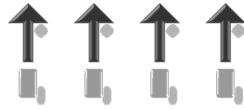


Competitive Programming



Methods to Solve (2000-present)

Use these filters to narrow down your next problem to solve:

OJ: , Topic: , Quality:

Online Judge shown: Both

Problem topics shown: NUS CS2040/C/S : (Basic) Data Structures and Algorithms level: 1D/2D Array/Vector, Sorting, Linked List, Binary Heap, Hash Table, Binary Search Tree, Graph DS, Graph Traversal, SSSP

Problem Quality: All

Number of problems shown (initially in CP4 order): 648

Information is up to date as of 10 February 2022

You can now sort these problems based on Distinct ACcepted Users (DACU) column.

Generally, problems with high DACU are the easier problems.

Note that we only update DACU column manually (not a live data).

Note: Column Point is only relevant for Kattis online judge.

Show entries

Search:

Both OJ

Problem Title

CP4

00414



[Machined Surfaces](#)

























2.2a, 1D Array, Medium

























00482



















































[Permutation Arrays](#)

























2.2a, 1D Array, Medium

























| Both OJ | Problem Title | CP4 |
|---------------------------|--|-------------------------------|
| 00591 |  Box of Bricks | 2.2a, 1D Array, Medium |
| 10038 |  Jolly Jumpers | 2.2a, 1D Array, Medium |
| 10050 |  Hartals | 2.2a, 1D Array, Medium |
| 11192 |  Group Reverse | 2.2a, 1D Array, Medium |
| 11496 |  Musical Loop | 2.2a, 1D Array, Medium |
| 11608 |  No Problem | 2.2a, 1D Array, Medium |
| 11875 |  Brick Game | 2.2a, 1D Array, Medium |
| <i>12150</i> |  Pole Position | <i>2.2a, 1D Array, Medium</i> |
| <i>12356</i> |  Army Buddies | <i>2.2a, 1D Array, Medium</i> |
| 12854 |  Automated Checking Machine | 2.2a, 1D Array, Medium |
| 12959 |  Strategy Game | 2.2a, 1D Array, Medium |
| 12996 |  Ultimate Mango Challenge | 2.2a, 1D Array, Medium |
| 13026 |  Search the Khoj | 2.2a, 1D Array, Medium |
| <i>13181</i> |  Sleeping in hostels | <i>2.2a, 1D Array, Medium</i> |
| <i>baloni</i> |  baloni | <i>2.2a, 1D Array, Medium</i> |
| <i>downtime</i> |  downtime | <i>2.2a, 1D Array, Medium</i> |
| erase |  erase | 2.2a, 1D Array, Medium |
| fluortanten |  fluortanten | 2.2a, 1D Array, Medium |
| <i>greedilyincreasing</i> |  greedilyincreasing | <i>2.2a, 1D Array, Medium</i> |
| <i>jollyjumpers</i> |  jollyjumpers | <i>2.2a, 1D Array, Medium</i> |
| rankproblem |  rankproblem | 2.2a, 1D Array, Medium |
| trackingshares |  trackingshares | 2.2a, 1D Array, Medium |
| 00230 |  Borrowers | 2.2b, 1D Array, Harder |
| 00394 |  Mapmaker | 2.2b, 1D Array, Harder |

























| Both OJ | Problem Title | CP4 |
|------------------------|--|------------------------|
| 00467 |  Synching Signals | 2.2b, 1D Array, Harder |
| 00665 |  False coin | 2.2b, 1D Array, Harder |
| 00946 |  A Pile of Boxes | 2.2b, 1D Array, Harder |
| 10978 |  Let's Play Magic! | 2.2b, 1D Array, Harder |
| 11093 |  Just Finish it up | 2.2b, 1D Array, Harder |
| 11222 |  Only I did it! | 2.2b, 1D Array, Harder |
| 11850 |  Alaska | 2.2b, 1D Array, Harder |
| 12662 |  Good Teacher | 2.2b, 1D Array, Harder |
| 13048 |  Burger Stand | 2.2b, 1D Array, Harder |
| astro |  astro | 2.2b, 1D Array, Harder |
| crashingrobots |  crashingrobots | 2.2b, 1D Array, Harder |
| divideby100 |  divideby100 | 2.2b, 1D Array, Harder |
| flippingpatties |  flippingpatties | 2.2b, 1D Array, Harder |
| inverteddeck |  inverteddeck | 2.2b, 1D Array, Harder |
| keypad |  keypad | 2.2b, 1D Array, Harder |
| mastermind |  mastermind | 2.2b, 1D Array, Harder |
| physicalmusic |  physicalmusic | 2.2b, 1D Array, Harder |
| piperotation |  piperotation | 2.2b, 1D Array, Harder |
| pivot |  pivot | 2.2b, 1D Array, Harder |
| queens |  queens | 2.2b, 1D Array, Harder |
| rockband |  rockband | 2.2b, 1D Array, Harder |
| upsanddownsofinvesting |  upsanddownsofinvesting | 2.2b, 1D Array, Harder |
| 00541 |  Error Correction | 2.2c, 2D Array, Easier |
| 00585 |  Triangles | 2.2c, 2D Array, Easier |

























