UNIX ASSIGNMENT – 3

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SECTION: A

Create shell scripts for generating static and dynamic libraries.

CODE TEXT:

//bubblesort.c

```
#include <stdio.h>

// Function to perform Bubble Sort on an array
void bubbleSort(int arr[], int n) {
   for (int i = 0; i < n - 1; i++) {
      for (int j = 0; j < n - i - 1; j++) {
         // Swap if the element found is greater than the next element
         if (arr[j] > arr[j + 1]) {
            int temp = arr[j];
            arr[j] = arr[j + 1];
            arr[j + 1] = temp;
         }
      }
   }
}

// Function to print elements of an array
void printArray(int arr[], int size) {
   for (int i = 0; i < size; i++)
```

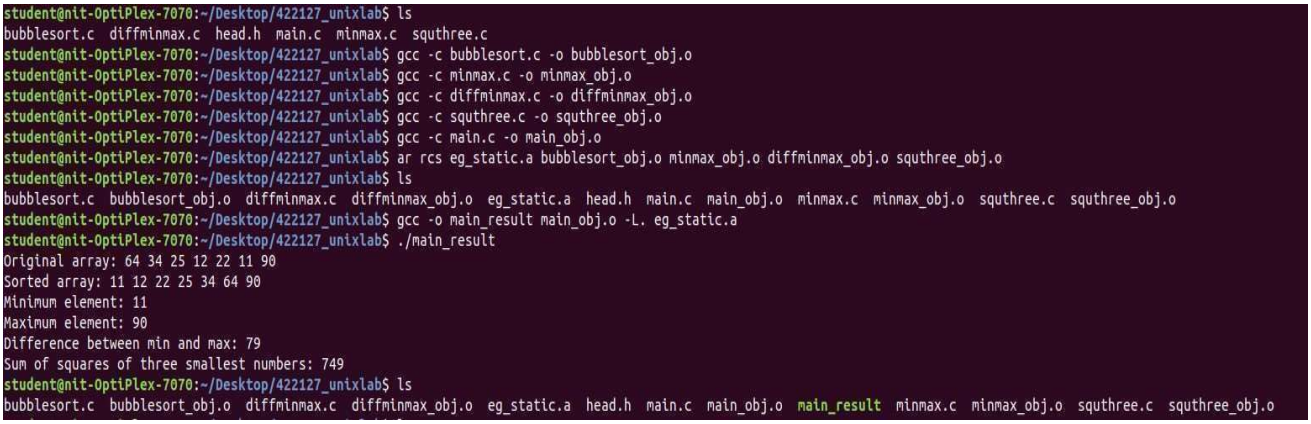
```
        printf("%d ", arr[i]);
    printf("\n");
}

// diffminmax.c

#include <stdio.h>

// Function to find the difference between the minimum and maximum elements in a sorted
array
int findDifference(int arr[], int n) {
    // Assuming n is greater than 1
    return arr[n - 1] - arr[0];
}

// minmax.c

#include <stdio.h>

// Function to find the minimum and maximum elements in a sorted array
void findMinMax(int arr[], int n, int *min, int *max) {
    *min = arr[0];
    *max = arr[n - 1];
}

//squthree.c

#include <stdio.h>

// Function to find the sum of squares of the three smallest numbers in a sorted array
```

```
int sumOfSquaresOfThreeSmallest(int arr[], int n) {
    if (n < 3) {
        printf("The array should have at least three elements.\n");
        return -1;  // Return an error value
    }

    int sum = 0;
    for (int i = 0; i < 3; i++) {
        sum += arr[i] * arr[i];
    }

    return sum;
}

//main.c


#include<stdio.h>
#include "head.h"



int main() {
    int arr[] = {64, 34, 25, 12, 22, 11, 90};
    int n = sizeof(arr) / sizeof(arr[0]);

    printf("Original array: ");
    printArray(arr, n);

    // Perform Bubble Sort
```

```
    bubbleSort(arr, n);

    printf("Sorted array: ");
    printArray(arr, n);
    int min, max;
    findMinMax(arr, n, &min, &max);

    printf("Minimum element: %d\n", min);
    printf("Maximum element: %d\n", max);

    if (n < 2) {
        printf("The array should have at least two elements.\n");
        return 1;
    }

    int difference = findDifference(arr, n);

    printf("Difference between min and max: %d\n", difference);

    int result = sumOfSquaresOfThreeSmallest(arr, n);

    if (result != -1) {
        printf("Sum of squares of three smallest numbers: %d\n", result);
    }

    return 0;
}

//head.h
```

```
void bubbleSort(int arr[], int n);

void printArray(int arr[], int size);

void findMinMax(int arr[], int n, int *min, int *max);

int findDifference(int arr[], int n);

int sumOfSquaresOfThreeSmallest(int arr[], int n);
```

1. STATIC:



2. DYNAMIC: