

In-Class Exercise 3

The image is grainy because the pixels have been “enlarged” so that several copies of each appear on the screen. In the original image, the pixels are so small and fine that the eye sees a single clear, continuous image.

In-Class Exercise 4

Albert Einstein is in the statue, and the statue is located across the street from the national mall.

In-Class Exercise 5

The person in the photo is George Gamow.

In-Class Exercise 6

The output will be:

BEFORE: A=[1,2] B=[3,4]

BEFORE: X=[1,2] Y=[3,4]

AFTER: X=[3,4] Y=[1,2]

AFTER: A=[1,2] B=[3,4]

The first two lines of the output display what values are stored in each array before the swap method takes place. The original values (arrays A and B) are printed, as well as the parameters that refer to them (arrays X and Y). The third line of output represents the swap that has taken place. It should be noted that the original arrays A and B are NOT modified, as is shown by the fourth line of output. The swap that takes place does so between two references to A and B, or two shallow copies of A and B.

In-Class Exercise 7

The output will be:

BEFORE: A=[1,2] B=[3,4]

BEFORE: X=[1,2] Y=[3,4]

AFTER: X=[3,4] Y=[1,2]

AFTER: A=[3,4] B=[1,2]

Similarly to In-Class Exercise 6, the first two lines of the output display the array and the arrays passed as parameters before any alterations have been made. The swap method used in this program uses deep copies, which actually changes the original arrays A and B, which explains why after the method has taken place, A and B have been swapped, not just X and Y.