Program 1 OS Assignment

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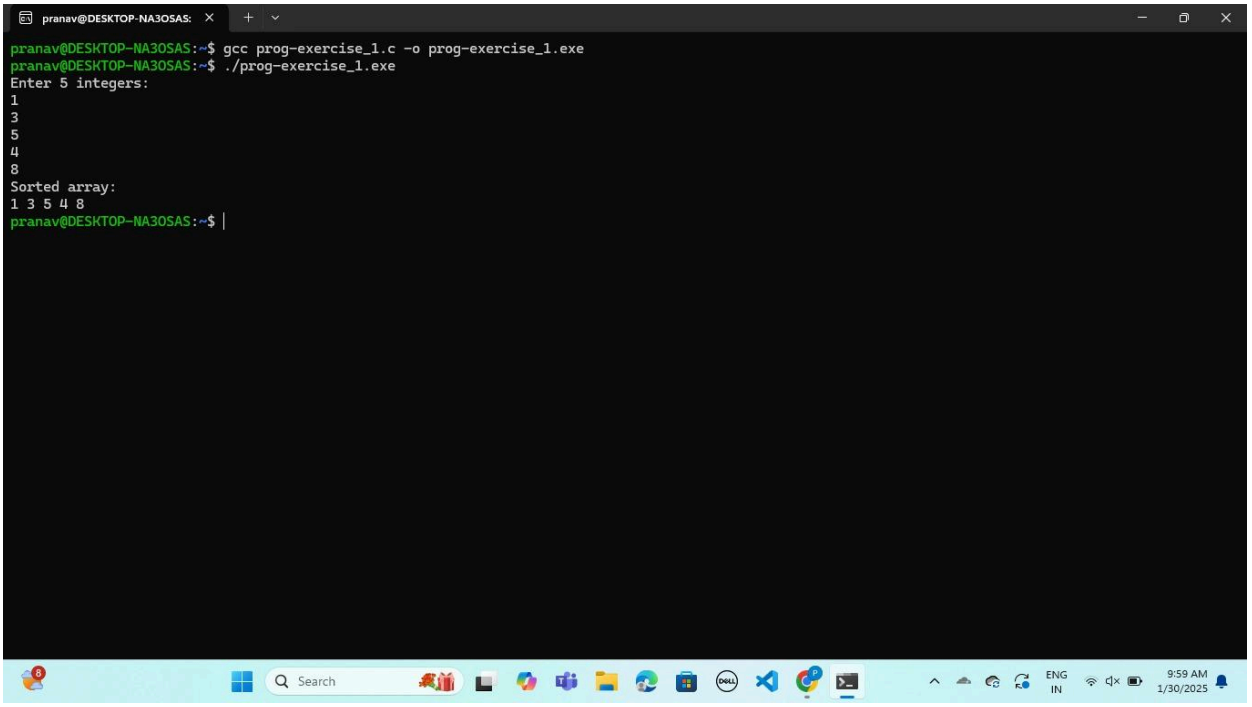
Section G

Code:

```
#include <stdio.h>
#include <stdlib.h>
#include <unistd.h>
#include <sys/types.h>
#include <sys/wait.h>

#define SIZE 5

int arr[SIZE];

void sort(int arr[], int size) {
    for(int i = 0; i < size - 1; i++) {
        for(int j = i + 1; j < size; j++) {
            if(arr[i] > arr[j]) {
                int tmp = arr[i];
                arr[i] = arr[j];
                arr[j] = tmp;
            }
        }
    }
}

int main() {
    pid_t pid;

    printf("Enter %d integers:\n", SIZE);
    for (int i = 0; i < SIZE; i++) {
        scanf("%d", &arr[i]);
    }

    pid = fork();

    if (pid < 0) {
        perror("fork failed");
        exit(1);
    } else if (pid == 0) {
```

```
        sort(arr, SIZE);
        exit(0);
    } else {
        wait(NULL);
        printf("Sorted array:\n");
        for (int i = 0; i < SIZE; i++) {
            printf("%d ", arr[i]);
        }
        printf("\n");
    }

    return 0;
}
```

Execution Screenshot:



The array is not sorting. This is because if the child modifies the array (sorting it), the changes are not reflected in the parent, because they do not share memory by default.