| Both OJ | Problem Title | CP4 |
|----------------------------------|---|------------------------|
| 10703 |  Free spots | 2.2c, 2D Array, Easier |
| 10920 |  Spiral Tap | 2.2c, 2D Array, Easier |
| 11040 |  Add bricks in the wall | 2.2c, 2D Array, Easier |
| 11349 |  Symmetric Matrix | 2.2c, 2D Array, Easier |
| 11581 |  Grid Successors | 2.2c, 2D Array, Easier |
| 11835 |  Formula 1 | 2.2c, 2D Array, Easier |
| 12187 |  Brothers | 2.2c, 2D Array, Easier |
| 12667 |  Last Blood | 2.2c, 2D Array, Easier |
| 12981 |  Secret Master Plan | 2.2c, 2D Array, Easier |
| compromise |  compromise | 2.2c, 2D Array, Easier |
| epigdanceoff |  epigdanceoff | 2.2c, 2D Array, Easier |
| flowshop |  flowshop | 2.2c, 2D Array, Easier |
| imageprocessing |  imageprocessing | 2.2c, 2D Array, Easier |
| nineknights |  nineknights | 2.2c, 2D Array, Easier |
| thisaintyourgrandpascheckerboard |  thisaintyourgrandpaschecke... | 2.2c, 2D Array, Easier |
| 00101 |  The Blocks Problem | 2.2d, 2D Array, Harder |
| 00434 |  Matty's Blocks | 2.2d, 2D Array, Harder |
| 00466 |  Mirror, Mirror | 2.2d, 2D Array, Harder |
| 00512 |  Spreadsheet Tracking | 2.2d, 2D Array, Harder |
| 00707 |  Robbery | 2.2d, 2D Array, Harder |
| 10016 |  Flip-Flop the Squarelotron | 2.2d, 2D Array, Harder |
| 10855 |  Rotated square | 2.2d, 2D Array, Harder |
| 11360 |  Have Fun with Matrices | 2.2d, 2D Array, Harder |
| 12291 |  Polyomino Composer | 2.2d, 2D Array, Harder |

























| Both OJ | Problem Title | CP4 |
|-------------------|---|------------------------|
| 12398 |  NumPuzz I | 2.2d, 2D Array, Harder |
| 2048 |  2048 | 2.2d, 2D Array, Harder |
| apples |  apples | 2.2d, 2D Array, Harder |
| falcondiv |  falcondiv | 2.2d, 2D Array, Harder |
| flagquiz |  flagquiz | 2.2d, 2D Array, Harder |
| funhouse |  funhouse | 2.2d, 2D Array, Harder |
| prva |  prva | 2.2d, 2D Array, Harder |
| rings2 |  rings2 | 2.2d, 2D Array, Harder |
| tetris |  tetris | 2.2d, 2D Array, Harder |
| 00400 |  Unix ls | 2.2e, Sorting, Easier |
| 00855 |  Lunch in Grid City | 2.2e, Sorting, Easier |
| 10107 |  What is the Median? | 2.2e, Sorting, Easier |
| 10880 |  Colin and Ryan | 2.2e, Sorting, Easier |
| 10905 |  Children's Game | 2.2e, Sorting, Easier |
| 11039 |  Building designing | 2.2e, Sorting, Easier |
| 11588 |  Image Coding | 2.2e, Sorting, Easier |
| 11777 |  Automate the Grades | 2.2e, Sorting, Easier |
| 11824 |  A Minimum Land Price | 2.2e, Sorting, Easier |
| 12071 |  Understanding Recursion | 2.2e, Sorting, Easier |
| 12541 |  Birthdates | 2.2e, Sorting, Easier |
| 12709 |  Falling Ants | 2.2e, Sorting, Easier |
| 12861 |  Help cupid | 2.2e, Sorting, Easier |
| 13113 |  Presidential Election | 2.2e, Sorting, Easier |
| basicprogramming2 |  basicprogramming2 | 2.2e, Sorting, Easier |

























| Both OJ | Problem Title | CP4 |
|-----------------------|--|------------------------------|
| closingtheloop |  closingtheloop | 2.2e, Sorting, Easier |
| cups |  cups | 2.2e, Sorting, Easier |
| <i>height</i> |  height | <i>2.2e, Sorting, Easier</i> |
| judging |  judging | 2.2e, Sorting, Easier |
| magictrick |  magictrick | 2.2e, Sorting, Easier |
| mjehuric |  mjehuric | 2.2e, Sorting, Easier |
| musicaltrees |  musicaltrees | 2.2e, Sorting, Easier |
| nothanks |  nothanks | 2.2e, Sorting, Easier |
| <i>sidewaysorting</i> |  sidewaysorting | <i>2.2e, Sorting, Easier</i> |
| 00123 |  Searching Quickly | 2.2f, Sorting, Harder |
| 00450 |  Little Black Book | 2.2f, Sorting, Harder |
| 00790 |  Head Judge Headache | 2.2f, Sorting, Harder |
| <i>01610</i> |  Party Games | <i>2.2f, Sorting, Harder</i> |
| 10194 |  Football (aka Soccer) | 2.2f, Sorting, Harder |
| <i>10258</i> |  Contest Scoreboard | <i>2.2f, Sorting, Harder</i> |
| 10698 |  Football Sort | 2.2f, Sorting, Harder |
| 11300 |  Spreading the Wealth | 2.2f, Sorting, Harder |
| <i>11321</i> |  Sort! Sort!! and Sort!!! | <i>2.2f, Sorting, Harder</i> |
| 12269 |  Lawn mower | 2.2f, Sorting, Harder |
| addemup |  addemup | 2.2f, Sorting, Harder |
| booking |  booking | 2.2f, Sorting, Harder |
| chartingprogress |  chartingprogress | 2.2f, Sorting, Harder |
| <i>classy</i> |  classy | <i>2.2f, Sorting, Harder</i> |
| dirtydriving |  dirtydriving | 2.2f, Sorting, Harder |

























