**IMPLEMENTION OF SINGLY LINKED LIST USING PYTHON**

**CODE:**

**class Node:**

**def \_\_init\_\_(self,data):**

**self.data = data**

**self.next = None**

**class LinkedList:**

**def \_\_init\_\_(self):**

**self.head = None**

**def is\_empty(self):**

**return self.head is None**

**def append(self, data):**

**new\_node = Node(data)**

**if self.head is None:**

**self.head = new\_node**

**return**

**current = self.head**

**while current.next:**

**current = current.next**

**current.next = new\_node**

**def prepend(self, data):**

**new\_node = Node(data)**

**new\_node.next = self.head**

**self.head = new\_node**

**def delete(self, data):**

**if self.head is None:**

**return**

**if self.head.data == data:**

**self.head = self.head.next**

**return**

**current = self.head**

**while current.next:**

**if current.next.data == data:**

**current.next = current.next.next**

**return**

**current = current.next**

**def search(self, data):**

**current = self.head**

**while current:**

**if current.data == data:**

**return True**

**current = current.next**

**return False**

**def display(self):**

**current = self.head**

**while current:**

**print(current.data, end="-->")**

**current = current.next**

**print("None")**

**Linked\_list= LinkedList()**

**Linked\_list.append(1)**

**Linked\_list.append(2)**

**Linked\_list.append(3)**

**print("Linked list:")**

**Linked\_list.display()**

**Linked\_list.prepend(0)**

**Linked\_list.prepend(-1)**

**print("Linked list after prepend :")**

**Linked\_list.display()**

**Linked\_list.delete(0)**

**Linked\_list.delete(3)**

**print("Linked list after deletions:")**

**Linked\_list.display()**

**print("Search for 1:", Linked\_list.search(1))**

**print("Search for 5:", Linked\_list.search(5))**

**OUTPUT:**

**Linked list:**

**1-->2-->3-->None**

**Linked list after prepend :**

**-1-->0-->1-->2-->3-->None**

**Linked list after deletions:**

**-1-->1-->2-->None**

**Search for 1: True**

**Search for 5: False**