Test Results

File:

97 89 77 67 17 82 49 11 100 66 56 17

Output:

Point 1: (1, 97)

Point 2: (9, 100)

Max Container (Area): 776

File

733 289 349 519 96 92 334 840 707 744 267 127 751 786 780 264 572 532 311 879 470 876 673 808 721 874 220 155 719 973 405 801 129 393 93 618 304 591 205 316 157 41 708 700 370 789 847 91 473 100 594 266 583 557 420 246 159 269 573 385 722 812 742 704 102 526 228 880 927 779 595 362 229 497 42 516 81 59 242 657 922 301 907 609 492 943 626 355 214 521 302 817 878 536 140 75 118 765 867 189 581 568 259 319 176 318 730 518 386 655 948 429 240 26 900 34

Output:

Point 1: (8, 840)

Point 2: (115, 900)

Max Container (Area): 89880

The main goal of this assignment is to read points from a file and then using their index and value to find the maximum area of a containers formed from any two points. I decided to print the points as well as the area to allow for more readability and checking values. My program reads the file data.txt and traverses through all the integers to get a total count that I then use to initialize my array points. I then open a new scanner and traverse the file this time storing all the values into my array. The program then continues to a nested for loop where it calculates the width and height of every combination of two points only saving the ones resulting in the greatest product (area). One issue I had to take care of was getting the size I needed for the array, and this is why I used 2 scanners. One interaction I learned is when throwing exceptions, they go to the method they were called from so I needed one in my createArray method as well as main. If I were to do this again I would like to clean up my methods and maybe create and object to store variables maxArea, maxIndex, and maxIndex2 so that I could return them all to main rather than printing the points in my maxContainer method.