***Week – 2 (28.03.2021 – 04.04.2021)***

***CODES BASED ON WEELKY TASK***

1. ***Sort Array By Parity II:***

class Solution {

public:

vector<int> sortArrayByParityII(vector<int>& nums) {

vector<int> even, odd, res;

if(nums.size() == 1) return nums;

int i;

for(i=0; i<nums.size(); i++)

{

if(nums[i]%2 == 0) even.push\_back(nums[i]);

else odd.push\_back(nums[i]);

}

i=0;

while(i<even.size())

{

res.push\_back(even[i]);

res.push\_back(odd[i]);

i++;

}

return res;

}

};

1. ***Intersection of Two Arrays:***

class Solution {

public:

vector<int> intersection(vector<int>& nums1, vector<int>& nums2) {

sort(nums1.begin(), nums1.end());

sort(nums2.begin(), nums2.end());

vector<int> res;

int i=0,j=0;

while(i<nums1.size() && j<nums2.size())

{

if(nums1[i] < nums2[j])

{

i++;

}

else if(nums1[i] > nums2[j])

{

j++;

}

else

{

res.push\_back(nums1[i]);

i++;

j++;

}

}

res.erase(unique(res.begin(), res.end()), res.end());

return res;

}

};

1. ***Intersection of Two Arrays II:***

class Solution {

public:

vector<int> intersection(vector<int>& nums1, vector<int>& nums2) {

sort(nums1.begin(), nums1.end());

sort(nums2.begin(), nums2.end());

vector<int> res;

int i=0,j=0;

while(i<nums1.size() && j<nums2.size())

{

if(nums1[i] < nums2[j])

{

i++;

}

else if(nums1[i] > nums2[j])

{

j++;

}

else

{

res.push\_back(nums1[i]);

i++;

j++;

}

}

res.erase(unique(res.begin(), res.end()), res.end());

return res;

}

};

1. ***Relative Sort Array: (***Can also be solved using map)

class Solution {

public:

vector<int> relativeSortArray(vector<int>& arr1, vector<int>& arr2) {

vector<int> res, block;

int i,j;

bool c;

for(i=0; i<arr2.size(); i++)

for(j=0; j<arr1.size(); j++)

if(arr2[i] == arr1[j])

res.push\_back(arr1[j]);

for(i=0; i<arr1.size(); i++)

{

c = false;

for(j=0; j<res.size(); j++)

{

if(arr1[i] == res[j]) c=true;

}

if(c == false) block.push\_back(arr1[i]);

}

sort(block.begin(), block.end());

for(i=0; i<block.size(); i++) res.push\_back(block[i]);

return res;

}

};

1. ***Maximum Product of Two Elements in an Array:***

class Solution {

public:

int maxProduct(vector<int>& nums) {

vector<int> prod;

int i,j;

for(i=0; i<nums.size()-1; i++)

for(j=i+1; j<nums.size(); j++)

prod.push\_back((nums[i]-1) \* (nums[j]-1));

return \*max\_element(prod.begin(), prod.end());

}

};

1. ***Two Sum II - Input array is sorted:***

class Solution {

public:

vector<int> twoSum(vector<int>& numbers, int target) {

vector<int> res;

int i, j, sum;

for(i=0; i<numbers.size()-1; i++)

{

if(numbers[i] == 0 && numbers[i+1] == 0 && target == 0)

{

res.push\_back(i+1);

res.push\_back(i+2);

return res;

}

if(numbers[i] == 0 && numbers[i+1] == 0) continue;

for(j=i+1; j<numbers.size(); j++)

{

if(numbers[i] + numbers[j] == target)

{

res.push\_back(i+1);

res.push\_back(j+1);

return res;

}

}

}

return res;

}

};

1. ***Find the Duplicate Number:***

class Solution {

public:

int findDuplicate(vector<int>& nums) {

sort(nums.begin(), nums.end());

int i;

for(i=0; i<nums.size(); i++)

if(nums[i] == nums[i+1]) return nums[i];

return -1;

}

};

1. ***Count Odd Numbers in an Interval Range:***

class Solution {

public:

int countOdds(int low, int high) {

int i, count = 0;

for(i=low; i<=high; i++)

if(i%2!=0) count++;

return count;

}

};

1. ***Three Consecutive Odd:***

class Solution {

public:

bool threeConsecutiveOdds(vector<int>& arr) {

if(arr.size() < 3) return false;

int i;

for(i=0; i<arr.size()-2; i++)

if(arr[i]%2!=0 && arr[i+1]%2!=0 && arr[i+2]%2!=0) return true;

return false;

}

};

1. ***Find Numbers with Even Number of Digits:***

class Solution {

public:

int findNumbers(vector<int>& nums) {

vector<int> dig;

int i, count, d\_count;

for(i=0; i<nums.size(); i++)

{

count = 0;

while(nums[i] > 0)

{

count++;

nums[i] = nums[i]/10;

}

if(count%2 == 0) dig.push\_back(count);

}

return dig.size();

}

};