1.Odd String Difference

Code:

```
#include <stdio.h>

char* findOddString(char** words, int wordsSize) {
  int n = strlen(words[0]);  // Get length of first string

  // Calculate difference array for the first string
  int diff[n - 1];
  for (int i = 0; i < n - 1; i++) {
    diff[i] = words[0][i + 1] - words[0][i];
  }

  // Iterate through remaining strings and compare difference arrays
  for (int i = 1; i < wordsSize; i++) {
    for (int j = 0; j < n - 1; j++) {
      if (words[i][j + 1] - words[i][j] != diff[j]) {
        return words[i];  // Mismatch found, return the odd string
      }
    }
  }

  // If no mismatch found, return the first string (unlikely)
  return words[0];
}

int main() {
  char* words1[] = {"acd", "aef", "bcd"};
  char* words2[] = {"a", "b", "c", "d"};
  char* words3[] = {"aaa", "aab", "aac"};

  int n1 = sizeof(words1) / sizeof(words1[0]);
  int n2 = sizeof(words2) / sizeof(words2[0]);
  int n3 = sizeof(words3) / sizeof(words3[0]);

  printf("Odd string in words1: %s\n", findOddString(words1, n1));
  printf("Odd string in words2: %s\n", findOddString(words2, n2));
  printf("Odd string in words3: %s\n", findOddString(words3, n3));

  return 0;
}
```

```
Odd string in words1: aef
Odd string in words2: a
Odd string in words3: aab

Process returned 0 (0x0)   execution time : 0.047 s
Press any key to continue.
```

2.Words Within Two Edits of Dictionary

Code:

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>

int isEditDistanceOne(char *s1, char *s2) {
   int m = strlen(s1);
   int n = strlen(s2);

   if (abs(m - n) > 1)
      return 0;

   int count = 0;
   int i = 0, j = 0;

   while (i < m && j < n) {
      if (s1[i] != s2[j]) {
         if (count == 1)
            return 0;

         if (m > n)
            i++;
         else if (m < n)
            j++;
         else {
            i++;
            j++;
         }
         count++;
      } else {
         i++;
         j++;
      }
   }

   if (i < m || j < n)
      count++;

   return count == 1;
}
```

```
int isEditDistanceTwo(char *s1, char *s2) {
    int m = strlen(s1);
    int n = strlen(s2);

    if (abs(m - n) > 2)
        return 0;

    int count = 0;
    int i = 0, j = 0;

    while (i < m && j < n) {
        if (s1[i] != s2[j]) {
            if (count == 2)
                return 0;

            if (m > n)
                i++;
            else if (m < n)
                j++;
            else {
                i++;
                j++;
            }
            count++;
        } else {
            i++;
            j++;
        }
    }

    if (i < m || j < n)
        count++;

    return count == 2;
}

char** findWords(char** queries, int queriesSize, char** dictionary, int dictionarySize, int* returnSize)
{
    *returnSize = 0;
    char **result = (char **)malloc(queriesSize * sizeof(char *));

    for (int i = 0; i < queriesSize; i++) {
        for (int j = 0; j < dictionarySize; j++) {
            if (strcmp(queries[i], dictionary[j]) == 0 || isEditDistanceOne(queries[i], dictionary[j]) ||
isEditDistanceTwo(queries[i], dictionary[j])) {
                result[*returnSize] = (char *)malloc((strlen(queries[i]) + 1) * sizeof(char));
                strcpy(result[*returnSize], queries[i]);
                (*returnSize)++;
                break;
            }
        }
    }

    return result;
}
```

```
int main() {
    char *queries[] = {"word", "note", "ants", "wood"};
    int queriesSize = sizeof(queries) / sizeof(queries[0]);
    char *dictionary[] = {"wood", "joke", "moat"};
    int dictionarySize = sizeof(dictionary) / sizeof(dictionary[0]);
    int returnSize = 0;

    char **result = findWords(queries, queriesSize, dictionary, dictionarySize, &returnSize);

    printf("Output: [");
    for (int i = 0; i < returnSize; i++) {
        printf("%s", result[i]);
        if (i < returnSize - 1)
            printf(", ");
    }
    printf("]\n");