| Both OJ | Problem Title | CP4 |
|----------------------|--|------------------------------|
| <i>dyslectionary</i> |  <i>dyslectionary</i> | <i>2.2f, Sorting, Harder</i> |
| gearchanging |  gearchanging | 2.2f, Sorting, Harder |
| includescoring |  includescoring | 2.2f, Sorting, Harder |
| lawnmower |  lawnmower | 2.2f, Sorting, Harder |
| longswaps |  longswaps | 2.2f, Sorting, Harder |
| <i>musicyourway</i> |  <i>musicyourway</i> | <i>2.2f, Sorting, Harder</i> |
| <i>sortofsorting</i> |  <i>sortofsorting</i> | <i>2.2f, Sorting, Harder</i> |
| zipfsong |  zipfsong | 2.2f, Sorting, Harder |
| 00299 |  Train Swapping | 2.2g, Special Sorting |
| 00612 |  DNA Sorting | <i>2.2g, Special Sorting</i> |
| 10327 |  Flip Sort | 2.2g, Special Sorting |
| 10810 |  Ultra-QuickSort | 2.2g, Special Sorting |
| 11462 |  Age Sort | <i>2.2g, Special Sorting</i> |
| 11495 |  Bubbles and Buckets | <i>2.2g, Special Sorting</i> |
| 11858 |  Frosh Week | 2.2g, Special Sorting |
| 13212 |  How many inversions? | <i>2.2g, Special Sorting</i> |
| <i>bread</i> |  <i>bread</i> | <i>2.2g, Special Sorting</i> |
| excursion |  excursion | 2.2g, Special Sorting |
| froshweek |  froshweek | 2.2g, Special Sorting |
| gamenight |  gamenight | 2.2g, Special Sorting |
| <i>mali</i> |  <i>mali</i> | <i>2.2g, Special Sorting</i> |
| sort |  sort | 2.2g, Special Sorting |
| ultraquicksort |  ultraquicksort | 2.2g, Special Sorting |
| 00127 |  "Accordian" Patience | 2.2j, Stack |

























| Both OJ | Problem Title | CP4 |
|-------------------|---|----------------------------|
| 00514 |  Rails | 2.2j, Stack |
| 00732 |  Anagrams by Stack | 2.2j, Stack |
| 01062 |  Containers | 2.2j, Stack |
| 10858 |  Unique Factorization | 2.2j, Stack |
| 13055 |  Inception | 2.2j, Stack |
| dream |  dream | 2.2j, Stack |
| evenup |  evenup | 2.2j, Stack |
| pairingsocks |  pairingsocks | 2.2j, Stack |
| restaurant |  restaurant | 2.2j, Stack |
| reversebinary |  reversebinary | 2.2j, Stack |
| symmetricorder |  symmetricorder | 2.2j, Stack |
| thegrandadventure |  thegrandadventure | 2.2j, Stack |
| throws |  throws | 2.2j, Stack |
| 00551 |  Nesting a Bunch of Bracket... | 2.2k, Stack-based Problems |
| 00673 |  Parentheses Balance | 2.2k, Stack-based Problems |
| 00727 |  Equation | 2.2k, Stack-based Problems |
| 11111 |  Generalized Matryoshkas | 2.2k, Stack-based Problems |
| bracketsequence |  bracketsequence | 2.2k, Stack-based Problems |
| bungeebuilder |  bungeebuilder | 2.2k, Stack-based Problems |
| circuitmath |  circuitmath | 2.2k, Stack-based Problems |
| delimitersoup |  delimitersoup | 2.2k, Stack-based Problems |
| 00246 |  10-20-30 | 2.2l, List/Queue/Deque |
| 00540 |  Team Queue | 2.2l, List/Queue/Deque |
| 10172 |  The Lonesome Cargo Distrib... | 2.2l, List/Queue/Deque |

























| Both OJ | Problem Title | CP4 |
|---------------|---|------------------------|
| 10901 |  Ferry Loading III | 2.2l, List/Queue/Deque |
| 10935 |  Throwing cards away I | 2.2l, List/Queue/Deque |
| 11034 |  Ferry Loading IV | 2.2l, List/Queue/Deque |
| 11797 |  Drutojan Express | 2.2l, List/Queue/Deque |
| 11988 |  Broken Keyboard (a.k.a. Be... | 2.2l, List/Queue/Deque |
| 12100 |  Printer Queue | 2.2l, List/Queue/Deque |
| 12108 |  Extraordinarily Tired Stud... | 2.2l, List/Queue/Deque |
| 12207 |  That is Your Queue | 2.2l, List/Queue/Deque |
| backspace |  backspace | 2.2l, List/Queue/Deque |
| ferryloading3 |  ferryloading3 | 2.2l, List/Queue/Deque |
| ferryloading4 |  ferryloading4 | 2.2l, List/Queue/Deque |
| foosball |  foosball | 2.2l, List/Queue/Deque |
| integerlists |  integerlists | 2.2l, List/Queue/Deque |
| joinstrings |  joinstrings | 2.2l, List/Queue/Deque |
| lyklagangriti |  lyklagangriti | 2.2l, List/Queue/Deque |
| server |  server | 2.2l, List/Queue/Deque |
| sim |  sim | 2.2l, List/Queue/Deque |
| teque |  teque | 2.2l, List/Queue/Deque |
| trendingtopic |  trendingtopic | 2.2l, List/Queue/Deque |
| 01203 |  Argus | 2.3a, Priority Queue |
| 11995 |  I Can Guess the Data Struc... | 2.3a, Priority Queue |
| 11997 |  K Smallest Sums | 2.3a, Priority Queue |
| 13190 |  Rockabye Toby. | 2.3a, Priority Queue |
| alehouse |  alehouse | 2.3a, Priority Queue |

























