**Array Questions**

**1- Majority Element**

**Code:**

public class MajorityElement {

public static int majorityElement(int[] nums) {

int maj= nums[0];

int count=1;

for(int i=0;i<nums.length;i++){

if(nums[i] == maj){

count++;

}

else{

count--;

}

if(count==0){

maj=nums[i];

count=1;

}

}

return maj;

}

public static void main(String[] args){

int[] nums ={ 2,2,1,1,1,2,2};

System.out.println(majorityElement(nums));

}

}

**2-Single Number**

**Code:**

public class singleNumber {

public static int singlenumber(int[] nums) {

int xor = 0;

for (int i = 0; i < nums.length; i++) {

xor = xor ^ nums[i];

}

return xor;

}

public static void main(String args[]) {

int nums[] = { 7, 2, 2, 4, 4 };

System.out.println(singlenumber(nums));

}

}

**3- Gas Station**

**Code:**

public class GasStation {

public static void canCompleteCircuit(int[] gas, int[] cost) {

int startingPoint = 0;

int surplus = 0;

int deficit = 0;

for(int i = 0; i<gas.length; i++){

surplus += gas[i] - cost[i];

if(surplus<0){

deficit+=surplus;

surplus =0; // Surplus set to 0

startingPoint = i+1; // Move to the Next Station

}

}

// Check is it Complete the Circuit

if((deficit+surplus)>=0){

System.out.println(startingPoint);

}

}

public static void main(String[] args) {

int[] gas={1,2,3,4,5};

int[] cost= {3,4,5,1,2};

canCompleteCircuit(gas, cost);

}

}