Questions

1. Merge sort is implemented with the following steps:
   - Divide the unsorted array into n subarrays, each containing 1 element (a list of 1 element is considered sorted).
   - Repeatedly merge subarrays to produce new sorted subarrays until there is only 1 subarray remaining. This will be the sorted array.

Write PSEUDOCODE that implements merge sort.

2. Write PSEUDOCODE for the function `swap_nodes` that swaps the kth and n th nodes of a linked list. k is guaranteed to be smaller than n, and it is guaranteed that the linked list will have more than n nodes.

3. Write a function that gets the pointer of a matrix as input and computes its determinant value.

4. [20] Write the output of this program:

```c
#include <stdio.h>

int main()
{
    static char *s[] = {"black", "white", "pink", "violet"};
    char **ptr[] = {s+3, s+2, s+1, s}, ***p;
    p = ptr;
    ++p;
    printf("%s", **p+1);
    return 0;
}
```

5. Write the output of this program:

```c
#include <stdio.h>

int main()
{
    int i=3, *j, k;
    j = &i;
    printf("%d
", i**j+i+j);
    return 0;
}
```

6. If the size of integer is 4 bytes, what will be the output of the program?

```c
#include <stdio.h>

int main()
{
    int arr[] = {12, 13, 14, 15, 16};
```
printf("%d,%d,%d\n", sizeof(arr), sizeof(*arr), sizeof(arr[0]));
return 0;
}