| Both OJ | Problem Title | CP4 |
|-----------------------|---|----------------------|
| clinic |  clinic | 2.3a, Priority Queue |
| guessthedatastructure |  guessthedatastructure | 2.3a, Priority Queue |
| janeeyre |  janeeyre | 2.3a, Priority Queue |
| jugglingpatterns |  jugglingpatterns | 2.3a, Priority Queue |
| knigsoftheforest |  knigsoftheforest | 2.3a, Priority Queue |
| numbertree |  numbertree | 2.3a, Priority Queue |
| pharmacy |  pharmacy | 2.3a, Priority Queue |
| rationalsequence2 |  rationalsequence2 | 2.3a, Priority Queue |
| rationalsequence3 |  rationalsequence3 | 2.3a, Priority Queue |
| stockprices |  stockprices | 2.3a, Priority Queue |
| 00499 |  What's The Frequency, Kenn... | 2.3b, DAT, ASCII |
| 00895 |  Word Problem | 2.3b, DAT, ASCII |
| 10008 |  What's Cryptanalysis? | 2.3b, DAT, ASCII |
| 10062 |  Tell me the frequencies! | 2.3b, DAT, ASCII |
| 10260 |  Soundex | 2.3b, DAT, ASCII |
| 10293 |  Word Length and Frequency | 2.3b, DAT, ASCII |
| 10625 |  GNU = GNU'sNotUnix | 2.3b, DAT, ASCII |
| 11340 |  Newspaper | 2.3b, DAT, ASCII |
| 11577 |  Letter Frequency | 2.3b, DAT, ASCII |
| 12626 |  I ❤️ Pizza | 2.3b, DAT, ASCII |
| alphabetspam |  alphabetspam | 2.3b, DAT, ASCII |
| keyboardd |  keyboardd | 2.3b, DAT, ASCII |
| quICKbrownfox |  quICKbrownfox | 2.3b, DAT, ASCII |
| soundex |  soundex | 2.3b, DAT, ASCII |

























| Both OJ | Problem Title | CP4 |
|--------------------|--|------------------------|
| 00755 |  487--3279 | 2.3c, DAT, Others |
| 01368 |  DNA Consensus String | 2.3c, DAT, Others |
| 11203 |  Can you decide it for ME? | 2.3c, DAT, Others |
| 12650 |  Dangerous Dive | 2.3c, DAT, Others |
| bookingaroom |  bookingaroom | 2.3c, DAT, Others |
| busnumbers |  busnumbers | 2.3c, DAT, Others |
| freefood |  freefood | 2.3c, DAT, Others |
| hardware |  hardware | 2.3c, DAT, Others |
| heimavinna |  heimavinna | 2.3c, DAT, Others |
| princesspeach |  princesspeach | 2.3c, DAT, Others |
| relocation |  relocation | 2.3c, DAT, Others |
| simone |  simone | 2.3c, DAT, Others |
| 10887 |  Concatenation of Languages | 2.3d, Hash Table (set) |
| 11849 |  CD | 2.3d, Hash Table (set) |
| 12049 |  Just Prune The List | 2.3d, Hash Table (set) |
| 13148 |  A Giveaway | 2.3d, Hash Table (set) |
| bard |  bard | 2.3d, Hash Table (set) |
| boatparts |  boatparts | 2.3d, Hash Table (set) |
| cd |  cd | 2.3d, Hash Table (set) |
| deduplicatingfiles |  deduplicatingfiles | 2.3d, Hash Table (set) |
| engineeringenglish |  engineeringenglish | 2.3d, Hash Table (set) |
| esej |  esej | 2.3d, Hash Table (set) |
| everywhere |  everywhere | 2.3d, Hash Table (set) |
| greetingcard |  greetingcard | 2.3d, Hash Table (set) |

























| Both OJ | Problem Title | CP4 |
|----------------------------------|---|--|
| icpcawards |  icpcawards | 2.3d, Hash Table (set) |
| iwannabe |  iwannabe | 2.3d, Hash Table (set) |
| keywords |  keywords | 2.3d, Hash Table (set) |
| knotknowledge |  knotknowledge | 2.3d, Hash Table (set) |
| nodup |  nodup | 2.3d, Hash Table (set) |
| oddmanout |  oddmanout | 2.3d, Hash Table (set) |
| pizzahawaii |  pizzahawaii | 2.3d, Hash Table (set) |
| proofs |  proofs | 2.3d, Hash Table (set) |
| securedoors |  securedoors | 2.3d, Hash Table (set) |
| <i>shiritori</i> |  shiritori | <i>2.3d, Hash Table (set)</i> |
| shoppinglist |  shoppinglist | 2.3d, Hash Table (set) |
| shoppinglisteasy |  shoppinglisteasy | 2.3d, Hash Table (set) |
| upprodun |  upprodun | 2.3d, Hash Table (set) |
| whatdoesthefoxsay |  whatdoesthefoxsay | 2.3d, Hash Table (set) |
| 00484 |  The Department of Redundan... | 2.3e, Hash Table (map), E |
| 00860 |  Entropy Text Analyzer | 2.3e, Hash Table (map), E |
| <i>00902</i> |  Password Search | <i>2.3e, Hash Table (map), E</i> |
| 10282 |  Babelfish | 2.3e, Hash Table (map), E |
| 10295 |  Hay Points | 2.3e, Hash Table (map), E |
| 10374 |  Election | 2.3e, Hash Table (map), E |
| 10686 |  SQF Problems | 2.3e, Hash Table (map), E |
| 11286 |  Conformity | 2.3e, Hash Table (map), E |
| <i>11348</i> |  Exhibition | <i>2.3e, Hash Table (map), E</i> |
| <i>11629</i> |  Ballot evaluation | <i>2.3e, Hash Table (map), E</i> |

























