**Prompt Logs and Implementation Details**

**Question 1: Find Missing Numbers in Array**

* **Prompt Used:** "explain hash" and "HashSet seen = new HashSet(nums); List missing = new List(); for(int i = 1;i<=n;i++) { if(!seen.Contains(i)) { missing.Add(i);"
* **AI Response Summary:** Explained HashSet and how it's used for fast existence checking. Provided a complete working solution using HashSet to find missing numbers in range 1 to n.
* **Implementation:** Used HashSet<int> to track seen numbers, looped from 1 to n and added missing ones to a list.
* **Adjustments:** No major changes; logic directly used from AI's explanation.

**Question 2: Sort Array by Parity**

* **Prompt Used:** "evens.AddRange(odds); // combine them return evens.ToArray(); // convert to array and return explain what is addrange"
* **AI Response Summary:** Explained AddRange() as a method that appends all items from one list to another.
* **Implementation:** Used two lists to separate even and odd numbers, then combined using evens.AddRange(odds).
* **Adjustments:** None; logic was clear and used as-is.

**Question 3: Two Sum**

* **Prompt Used:** "write every two sum without dictionary"
* **AI Response Summary:** Provided a nested loop solution checking all pairs i and j, returning the first pair whose sum matches the target.
* **Implementation:** Implemented simple double for-loop checking nums[i] + nums[j] == target.
* **Adjustments:** Variable naming kept consistent with AI; used return new int[] { i, j }; as suggested.

**Question 4: Find Maximum Product of Three Numbers**

* **Prompt Used:** "4. Find Maximum Product of Three Numbers"
* **AI Response Summary:** Explained two max product cases: (1) top 3 largest numbers, (2) 2 smallest (possibly negative) and largest number. Provided code using sorting.
* **Implementation:** Sorted array and compared nums[n-1] \* nums[n-2] \* nums[n-3] vs nums[0] \* nums[1] \* nums[n-1].
* **Adjustments:** None needed.

**Question 5: Decimal to Binary Conversion**

* **Prompt Used:** "explain this a little bit public static string DecimalToBinary(int decimalNumber)..."
* **AI Response Summary:** Explained how % 2 and / 2 work to extract binary digits, and why digits are prepended to the string.
* **Implementation:** Implemented manual loop-based method to convert decimal to binary.
* **Adjustments:** Used exactly as explained by AI.

**Question 6: Find Minimum in Rotated Sorted Array**

* **Prompt Used:** "for the for loop why cant i choose i =0"
* **AI Response Summary:** Explained why we start loop at i = 1 when min = nums[0] to avoid comparing first element to itself.
* **Implementation:** Used linear scan starting from index 1 and updated min if smaller element found.
* **Adjustments:** Added optional explanation on how to handle i = 0 safely if min = int.MaxValue

**Question 7: Palindrome Number**

* **Prompt Used:** "explain" for method that converts number to string, reverses it, and compares
* **AI Response Summary:** Broke down each line — conversion to string, reversing with Array.Reverse, and string comparison
* **Implementation:** Used string-based method to check palindrome, with early return for negative numbers.
* **Adjustments:** None; used exactly as explained.

**Question 8: Fibonacci Number**

* **Prompt Used:** "for (int i = 2; i <= n; i++)" explanation and "Fibonacci number"
* **AI Response Summary:** Detailed how loop uses two variables prev and curr to compute sequence. Showed example values at each step.
* **Implementation:** Implemented loop from 2 to n, returning curr as final result.
* **Adjustments:** None; logic copied exactly.