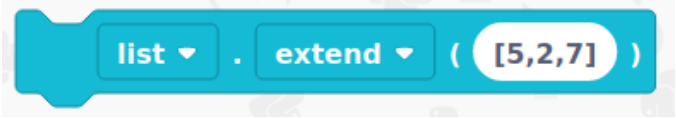
LIST OPERATIONS



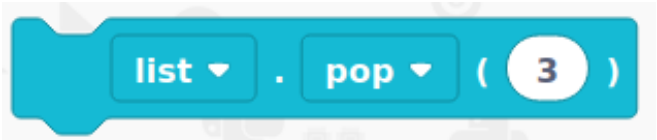
Append: Add the element in the end of the list



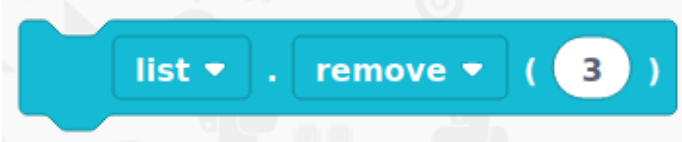
Insert: Add the element at the specific position in the list, E.g. adding 5 at pose 2



Extend: Add another list in the list



Pop: Remove element from specific position



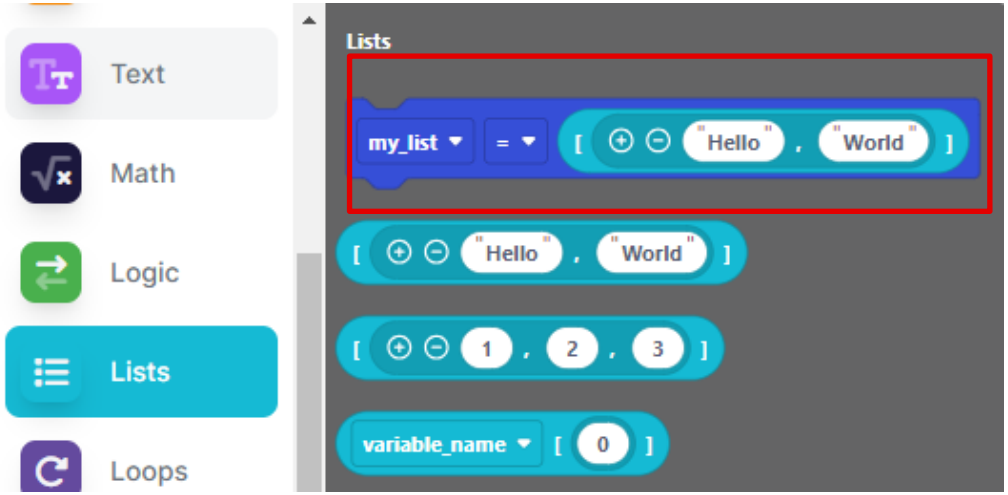
Remove: Remove element from list at it's 1st occurrence.