| Both OJ | Problem Title | CP4 |
|-----------------------------|---|---------------------------|
| 12592 |  Slogan Learning of Princes... | 2.3e, Hash Table (map), E |
| babelfish |  babelfish | 2.3e, Hash Table (map), E |
| competitivearcadebasketball |  competitivearcadebasketbal... | 2.3e, Hash Table (map), E |
| conformity |  conformity | 2.3e, Hash Table (map), E |
| costumecontest |  costumecontest | 2.3e, Hash Table (map), E |
| election2 |  election2 | 2.3e, Hash Table (map), E |
| grandpabernie |  grandpabernie | 2.3e, Hash Table (map), E |
| haypoints |  haypoints | 2.3e, Hash Table (map), E |
| marko |  marko | 2.3e, Hash Table (map), E |
| metaprogramming |  metaprogramming | 2.3e, Hash Table (map), E |
| recount |  recount | 2.3e, Hash Table (map), E |
| rollcall |  rollcall | 2.3e, Hash Table (map), E |
| variablearithmetic |  variablearithmetic | 2.3e, Hash Table (map), E |
| 00417 |  Word Index | 2.3f, Hash Table (map), H |
| 10132 |  File Fragmentation | 2.3f, Hash Table (map), H |
| 10145 |  Lock Manager | 2.3f, Hash Table (map), H |
| 11572 |  Unique Snowflakes | 2.3f, Hash Table (map), H |
| 11860 |  Document Analyzer | 2.3f, Hash Table (map), H |
| 11917 |  Do Your Own Homework | 2.3f, Hash Table (map), H |
| addingwords |  addingwords | 2.3f, Hash Table (map), H |
| awkwardparty |  awkwardparty | 2.3f, Hash Table (map), H |
| basicinterpreter |  basicinterpreter | 2.3f, Hash Table (map), H |
| bokforing |  bokforing | 2.3f, Hash Table (map), H |
| conversationlog |  conversationlog | 2.3f, Hash Table (map), H |

























| Both OJ | Problem Title | CP4 |
|---------------------|--|---------------------------|
| iforaneyeye |  iforaneyeye | 2.3f, Hash Table (map), H |
| magicalcows |  magicalcows | 2.3f, Hash Table (map), H |
| minorsetback |  minorsetback | 2.3f, Hash Table (map), H |
| parallelanalysis |  parallelanalysis | 2.3f, Hash Table (map), H |
| recenice |  recenice | 2.3f, Hash Table (map), H |
| snowflakes |  snowflakes | 2.3f, Hash Table (map), H |
| 00501 |  Black Box | 2.3g, Balanced BST (set) |
| 00978 |  Lemmings Battle! | 2.3g, Balanced BST (set) |
| 10815 |  Andy's First Dictionary | 2.3g, Balanced BST (set) |
| 11062 |  Andy's Second Dictionary | 2.3g, Balanced BST (set) |
| 11136 |  Hoax or what | 2.3g, Balanced BST (set) |
| 13037 |  Chocolate | 2.3g, Balanced BST (set) |
| bst |  bst | 2.3g, Balanced BST (set) |
| caching |  caching | 2.3g, Balanced BST (set) |
| candydivision |  candydivision | 2.3g, Balanced BST (set) |
| compoundwords |  compoundwords | 2.3g, Balanced BST (set) |
| coursescheduling |  coursescheduling | 2.3g, Balanced BST (set) |
| ministryofmagic |  ministryofmagic | 2.3g, Balanced BST (set) |
| missinggnomes |  missinggnomes | 2.3g, Balanced BST (set) |
| orphanbackups |  orphanbackups | 2.3g, Balanced BST (set) |
| palindromicpassword |  palindromicpassword | 2.3g, Balanced BST (set) |
| raidteams |  raidteams | 2.3g, Balanced BST (set) |
| 00939 |  Genes | 2.3h, Balanced BST (map) |
| 10138 |  CDVII | 2.3h, Balanced BST (map) |

























| Both OJ | Problem Title | CP4 |
|------------------------|---|-----------------------------|
| 10226 |  Hardwood Species | 2.3h, Balanced BST (map) |
| 10420 |  List of Conquests | 2.3h, Balanced BST (map) |
| 11239 |  Open Source | 2.3h, Balanced BST (map) |
| 11308 |  Bankrupt Baker | 2.3h, Balanced BST (map) |
| 12504 |  Updating a Dictionary | 2.3h, Balanced BST (map) |
| administrativeproblems |  administrativeproblems | 2.3h, Balanced BST (map) |
| baconeegsandspam |  baconeegsandspam | 2.3h, Balanced BST (map) |
| cakeymccakeface |  cakeymccakeface | 2.3h, Balanced BST (map) |
| doctorkattis |  doctorkattis | 2.3h, Balanced BST (map) |
| fantasydraft |  fantasydraft | 2.3h, Balanced BST (map) |
| fodelsedagsmemorising |  fodelsedagsmemorising | 2.3h, Balanced BST (map) |
| hardwoodspecies |  hardwoodspecies | 2.3h, Balanced BST (map) |
| kattissquest |  kattissquest | 2.3h, Balanced BST (map) |
| notamused |  notamused | 2.3h, Balanced BST (map) |
| opensource |  opensource | 2.3h, Balanced BST (map) |
| problemclassification |  problemclassification | 2.3h, Balanced BST (map) |
| srednji |  srednji | 2.3h, Balanced BST (map) |
| warehouse |  warehouse | 2.3h, Balanced BST (map) |
| zoo |  zoo | 2.3h, Balanced BST (map) |
| 10909 |  Lucky Number | 2.3i, Order Statistics Tree |
| babynames |  babynames | 2.3i, Order Statistics Tree |
| continuousmedian |  continuousmedian | 2.3i, Order Statistics Tree |
| cookieselection |  cookieselection | 2.3i, Order Statistics Tree |
| gcpc |  gcpc | 2.3i, Order Statistics Tree |

























