



# Problem 14

## Six Degrees of Kevin Bacon

13 points

JAVA: program name must be prob14.class  
C/C++ program name must be: prob14.exe

### Task Description

The trivia game Six Degrees of Kevin Bacon is based on the concept of the small world phenomenon. The premise of the game is that any actor can be linked, through their film roles, to actor Kevin Bacon in six links or less. The game requires a group of players to try to connect any film actor in history to the Kevin Bacon as quickly as possible and in as few links as possible.

Write a program to compute an actor's Bacon number from a limited movie database.

### Program Input

The input file (prob14.in) is divided into two sections. The first section lists movies that will be used to calculate Bacon numbers. The second section lists the actors whose Bacon numbers the program must calculate. Section names appear in square brackets. Movie and actor names are written in CamelCase\*.

```
[MOVIES]
BeautyShop QueenLatifah AliciaSilverstone AndieMacDowell AlfreWoodard KevinBacon DellaReese
Footloose KevinBacon LoriSinger JohnLithgow DianneWiest ChrisPenn SarahJessicaParker
JFK KevinCostner TommyLeeJones KevinBacon GaryOldman JohnCandy DonaldSutherland JoePesci LaurieMetcalf
APrarieHomeCompanion TommyLeeJones MarylouiseBurke WoodyHarrelson KevinKline
ThePinkPanther SteveMartin KevinKline JeanReno EmilyMortimer BeyonceKnowles
Dreamgirls JamieFoxx BeyonceKnowles EddieMurphy DannyGlover JenniferHudson JohnLithgow
Shooter MarkWahlberg MichaelPena DannyGlover KateMara EliasKoteas RhonaMitra
TheItalianJob MarkWahlberg CharlizeTheron DonaldSutherland JasonStatham MosDef
16Blocks BruceWillis MosDef DavidMorse JennaStern
LuckyNumberSlevin JoshHartnett BruceWillis LucyLiu MorganFreeman BenKingsley
BatmanBegins ChristianBale MichaelCaine LiamNeeson KatieHolmes GaryOldman
ThePhantomMenace LiamNeeson EwanMcGregor NataliePortman IanMcDiarmid
AttackOfTheClones EwanMcGregor NataliePortman HaydenChristensen ChristopherLee SamuelLJackson
SinCity JessicaAlba JoshHartnett RutgerHauer BruceWillis ElijahWood MickeyRourke
EternalSunshineOfTheSpotlessMind JimCarrey KateWinslet ElijahWood KirstenDunst GerryRobertByrne
BruceAlmighty JimCarrey MorganFreeman JenniferAniston PhilipBakerHall CatherineBell SteveCarell
TheTwoTowers SeanAstin CateBlanchett OrlandoBloom ChristopherLee ElijahWood IanMcKellen ViggoMortensen
TheAviator LeonardoDiCaprio CateBlanchett KateBeckinsale AlecBaldwin AlanAlda JudeLaw BrentSpiner
MenInBlack TommyLeeJones WillSmith LindaFiorentino VincentDOnofrio RipTorn TonyShaloub
WildWildWest WillSmith KevinKline KennethBranagh SalmaHayek MemmetWalsh
FunWithDickAndJane JimCarrey TeaLeoni AlecBaldwin AngieHarmon LaurieMetcalf JohnMichaelHiggins
Dogma BenAffleck MattDamon LindaFiorentino JasonMewes ChrisRock AlanRickman JasonLee SalmaHayek
[ACTORS]
EddieMurphy
[END]
```

### Program Output

The program should display the Bacon number and the set of links used to compute the number.

```
EddieMurphy has a Bacon number of 2
EddieMurphy was in Dreamgirls with JohnLithgow
JohnLithgow was in Footloose with KevinBacon
```