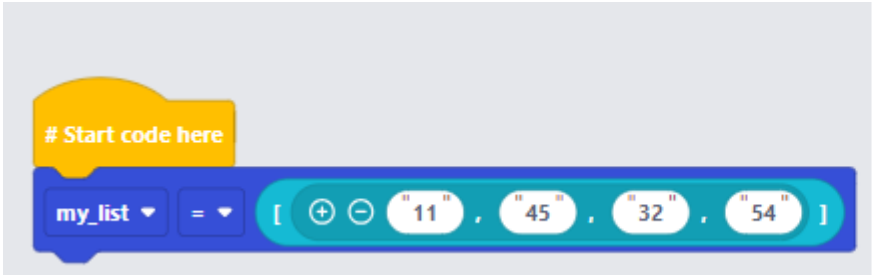
Apply & Create

ACTIVITY 01:-

</> WRITE THE PROGRAM TO CREATE A LIST AND TEST ALL FIVE OPERATIONS

Program Step 1:-

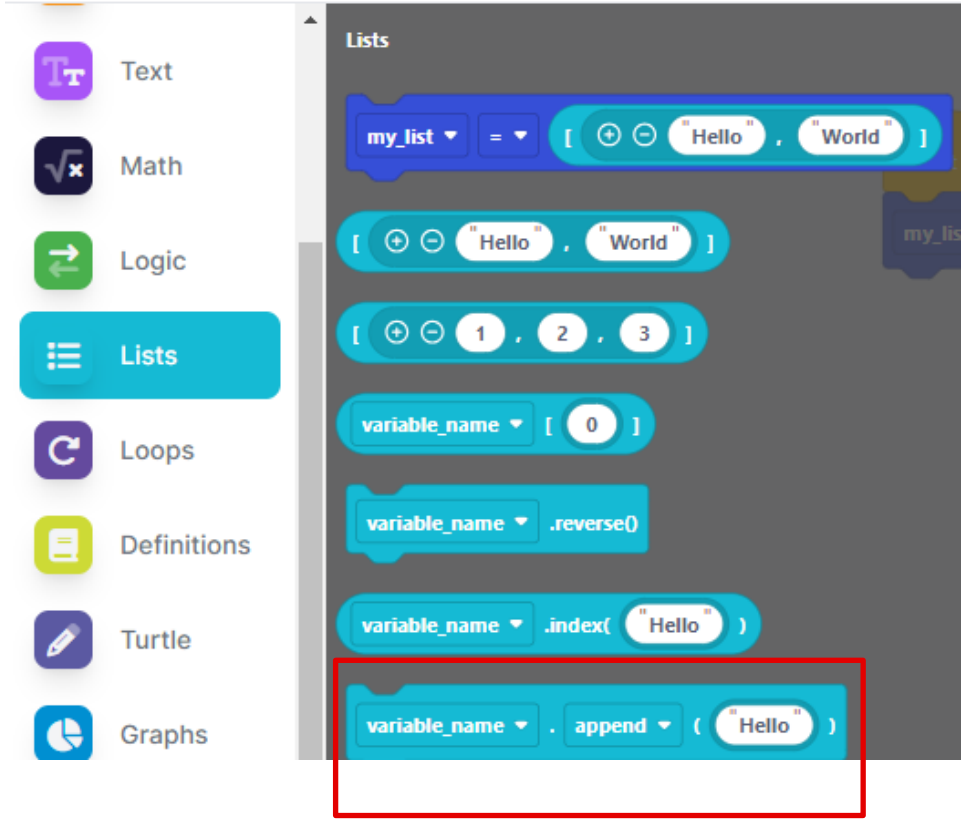




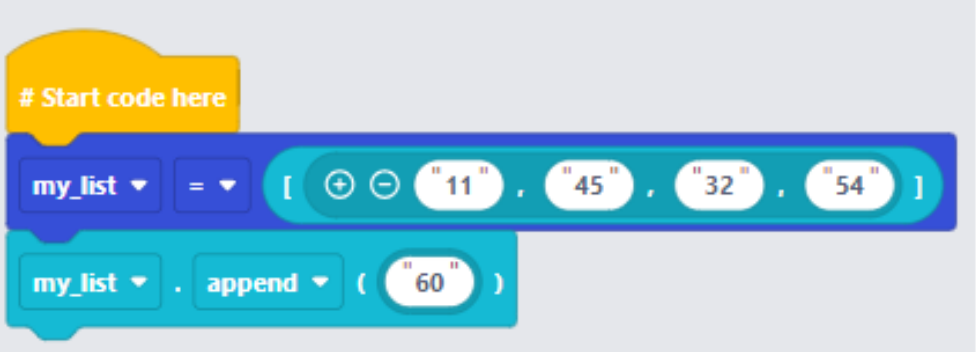
Code

```
1  #Start code here
2  my_list = ["11", "45", "32", "54"]
3
```