    // Free dynamically allocated memory
    for (int i = 0; i < returnSize; i++) {
        free(result[i]);
    }
    free(result);

    return 0;
}
```

Output:

```
Output: [word, note, wood]

Process returned 0 (0x0)   execution time : 0.048 s
Press any key to continue.
```

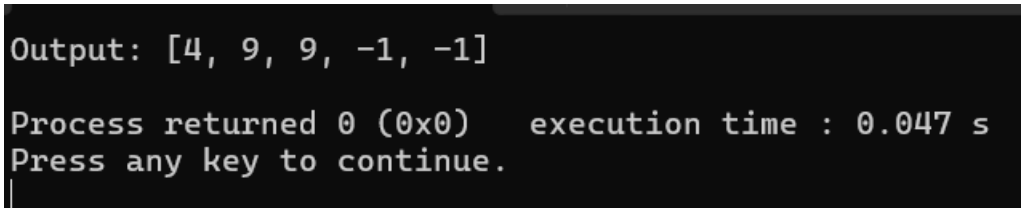
3.Next Greater Element IV

Code:

```
#include <stdio.h>
#include <stdlib.h>

int* nextGreaterElement(int* nums, int numsSize, int* returnSize) {
    int* result = (int*)malloc(numsSize * sizeof(int));
    *returnSize = numsSize;

    for (int i = 0; i < numsSize; i++) {
        result[i] = -1;
        for (int j = i + 1; j < numsSize; j++) {
            if (nums[j] > nums[i]) {
                result[i] = nums[j];
                break;
            }
```

```
        }
    }

    return result;
}

int main() {
    int nums[] = {2, 4, 0, 9, 6};
    int numsSize = sizeof(nums) / sizeof(nums[0]);

    int returnSize;
    int* result = nextGreaterElement(nums, numsSize, &returnSize);

    printf("Output: [");
    for (int i = 0; i < returnSize - 1; i++) {
        printf("%d, ", result[i]);
    }
    printf("%d]\n", result[returnSize - 1]);

    free(result);

    return 0;
}
```

Output:



4.Minimum Addition to Make Integer Beautiful

Code:

```
#include <stdio.h>

int minAddToMakeBeautiful(int n, int target) {
    int sum = 0;
    while (n > 0) {
        sum += n % 10;
        n /= 10;
    }
    return sum > target ? sum - target : 0;
}

int main() {
    int n1 = 16, target1 = 6;
```

```
    int n2 = 467, target2 = 6;
    int n3 = 1, target3 = 1;

    printf("Output 1: %d\n", minAddToMakeBeautiful(n1, target1));
    printf("Output 2: %d\n", minAddToMakeBeautiful(n2, target2));
    printf("Output 3: %d\n", minAddToMakeBeautiful(n3, target3));

    return 0;
}
```

Output:

```
Output 1: 1
Output 2: 11
Output 3: 0

Process returned 0 (0x0)   execution time : 0.047 s
Press any key to continue.
```

5.Sort Array by Moving Items to Empty Space

Code:

```
#include <stdio.h>

int minOperations(int* nums, int numsSize) {
    int start = 0, end = numsSize - 1, moves = 0;

    while (start < end) {
        if (nums[start] == 0) {
            start++;
        } else if (nums[end] != 0) {
            end--;
        } else {
            nums[start] = 0;
            moves++;
        }
    }

    return moves;
}

int main() {
    int nums1[] = {4, 2, 0, 3, 1};
    int nums2[] = {1, 2, 3, 4, 0};
    int nums3[] = {1, 0, 2, 4, 3};

    int size1 = sizeof(nums1) / sizeof(nums1[0]);
    int size2 = sizeof(nums2) / sizeof(nums2[0]);
    int size3 = sizeof(nums3) / sizeof(nums3[0]);
```

```
    printf("Output 1: %d\n", minOperations(nums1, size1));
    printf("Output 2: %d\n", minOperations(nums2, size2));
    printf("Output 3: %d\n", minOperations(nums3, size3));

    return 0;
}
```

Output: