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Unit 5
Module 3

Ex. 3.2

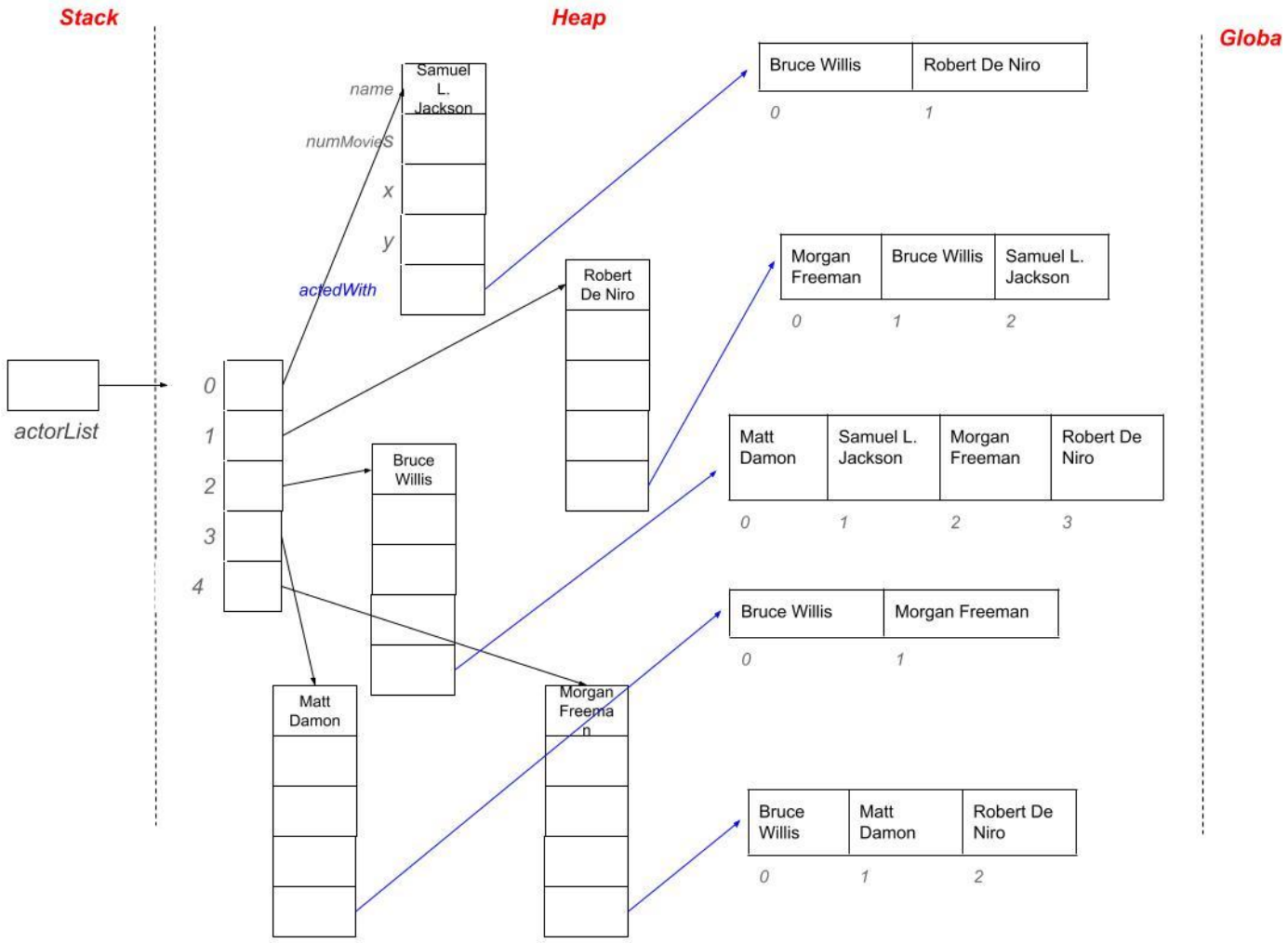
How many names beyond 10 can be fit into the drawing area?

The largest two names (“Samuel L. Jackson,” “Robert De Niro,” “Bruce Willis,” and others) may be visible when ALL 53,827 names are placed in the drawing area.

Ex. 3.5

1. The array list of Actor objects for each movie points to the same instances on the heap as the array list actorList and the hashmap based on this actorList. Thus the changes made to the Actor objects through the list of actors in each movie (specifically, the changes to the actedWith field in each Actor object) will be obvious (accessible) through the other two data structures too, despite the fact that this array list is declared, built, and handled inside the for-each-movie loop and thus is out of scope (unreachable) for the other two structures. In fact, it is its variable that is unreachable, while the objects it points to are accessible.
2. The drawing algorithm in main traverses the actors list, which in turn is assigned the value of the actorList from ActorConnectivityMaker. As explained above, the actedWith field in each Actor object is populated through a hashmap and an array list of Actor objects in each movie. Thus the drawLinks method in main, traversing the actors array list has access to each Actor object’s actedWith field, and correspondingly by traversing the actedWith arraylist, this method has access to the x and y fields of each actor in actedWith.

Ex. 3.6


Stack
Heap
Globa
actorList
0
1
2
3
4
name
numMovieS
x
y
actedWith
Samuel L. Jackson
Robert De Niro
Bruce Willis
Matt Damon
Morgan Freeman
Bruce Willis
Robert De Niro
0
1
Morgan Freeman
Bruce Willis
Samuel L. Jackson
0
1
2
Matt Damon
Samuel L. Jackson
Morgan Freeman
Robert De Niro
0
1
2
3
Bruce Willis
Morgan Freeman
0
1
Bruce Willis
Matt Damon
Robert De Niro
0
1
2