Program Step 2:-

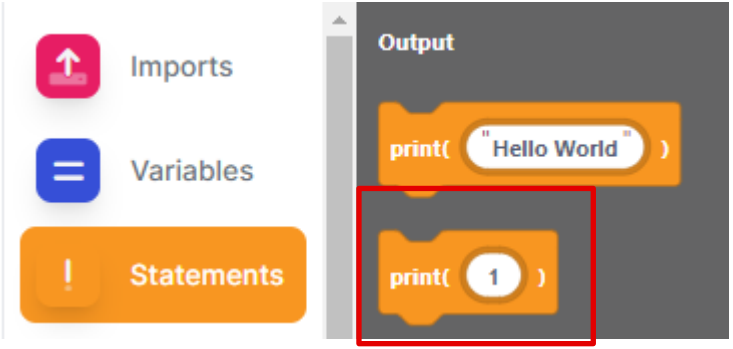


Program Step 3:-



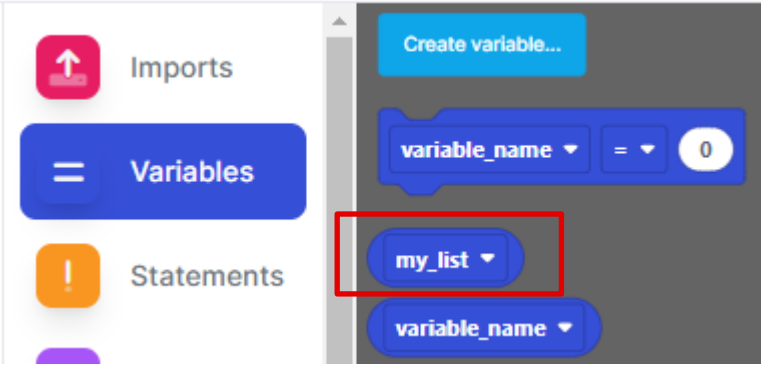

```
1  #Start code here
2  my_list = ["11", "45", "32", "54"]
3  my_list.append("60")
4
```

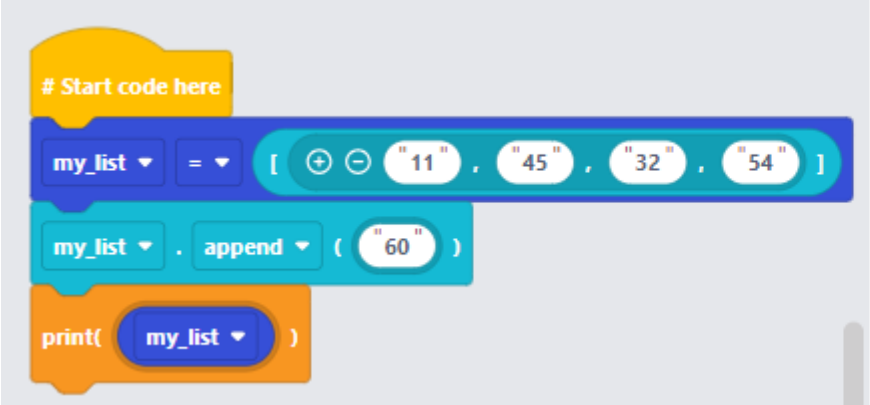
Program Step 4:-




```
1  #Start code here
2  my_list = ["11", "45", "32", "54"]
3  my_list.append("60")
4  print(1)
5
```

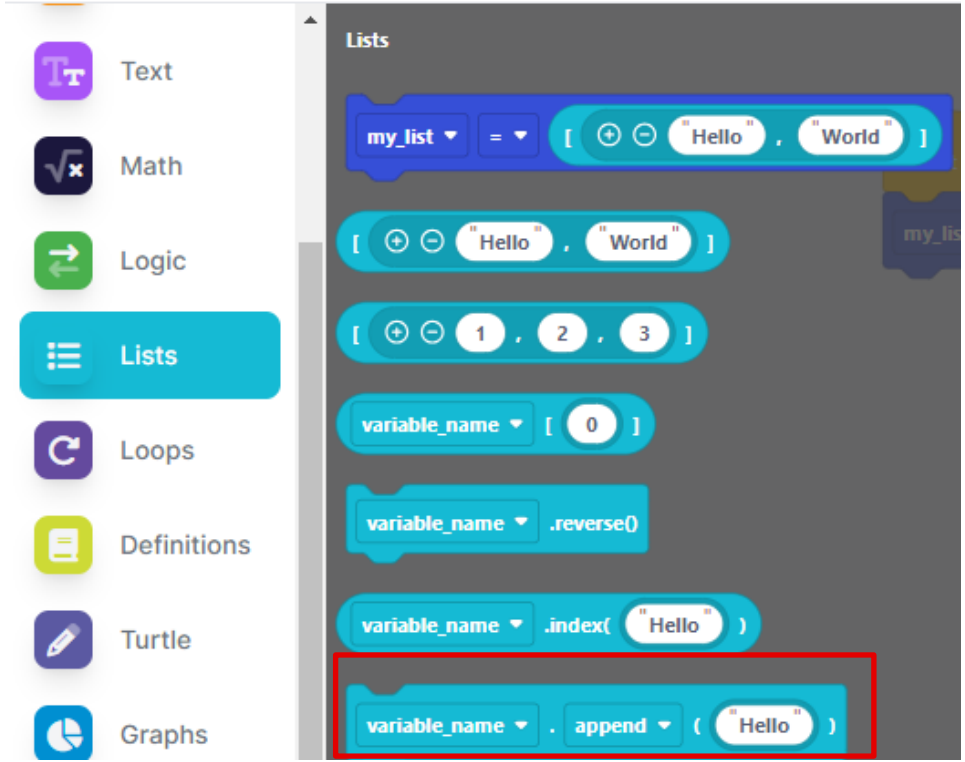
Program Step 5:-



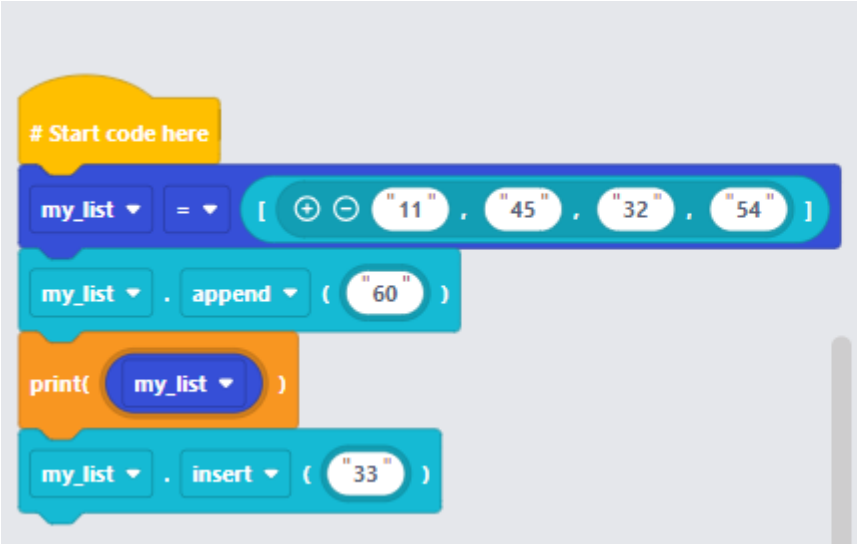



```
1  #Start code here
2  my_list = ["11", "45", "32", "54"]
3  my_list.append("60")
4  print(my_list)
5
```

