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PS-4 Write up

My recommendations for different Bacons:

I made my decision for the best Kevin Bacon's by first looking at the top centers of the universe sorted by average separation, the first of which is Kali Rocha. Kali Rocha's average separation is notably lower than Kevin Bacon at 4.0×10^{-3} , while Kevin Bacon's average separation is 0.01. In terms of bad Kevin Bacons, I picked anybody who had infinite separation from Candice Roman because she also ranked super high as the top centers of the universe. I would not recommend Kimberly Liebe as she is only connected to four other actors in the universe.

(evidence/output files below)

Test Files with actorsTest.txt, moviesTest.txt, movie-actorsTest.txt

outputs:

```
/Library/Java/JavaVirtualMachines/jdk-16.0.2.jdk/Contents/Home/bin/java ...
Commands
c : (positive number) list <#> top centers of the universe sorted by average separation
d : list actors sorted by degree, with degree between low and high
i : list actors with infinite separation from the current center
p : find path from <name> to current center of the universe
s : list actors sorted by non-infinite separation from the current center, with separation between low and high
u : make <name> the center of the universe
q: quit game
> Kevin Bacon's game
>c
Enter number of actors to meet>6
Sorted actors by average separation
Bob
Alice
Nobody
Charlie
Nobody's Friend
Kevin Bacon
>c
Enter number of actors to meet>3
Sorted actors by average separation
Bob
Alice
Nobody
>d
Enter low1
Enter high3
Nobody
Nobody's Friend
Kevin Bacon
Dartmouth (Earl thereof)
>3
>4
>d
Enter low3
Enter high4
Bob
Alice
```

```

Charlie
Kevin Bacon
>i
Kevin Bacon has not costarred with
Nobody
Nobody's Friend
>p
Enter actor name>Bob
Bob
Bob's number is 1
Kevin Bacon appeared in A movie with Bob
>u
Enter actor name>Alice
Alice is now the center of the acting universe, connected to 5/7 with average separation 0.6
>p
Enter actor name>Kevin Bacon
Kevin Bacon
Kevin Bacon's number is 1
Alice appeared in A movie E movie with Kevin Bacon
>q

Process finished with exit code 1
|

```

Printed graph of 'universe'

```

/Library/Java/JavaVirtualMachines/jdk-16.0.2.jdk/Contents/Home/bin/java ...
Vertices: [Bob, Alice, Nobody, Charlie, Nobody's Friend, Kevin Bacon, Dartmouth (Earl thereof)]
Out edges: {Bob={Bob=[C movie, A movie], Alice=[A movie], Charlie=[C movie], Kevin Bacon=[A movie]}, Alice={Bob=[A movie], Alice=[D movie, A movie, E movie], Charlie=[D movie], Kevin Bacon=[D movie]}}
Process finished with exit code 0
|

```

Edgecases : ("invalid inputs")

```

/Library/Java/JavaVirtualMachines/jdk-16.0.2.jdk/Contents/Home/bin/java -javaagent:/Applications/IntelliJ IDEA CE.app/Contents/lib/idea_rt.jar -Didea.config.path=/Library/Java/JavaVirtualMachines/jdk-16.0.2.jdk/Contents/Home/bin/java -Didea.home.path=/Library/Java/JavaVirtualMachines/jdk-16.0.2.jdk/Contents/Home/bin/java -Didea.platform.prefix=JDK -Didea.vendor.id=JetBrains -Didea.version=2021.3.1 -jar /Library/Java/JavaVirtualMachines/jdk-16.0.2.jdk/Contents/Home/bin/java
Commands
c : (positive number) list <#> top centers of the universe sorted by average separation
d : list actors sorted by degree, with degree between low and high
i : list actors with infinite separation from the current center
p : find path from <name> to current center of the universen
s : list actors sorted by non-infinite separation from the current center, with separation between low and high
u : make <name> the center of the universe
q: quit game
> Kevin Bacon's game
>12
Invalid Input
>d
Enter low2
Enter hight
>invalid input
c
Enter number of actors to meet>-1
Sorted actors by average separation
>p
Enter actor name>hello
Invalid actor name>Kevin Bacon
Invalid Input
>s
Enter lowe
>invalid input

```

ACTUAL GAME WITH WHOLE FILES:

```
/Library/Java/JavaVirtualMachines/jdk-16.0.2.jdk/Contents/Home/bin/java ...  
Commands  
c : (positive number) list <#> top centers of the universe sorted by average separation  
d : list actors sorted by degree, with degree between low and high  
i : list actors with infinite separation from the current center  
p : find path from <name> to current center of the universe  
s : list actors sorted by non-infinite separation from the current center, with separation between low and high  
u : make <name> the center of the universe  
q: quit game  
> Kevin Bacon's game  
>c  
Enter number of actors to meet>10  
Sorted actors by average separation  
Kali Rocha  
James D'Arcy  
Rachel True  
Alex Daniels  
Julie Bishop  
Vicki Frederick  
Candice Roman  
Chris Ellis  
Ralph Molina  
Richard Dix  
>u  
Enter actor name>Kali Rocha  
Kali Rocha is now the center of the acting universe, connected to 7494/9235 with average separation 4.0032025620496394E-4  
>Candice Roman  
Invalid Input
```

```
>u  
Enter actor name>Candice Roman  
Candice Roman is now the center of the acting universe, connected to 7494/9235 with average separation 4.0032025620496394E-4  
>i  
Candice Roman has not costarred with  
Jorge RomÃn  
Franco Citti  
Julie Bishop  
Vicki Frederick  
Ron Brown  
Patrick Shai  
Ralph Molina  
Holden McGuire  
Roger Lloyd-Pack  
Stephen Hawking  
Geri Halliwell  
Hideyuki Tanaka  
Mauricio Venegas  
Lawrence Wilson  
Richard (II) Cowan  
Gina Alajar
```

[cont.]

```
Mervyn Johns
Fernando Bolles
>u
Enter actor name>Kimberly Liebe
Kimberly Liebe is now the center of the acting universe, connected to 4/9235 with average separation 0.75
>u
Enter actor name>Kevin Bacon
Kevin Bacon is now the center of the acting universe, connected to 7494/9235 with average separation 0.010675206832132373
>s
Enter low0
Enter high1
Kevin Bacon's costars:
>s
Enter low0
Enter high2
Kevin Bacon's costars:
Jennifer Aniston is 1 movies away from Kevin Bacon
Christian Slater is 1 movies away from Kevin Bacon
Joe Mantegna is 1 movies away from Kevin Bacon
Bill Paxton is 1 movies away from Kevin Bacon
Molly Sweeney is 1 movies away from Kevin Bacon
```

[cont]

```
Neve Campbell is 1 movies away from Kevin Bacon
Laurie Metcalf is 1 movies away from Kevin Bacon
Tess Harper is 1 movies away from Kevin Bacon
Meg Ryan is 1 movies away from Kevin Bacon
Tom Hanks is 1 movies away from Kevin Bacon
Jennifer Jason Leigh is 1 movies away from Kevin Bacon
Rudy Ramos is 1 movies away from Kevin Bacon
Stephanie Sawyer is 1 movies away from Kevin Bacon
```

```
>q
```

```
Process finished with exit code 1
```