| Both OJ | Problem Title | CP4 |
|-------------------|---|-----------------------------|
| 00599 |  The Forrest for the Trees | 2.4a, Graph Data Structures |
| 10895 |  Matrix Transpose | 2.4a, Graph Data Structures |
| 10928 |  My Dear Neighbours | 2.4a, Graph Data Structures |
| 11550 |  Demanding Dilemma | 2.4a, Graph Data Structures |
| 11991 |  Easy Problem from Rujia Li... | 2.4a, Graph Data Structures |
| abinitio |  abinitio | 2.4a, Graph Data Structures |
| alphabetanimals |  alphabetanimals | 2.4a, Graph Data Structures |
| chopwood |  chopwood | 2.4a, Graph Data Structures |
| flyingsafely |  flyingsafely | 2.4a, Graph Data Structures |
| popularitycontest |  popularitycontest | 2.4a, Graph Data Structures |
| railroad |  railroad | 2.4a, Graph Data Structures |
| traveltheskies |  traveltheskies | 2.4a, Graph Data Structures |
| weakvertices |  weakvertices | 2.4a, Graph Data Structures |
| 00105 |  The Skyline Problem | 3.2b, Iterative (Two Loops) |
| 00592 |  Island of Logic | 3.2b, Iterative (Two Loops) |
| 00617 |  Nonstop Travel | 3.2b, Iterative (Two Loops) |
| 01260 |  Sales | 3.2b, Iterative (Two Loops) |
| 01588 |  Kickdown | 3.2b, Iterative (Two Loops) |
| 10041 |  Vito's Family | 3.2b, Iterative (Two Loops) |
| 10487 |  Closest Sums | 3.2b, Iterative (Two Loops) |
| 10570 |  Meeting with Aliens | 3.2b, Iterative (Two Loops) |
| 10670 |  Work Reduction | 3.2b, Iterative (Two Loops) |
| 10730 |  Antiarithmetic? | 3.2b, Iterative (Two Loops) |
| 11242 |  Tour de France | 3.2b, Iterative (Two Loops) |

























| Both OJ | Problem Title | CP4 |
|----------------|--|-----------------------------|
| 12205 |  Happy Telephones | 3.2b, Iterative (Two Loops) |
| 12488 |  Start Grid | 3.2b, Iterative (Two Loops) |
| 12583 |  Memory Overflow | 3.2b, Iterative (Two Loops) |
| 13018 |  Dice Cup | 3.2b, Iterative (Two Loops) |
| 8queens |  8queens | 3.2b, Iterative (Two Loops) |
| antiarithmetic |  antiarithmetic | 3.2b, Iterative (Two Loops) |
| bestrelayteam |  bestrelayteam | 3.2b, Iterative (Two Loops) |
| bikegears |  bikegears | 3.2b, Iterative (Two Loops) |
| blackfriday |  blackfriday | 3.2b, Iterative (Two Loops) |
| closestsums |  closestsums | 3.2b, Iterative (Two Loops) |
| codeguessing |  codeguessing | 3.2b, Iterative (Two Loops) |
| golombrulers |  golombrulers | 3.2b, Iterative (Two Loops) |
| kafkaesque |  kafkaesque | 3.2b, Iterative (Two Loops) |
| liga |  liga | 3.2b, Iterative (Two Loops) |
| majstor |  majstor | 3.2b, Iterative (Two Loops) |
| missingnumber |  missingnumber | 3.2b, Iterative (Two Loops) |
| peg |  peg | 3.2b, Iterative (Two Loops) |
| pet |  pet | 3.2b, Iterative (Two Loops) |
| putovanje |  putovanje | 3.2b, Iterative (Two Loops) |
| reduction |  reduction | 3.2b, Iterative (Two Loops) |
| register |  register | 3.2b, Iterative (Two Loops) |
| smoothiestand |  smoothiestand | 3.2b, Iterative (Two Loops) |
| summertrip |  summertrip | 3.2b, Iterative (Two Loops) |
| telephones |  telephones | 3.2b, Iterative (Two Loops) |

























| Both OJ | Problem Title | CP4 |
|---------------|---|------------------------------|
| tourdefrance |  tourdefrance | 3.2b, Iterative (Two Loops) |
| 00154 |  Recycling | 3.2c, Three+ Nested Loops, E |
| 00441 |  Lotto | 3.2c, Three+ Nested Loops, E |
| 00626 |  Ecosystem | 3.2c, Three+ Nested Loops, E |
| 00703 |  Triple Ties: The Organizer... | 3.2c, Three+ Nested Loops, E |
| 00735 |  Dart-a-Mania | 3.2c, Three+ Nested Loops, E |
| 10102 |  The path in the colored fi... | 3.2c, Three+ Nested Loops, E |
| 10662 |  The Wedding | 3.2c, Three+ Nested Loops, E |
| 11059 |  Maximum Product | 3.2c, Three+ Nested Loops, E |
| 12498 |  Ant's Shopping Mall | 3.2c, Three+ Nested Loops, E |
| 12515 |  Movie Police | 3.2c, Three+ Nested Loops, E |
| 12801 |  Grandpa Pepe's Pizza | 3.2c, Three+ Nested Loops, E |
| 12844 |  Outwitting the Weighing Ma... | 3.2c, Three+ Nested Loops, E |
| cinemaseating |  cinemaseating | 3.2c, Three+ Nested Loops, E |
| cudoviste |  cudoviste | 3.2c, Three+ Nested Loops, E |
| mathhomework |  mathhomework | 3.2c, Three+ Nested Loops, E |
| npuzzle |  npuzzle | 3.2c, Three+ Nested Loops, E |
| patuljci |  patuljci | 3.2c, Three+ Nested Loops, E |
| radir |  radir | 3.2c, Three+ Nested Loops, E |
| safehouses |  safehouses | 3.2c, Three+ Nested Loops, E |
| set |  set | 3.2c, Three+ Nested Loops, E |
| triangledrama |  triangledrama | 3.2c, Three+ Nested Loops, E |
| 00679 |  Dropping Balls | 3.3a, Binary Search |
| 00957 |  Popes | 3.3a, Binary Search |

























