

UMass Boston CS 240  
**Homework 6**  
Due on December 15 at 5 PM (EDT)

**Information:**

- Homework files uploaded on: <https://cs.umb.edu/~aaditya/hw/06>
- Use the given homework files and update the existing code.
- After modifying, run the program files with sample input and verify the given output.
- Required comment on top of the program file, please fill the following details:
  - Your Name
  - Date when created file
  - How you approached the solution
  - Challenges faced

- Following homework files need to be submitted on Gradescope:

*The filenames are case sensitive, kindly put all filenames as lowercase.*

- program1.c – 15 points
- program2.c – 20 points
- program3.c – 20 points
- program4.c – 20 points
- program5.c – 20 points
- readme.txt – 5 points
  - a. Students worked with:
  - b. Books/Websites consulted:
  - c. Time spent on homework (hours):
- Attach screenshots of the output in case the Test on Autograder fails but you get the correct outcome on your console.

**Homework programs (5):**

*More instructions are given in the homework program files.*

1. program1.c: C program to combine 2 lists of integers and implement sorting in descending order.

**Sample input:**

Enter the number of items in list 1: 5

Input 5 items: 99

34

5

12

8

Enter the number of items in list 2: 2

Input 2 items: 44

70

**Output:**

The merged list in descending order is:

99 70 44 34 12 8 5

2. program2.c: C program to find the second largest element in the array.

Sample input:

Enter the size of array: 5

Enter 5 elements: 34

88

56

1

3

Output:

The Second largest element in the array is: 56

3. program3.c: C program to calculate exponentials using recursion.

Sample input:

Enter value of base: 2

Enter value of power: 5

Output:

2 to the power of 5 is: 32

4. program4.c: C program to find the distance between your home and university. (Remember: 1 feet = 12 inches)

Sample input:

Enter the distance in feet & inches from your house to nearest T-station: 12 8

Enter the distance in feet & inches from T-station to UMass Boston: 4 8

Sample output:

Total distance - Feet: 17, Inches: 4

5. program5.c: C program to query a student record by the Grades obtained.

Sample output:

Enter the number of students: 3

Enter the name and grade of 3 students: ann b-  
tom b+

harry a

Enter the number of queries: 2

Query by grade: c

Not found

Query by grade: b+

tom