Program Step 6:-



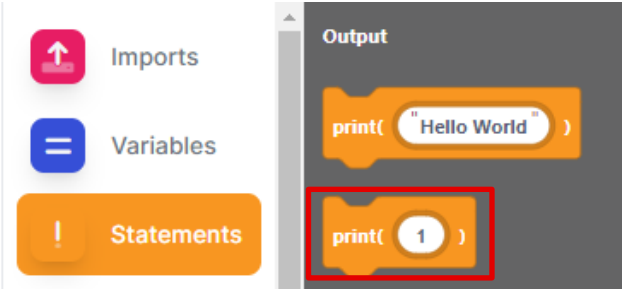
Program Step 7:-

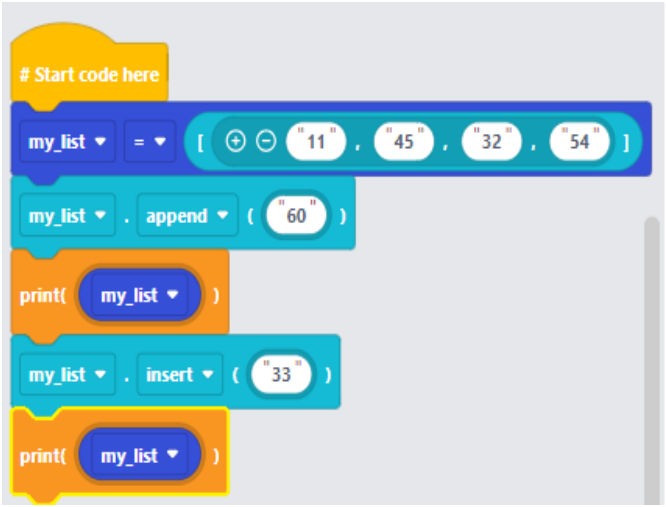


Code

```
1  #Start code here
2  my_list = ["11", "45", "32", "54"]
3  my_list.append("60")
4  print(my_list)
5  my_list.insert("33")
6
```

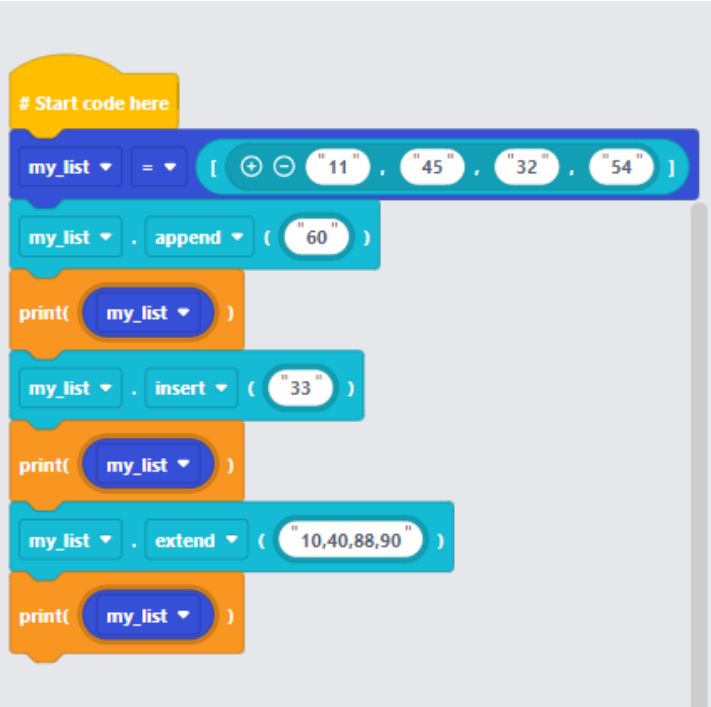
Program Step 8:-






```
1  #Start code here
2  my_list = ["11", "45", "32", "54"]
3  my_list.append("60")
4  print(my_list)
5  my_list.insert("33")
6  print(my_list)
7
```

