Question 1

- Use Case: Shipping Company Optimization.

Code :

```
console.log("Shipping Company Optimization");
function count(ship,cointainer){
   let j=0;
   for(i=0;i<ship.length;i++){
      while(ship[i]>0){
         if(j >= cointainer.length){
            return -1
         }
         if(cointainer[j] >= ship[i]){
            cointainer[j] -= ship[i]
            ship[i]=0;
         }
         else{
            ship[i] -= cointainer[j];
            cointainer[j]=0
            j++;
         }
         if(cointainer[j] === 0){
            j++
         }
      }
   }
  return j ;
}
1.// shift=[10,10,10,10,10,10]       2.// shift=[10,10,10,20]    3.// shift=[10,10,10]
shift=[10,20,30]
container=[15,15,20,10]
result=count(shift,container)
console.log("Thus, the minimum number of containers needed is",result);
```

Question 2

- cycle in the linked list

Code :

```
console.log("Cycle in the Linked");
class Node {
   constructor(value) {
      this.value = value;
      this.next = null;
   }
}

function createLinkedList(values) {
   if (values.length === 0) return null;

   const head = new Node(values[0]);
```

```
    let current = head;
    let secondLastNode = null;

    for (let i = 1; i < values.length; i++) {
        current.next = new Node(values[i]);
        secondLastNode = current;
        current = current.next;
    }

    if (values.length % 2 === 0) {
        current.next = secondLastNode;
    } else {
        current.next = null;
    }
    return head;
}

function hasCycle(head) {

    if (!head || !head.next) {
        return false;
    }
    console.log(head);

    let slow = head;
    let fast = head;

    while (fast !== null && fast.next !== null) {
        slow = slow.next;
        fast = fast.next.next;
        if (slow === fast) {
            return true;
        }
    }
    return false;
}
head=[20,30,40,60,80,90]
head1=[10,30,40,6,8]
list = createLinkedList(head)
list1 = createLinkedList(head1)
result = hasCycle(list)
result1 = hasCycle(list1)
console.log("Result",result);
console.log("Result",result1);
```

Question 2

- Expense Tracker

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