Copilot Prompts & Responses - Assignment 2

# Question 1: Find Missing Numbers in Array

**Prompt Used:** How to find all missing numbers in an array of size n that contains numbers from 1 to n, possibly with duplicates?

**Copilot Response:**

A screenshot of a computer

AI-generated content may be incorrect.

**Adjustments Made:** Used Copilot’s idea to mark numbers as negative so we can spot which ones are missing. Changed only unmarked (positive) spots to find the missing values

# Question 2: Sort Array by Parity

**Prompt Used:** How to sort an array so that all even numbers come before odd numbers in-place?

**Copilot Response:**

A screenshot of a computer

AI-generated content may be incorrect.

**Adjustments Made:** Followed Copilot’s tip to move even numbers to the front by swapping them in-place using a pointer. This helped sort the array without using extra memory

# Question 3: Two Sum

**Prompt Used:** How to find two indices such that the numbers at those indices add up to a target?

**Copilot Response:**

A screenshot of a computer

AI-generated content may be incorrect.

**Adjustments Made:** Used Copilot’s idea to track needed numbers in a dictionary while looping through the array, allowing us to quickly find the pair that adds up to the target.

# Question 4: Maximum Product of Three Numbers

**Prompt Used:** How to get the maximum product of any three numbers in an array?

**Copilot Response:**

A screenshot of a computer

AI-generated content may be incorrect.

**Adjustments Made:** Used Copilot’s approach to sort the array and compare two smart options for max product either the top 3 numbers or 2 smallest and the largest making sure edge cases with negatives are handled too..

# Question 5: Decimal to Binary Conversion

**Prompt Used:** How to convert a decimal number to binary in C#?

**Copilot Response:**

A screenshot of a computer

AI-generated content may be incorrect.

**Adjustments Made:** Followed Copilot’s suggestion to use Convert.ToString(decimalNumber, 2) for a quick and clean way to get the binary version without writing extra logic.

# Question 6: Find Minimum in Rotated Sorted Array

**Prompt Used:** How to find the minimum element in a rotated sorted array using binary search?

**Copilot Response:**

A screenshot of a computer

AI-generated content may be incorrect.

**Adjustments Made:** Used Copilot’s binary search idea to quickly find the smallest number by checking if the middle value is bigger than the end and adjusting the search range accordingly.

# Question 7: Palindrome Number

**Prompt Used:** How to check if a number is a palindrome in C#?

**Copilot Response:**

A screenshot of a computer

AI-generated content may be incorrect.

**Adjustments Made:** Followed Copilot’s method of turning the number into a string, reversing it, and checking if it matches the original also added a quick check to return false for negative numbers.

# Question 8: Fibonacci Number

**Prompt Used:** How to compute the nth Fibonacci number efficiently without recursion?

**Copilot Response:**

A screenshot of a computer

AI-generated content may be incorrect.

**Adjustments Made:** Used Copilot’s suggestion to calculate Fibonacci numbers with a loop and just two variables, which avoids recursion and makes the code faster and more memory-friendly.