| Both OJ | Problem Title | CP4 |
|--------------------|---|-----------------------------|
| 10057 |  A mid-summer night's dream... | 3.3a, Binary Search |
| 10077 |  The Stern-Brocot Number Sy... | 3.3a, Binary Search |
| 10474 |  Where is the Marble? | 3.3a, Binary Search |
| 10567 |  Helping Fill Bates | 3.3a, Binary Search |
| 10611 |  The Playboy Chimp | 3.3a, Binary Search |
| 10706 |  Number Sequence | 3.3a, Binary Search |
| 10742 |  The New Rule in Euphomia | 3.3a, Binary Search |
| 11057 |  Exact Sum | 3.3a, Binary Search |
| 11621 |  Small Factors | 3.3a, Binary Search |
| 11876 |  N + NOD (N). | 3.3a, Binary Search |
| 12192 |  Grapevine | 3.3a, Binary Search |
| 12965 |  Angry Bids | 3.3a, Binary Search |
| firefly |  firefly | 3.3a, Binary Search |
| outofsorts |  outofsorts | 3.3a, Binary Search |
| roompainting |  roompainting. | 3.3a, Binary Search |
| synchronizinglists |  synchronizinglists | 3.3a, Binary Search |
| 01753 |  Need for Speed | 3.3b, Bisection and BSTA, E |
| 10341 |  Solve It | 3.3b, Bisection and BSTA, E |
| 11413 |  Fill the Containers | 3.3b, Bisection and BSTA, E |
| 11627 |  Slalom | 3.3b, Bisection and BSTA, E |
| 11881 |  Internal Rate of Return | 3.3b, Bisection and BSTA, E |
| 11935 |  Through the Desert | 3.3b, Bisection and BSTA, E |
| 12032 |  The Monkey and the Oiled B... | 3.3b, Bisection and BSTA, E |
| 12190 |  Electric Bill | 3.3b, Bisection and BSTA, E |

























| Both OJ | Problem Title | CP4 |
|-------------------------------------|---|-----------------------------|
| 12791 |  Lap | 3.3b, Bisection and BSTA, E |
| 13142 |  Destroy the Moon to Save t... | 3.3b, Bisection and BSTA, E |
| bootstrappingnumber |  bootstrappingnumber | 3.3b, Bisection and BSTA, E |
| <i>carefulascent</i> |  carefulascent | 3.3b, Bisection and BSTA, E |
| financialplanning |  financialplanning | 3.3b, Bisection and BSTA, E |
| <i>freeweights</i> |  freeweights | 3.3b, Bisection and BSTA, E |
| hindex |  hindex | 3.3b, Bisection and BSTA, E |
| htoo |  htoo | 3.3b, Bisection and BSTA, E |
| <i>monk</i> |  monk | 3.3b, Bisection and BSTA, E |
| slalom2 |  slalom2 | 3.3b, Bisection and BSTA, E |
| smallschedule |  smallschedule | 3.3b, Bisection and BSTA, E |
| speed |  speed | 3.3b, Bisection and BSTA, E |
| <i>suspensionbridges</i> |  suspensionbridges | 3.3b, Bisection and BSTA, E |
| svada |  svada | 3.3b, Bisection and BSTA, E |
| 10763 |  Foreign Exchange | 3.4b, Involving Sorting, E |
| 10785 |  The Mad Numerologist | 3.4b, Involving Sorting, E |
| 11269 |  Setting Problems | 3.4b, Involving Sorting, E |
| 11369 |  Shopaholic | 3.4b, Involving Sorting, E |
| 11729 |  Commando War | 3.4b, Involving Sorting, E |
| 11900 |  Boiled Eggs | 3.4b, Involving Sorting, E |
| 12485 |  Perfect Choir | 3.4b, Involving Sorting, E |
| 13031 |  Geek Power Inc. | 3.4b, Involving Sorting, E |
| 13109 |  Elephants | 3.4b, Involving Sorting, E |
| acm2 |  acm2 | 3.4b, Involving Sorting, E |

























| Both OJ | Problem Title | CP4 |
|-------------------|---|----------------------------|
| akcija |  akcija | 3.4b, Involving Sorting, E |
| aprizenoonecanwin |  aprizenoonecanwin | 3.4b, Involving Sorting, E |
| fallingapart |  fallingapart | 3.4b, Involving Sorting, E |
| fridge |  fridge | 3.4b, Involving Sorting, E |
| gettowork |  gettowork | 3.4b, Involving Sorting, E |
| help |  help | 3.4b, Involving Sorting, E |
| hotsprings |  hotsprings | 3.4b, Involving Sorting, E |
| icpcteamselection |  icpcteamselection | 3.4b, Involving Sorting, E |
| minimumscalar |  minimumscalar | 3.4b, Involving Sorting, E |
| pikemaneasy |  pikemaneasy | 3.4b, Involving Sorting, E |
| planetaris |  planetaris | 3.4b, Involving Sorting, E |
| plantingtrees |  plantingtrees | 3.4b, Involving Sorting, E |
| redistribution |  redistribution | 3.4b, Involving Sorting, E |
| shopaholic |  shopaholic | 3.4b, Involving Sorting, E |
| standings |  standings | 3.4b, Involving Sorting, E |
| textmessaging |  textmessaging | 3.4b, Involving Sorting, E |
| toflur |  toflur | 3.4b, Involving Sorting, E |
| universityzoning |  universityzoning | 3.4b, Involving Sorting, E |
| woodcutting |  woodcutting | 3.4b, Involving Sorting, E |
| 01153 |  Keep the Customer Satisfie... | 3.4d, Involving PQ |
| 10954 |  Add All | 3.4d, Involving PQ |
| 12390 |  Distributing Ballot Boxes | 3.4d, Involving PQ |
| 13177 |  Orchestral scores | 3.4d, Involving PQ |
| ballotboxes |  ballotboxes | 3.4d, Involving PQ |

























