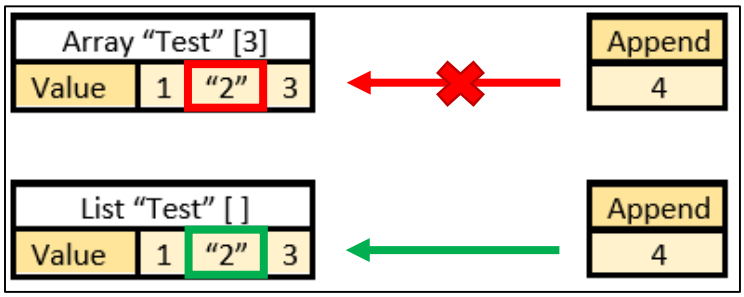
Linked list

Linked list is object linked together by line formation which require header.

Why linked list is needed

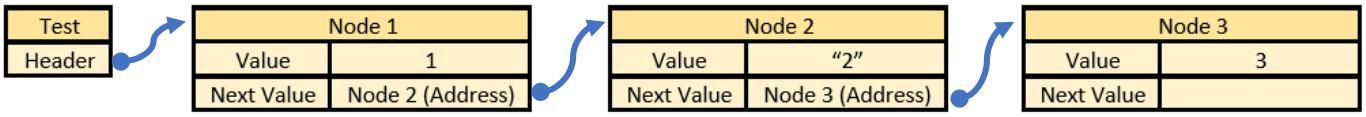
- Normal array cannot append the last index further of declaration.
- Array cannot mix different parameter types together



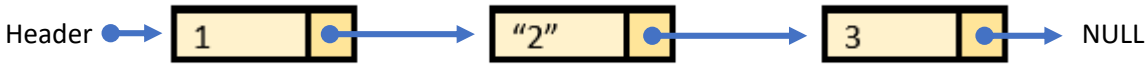
Comparison between "array" and "list"

Explanation in list with diagrams

In long...



In short...



Remark: Depends on your style to create classes with initial function or not ,but in this example is no initial included.

Create list

Class list() -> Contain only header (1 parameter) ---> Test = list()

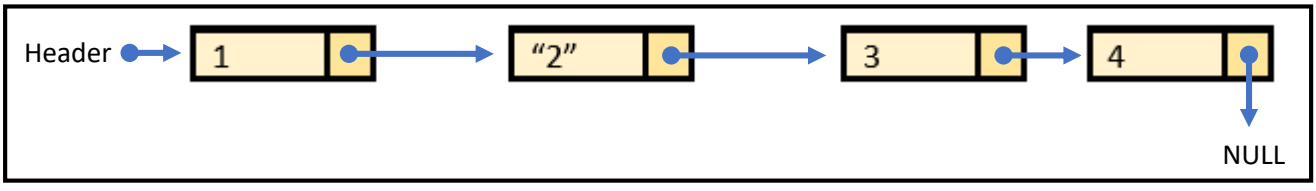
Create node

Class node() -> Contain value and next value (2 parameters) ---> Node1 = node()

Insert from last index (Append)

Create new node where value = 4 ---> Node4.node() ---> Node4.value = 4

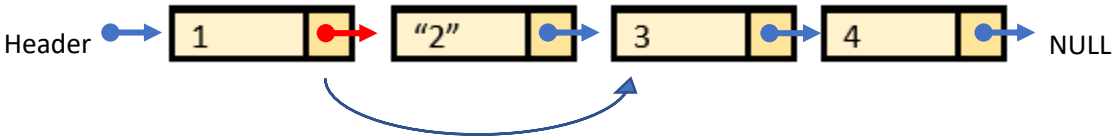
Link the last node with new node



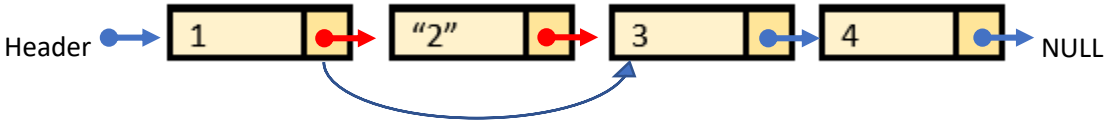
Removed by index

Remove value where index = 1

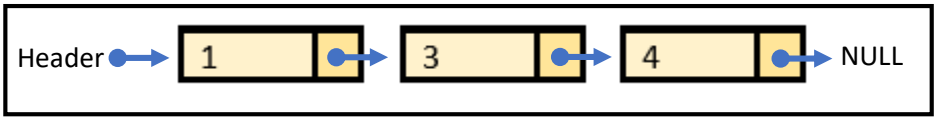
Link Node 1 to Node 3 (Node 1 next value = Node 3)



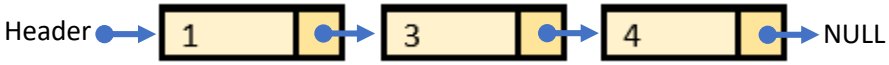
Cut Node 2 next value (Node 2 next value = "")