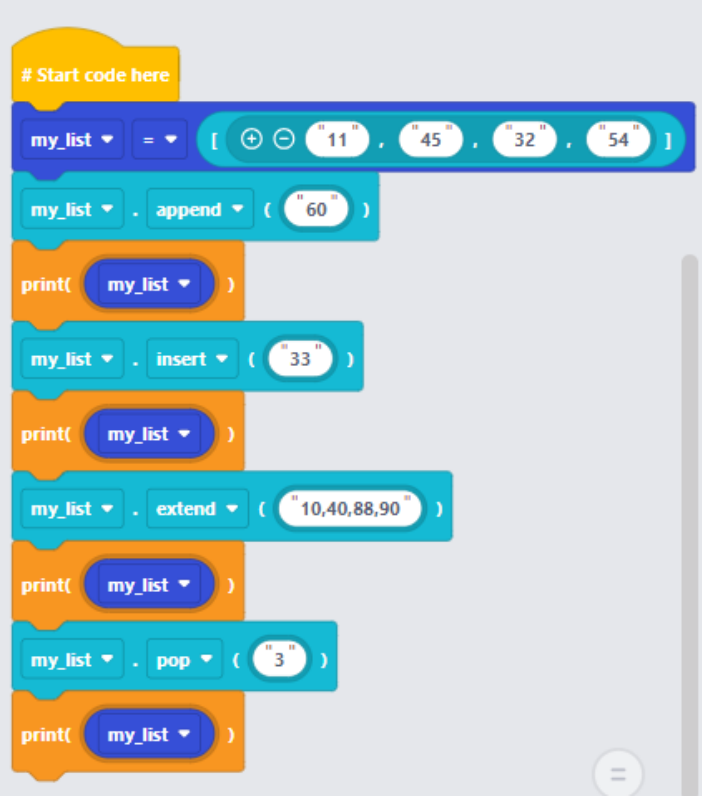
Program Step 9:-



Code

```
1  #Start code here
2  my_list = ["11", "45", "32", "54"]
3  my_list.append("60")
4  print(my_list)
5  my_list.insert("33")
6  print(my_list)
7  my_list.extend("10,40,88,90")
8  print(my_list)
9
```

Program Step 10:-

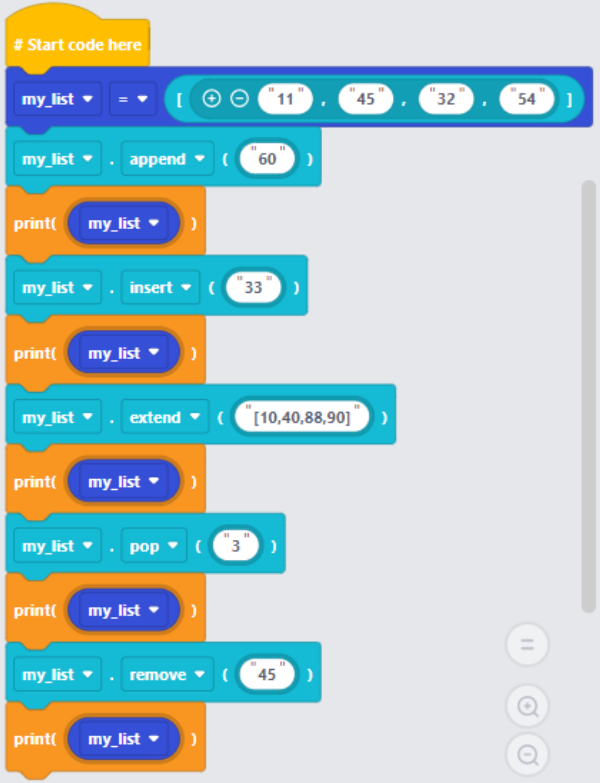


Code

```
#Start code here
my_list = ["11", "45", "32", "54"]
my_list.append("60")
print(my_list)
my_list.insert("33")
print(my_list)
my_list.extend("10,40,88,90")
print(my_list)
my_list.pop("3")
print(my_list)

```

Program Step 11:-



Code

```
#Start code here
my_list = ["11", "45", "32", "54"]
my_list.append("60")
print(my_list)
my_list.insert("33")
print(my_list)
my_list.extend("[10,40,88,90]")
print(my_list)
my_list.pop("3")
print(my_list)
my_list.remove("45")
print(my_list)
```

ACTIVITY SHEETS

Question 1:
What is list?

