```
  else
    temp := head
    while next of temp is not head, do
    temp := next of temp
    done
    next of node := head
    next of temp := node
    head := node
  end if
End
```

Deletion Operation

Following code demonstrates the deletion operation in a circular linked list based on single linked list.


```
deleteFirst():
Begin
  if head is null, then
    it is Underflow and return
  else if next of head = head, then
    head := null
    deallocate head
  else
    ptr := head
    while next of ptr is not head, do
      ptr := next of ptr
    next of ptr = next of head
    deallocate head
    head := next of ptr
  end if
```

```
}
```

isempty()

Algorithm of isempty() function –

```
begin procedure isempty

  if top less than 1
    return true
  else
    return false
  endif

end procedure
```

Implementation of isempty() function in C programming language is slightly different. We initialize top at -1, as the index in array starts from 0. So we check if the top is below zero or -1 to determine if the stack is empty. Here's the code –

Example

```
bool isempty() {
  if(top == -1)
    return true;
  else
    return false;
}
```

Push Operation

The process of putting a new data element onto stack is known as a Push Operation. Push operation involves a series of steps –

```
  if(!isempty()) {
     data = stack[top];
     top = top - 1;
     return data;
  } else {
     printf("Could not retrieve data, Stack is empty.\n");
  }
}
```


Data Structure - Expression Parsing

The way to write arithmetic expression is known as a notation. An arithmetic expression can be written in three different but equivalent notations, i.e., without changing the essence or output of an expression. These notations are −

- Infix Notation
- Prefix (Polish) Notation
- Postfix (Reverse-Polish) Notation

These notations are named as how they use operator in expression. We shall learn the same here in this chapter.

Infix Notation

We write expression in infix notation, e.g. a - b + c, where operators are used in-between operands. It is easy for us humans to read, write, and speak in infix notation but the same does not go well with computing devices. An algorithm to