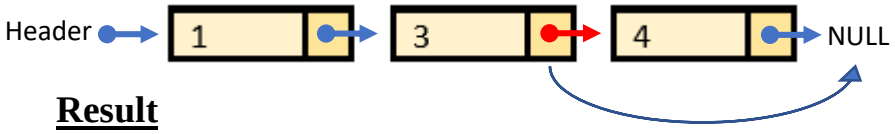
Result



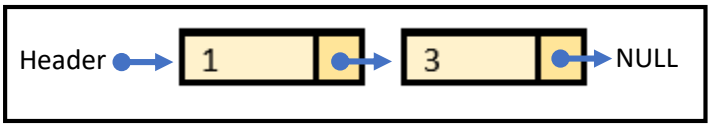
Removed from last index



Cut the last node by Node 3 next value to NULL ---> Node 3 next value = ""



Result

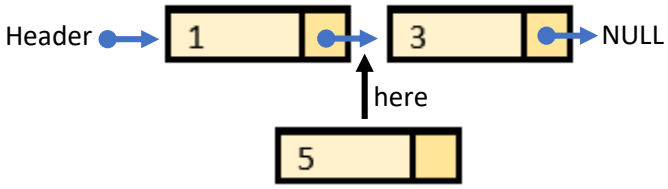


Inserted value from index

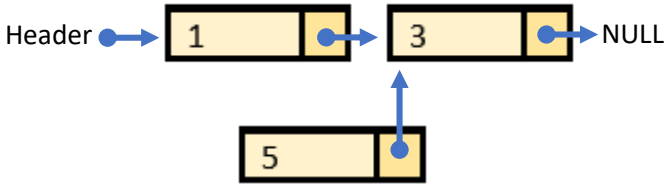
Insert value where list index = 1

Create new node where value = 5 ---> Node5.node() ---> Node5.value = 5

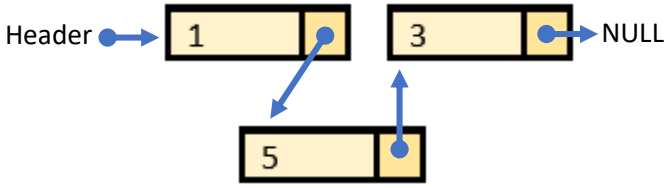
Find the location that new node will be inserted in list (index = 1)



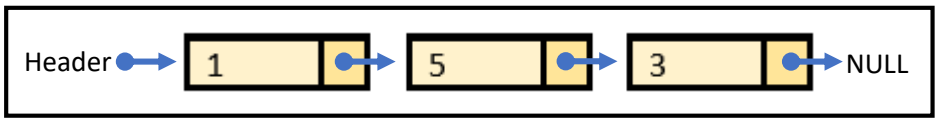
Link Node 5 to Node 3 (Node 5 next value = Node 3)



Link Node 1 to Node 5 (Node 1 next value = Node 5)



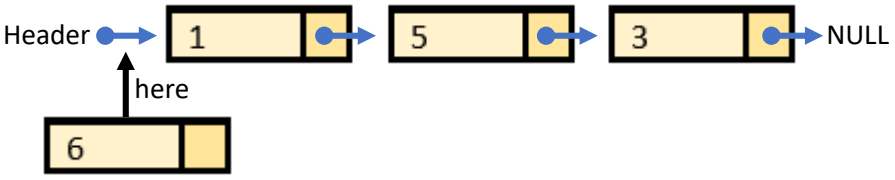
Result



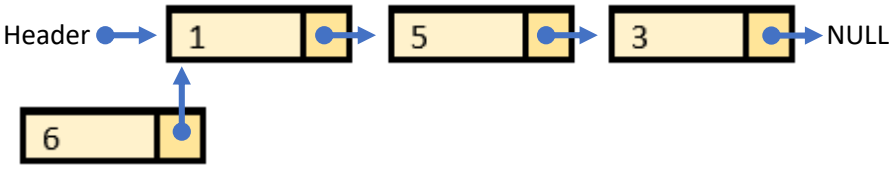
Inserted value from header

Insert new node at index = 0

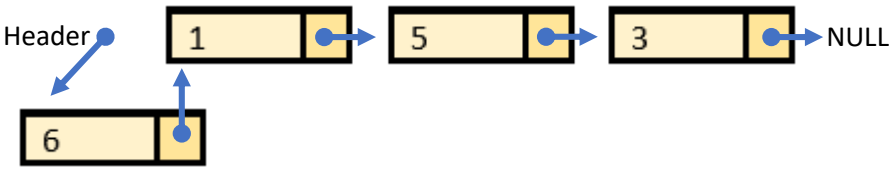
Create new node where value = 6 ---> Node6.node() ---> Node6.value = 6



Link Node 6 to Node 1 (Node 6 next value = Node 1)



Link Header to Node 6 (Test.header = Node 6)



Result