A. Is set of variables
B. Is set of integers
C. Is set of string
D. Is set of multiple data types

Question 2:
How many operations does list have?

A. 4
B. 5
C. 6
D. 7

Question 3:
“POP” operation need _____ to remove value.

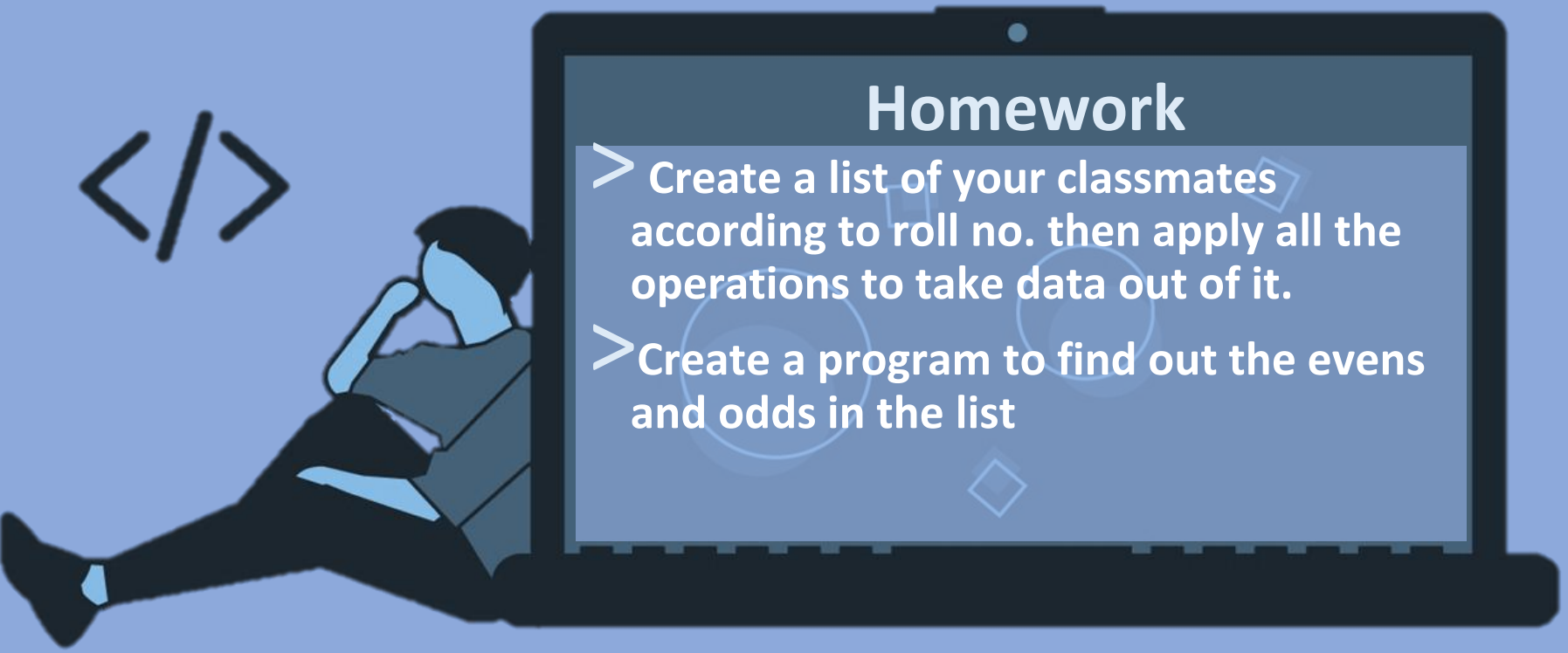
A. Name
B. Variable Value
C. Place value
D. Index

Question 4:
Does “Remove” operation need index to remove value?

A. Yes
B. No

Question 5:
Can we subtract 2 strings?

A. Yes
B. No



Homework

- Create a list of your classmates according to roll no. then apply all the operations to take data out of it.
- Create a program to find out the evens and odds in the list