| Both OJ | Problem Title | CP4 |
|-------------------------|---|---------------------------------|
| <i>canvas</i> |  <u>canvas</u> | <i>3.4d, Involving PQ</i> |
| <i>entertainmentbox</i> |  <u>entertainmentbox</u> | <i>3.4d, Involving PQ</i> |
| <i>vegetables</i> |  <u>vegetables</u> | <i>3.4d, Involving PQ</i> |
| <i>workstations</i> |  <u>workstations</u> | <i>3.4d, Involving PQ</i> |
| 00260 |  <u>Il Gioco dell'X</u> | <i>4.2a, Finding CCs</i> |
| 00280 |  <u>Vertex</u> | <i>4.2a, Finding CCs</i> |
| 00459 |  <u>Graph Connectivity</u> | <i>4.2a, Finding CCs</i> |
| 10687 |  <u>Monitoring the Amazon</u> | <i>4.2a, Finding CCs</i> |
| 11518 |  <u>Dominos 2</u> | <i>4.2a, Finding CCs</i> |
| 11749 |  <u>Poor Trade Advisor</u> | <i>4.2a, Finding CCs</i> |
| 11841 |  <u>Y-game</u> | <i>4.2a, Finding CCs</i> |
| 11902 |  <u>Dominator</u> | <i>4.2a, Finding CCs</i> |
| 11906 |  <u>Knight in a War Grid</u> | <i>4.2a, Finding CCs</i> |
| <i>cartrouble</i> |  <u>cartrouble</u> | <i>4.2a, Finding CCs</i> |
| <i>daceydice</i> |  <u>daceydice</u> | <i>4.2a, Finding CCs</i> |
| <i>dominoes2</i> |  <u>dominoes2</u> | <i>4.2a, Finding CCs</i> |
| <i>moneymatters</i> |  <u>moneymatters</u> | <i>4.2a, Finding CCs</i> |
| <i>pearwise</i> |  <u>pearwise</u> | <i>4.2a, Finding CCs</i> |
| <i>reachableroads</i> |  <u>reachableroads</u> | <i>4.2a, Finding CCs</i> |
| <i>securitybadge</i> |  <u>securitybadge</u> | <i>4.2a, Finding CCs</i> |
| <i>terraces</i> |  <u>terraces</u> | <i>4.2a, Finding CCs</i> |
| <i>wheresmyinternet</i> |  <u>wheresmyinternet</u> | <i>4.2a, Finding CCs</i> |
| 00352 |  <u>The Seasonal War</u> | <i>4.2b, Flood Fill, Easier</i> |
| 00469 |  <u>Wetlands of Florida</u> | <i>4.2b, Flood Fill, Easier</i> |























| Both OJ | Problem Title | CP4 |
|--------------------|--|--------------------------|
| 00572 |  Oil Deposits | 4.2b, Flood Fill, Easier |
| 00657 |  The die is cast | 4.2b, Flood Fill, Easier |
| 00722 |  Lakes | 4.2b, Flood Fill, Easier |
| 00871 |  Counting Cells in a Blob | 4.2b, Flood Fill, Easier |
| 10336 |  Rank the Languages | 4.2b, Flood Fill, Easier |
| 11244 |  Counting Stars | 4.2b, Flood Fill, Easier |
| 11470 |  Square Sums | 4.2b, Flood Fill, Easier |
| 11561 |  Getting Gold | 4.2b, Flood Fill, Easier |
| 11953 |  Battleships | 4.2b, Flood Fill, Easier |
| amoebas |  amoebas | 4.2b, Flood Fill, Easier |
| countingstars |  countingstars | 4.2b, Flood Fill, Easier |
| floodit |  floodit | 4.2b, Flood Fill, Easier |
| fontan |  fontan | 4.2b, Flood Fill, Easier |
| gold |  gold | 4.2b, Flood Fill, Easier |
| 00124 |  Following Orders | 4.2d, Topological Sort |
| 00200 |  Rare Order | 4.2d, Topological Sort |
| 00872 |  Ordering | 4.2d, Topological Sort |
| 10305 |  Ordering Tasks | 4.2d, Topological Sort |
| 11060 |  Beverages | 4.2d, Topological Sort |
| 11686 |  Pick up sticks | 4.2d, Topological Sort |
| brexit |  brexit | 4.2d, Topological Sort |
| brexitnegotiations |  brexitnegotiations | 4.2d, Topological Sort |
| builddeps |  builddeps | 4.2d, Topological Sort |
| collapse |  collapse | 4.2d, Topological Sort |

| Both OJ | Problem Title | CP4 |
|-------------------|--|------------------------------|
| conservation |  conservation | 4.2d, Topological Sort |
| curveknights |  curveknights | 4.2d, Topological Sort |
| digicomp2 |  digicomp2 | 4.2d, Topological Sort |
| grapevine |  grapevine | 4.2d, Topological Sort |
| managingpackaging |  managingpackaging | 4.2d, Topological Sort |
| pickupsticks |  pickupsticks | 4.2d, Topological Sort |
| 00840 |  Deadlock Detection | 4.2e, Graph Properties Check |
| 10004 |  Bicoloring | 4.2e, Graph Properties Check |
| 10116 |  Robot Motion | 4.2e, Graph Properties Check |
| 10505 |  Montesco vs Capuleto | 4.2e, Graph Properties Check |
| 10510 |  Cactus | 4.2e, Graph Properties Check |
| 11080 |  Place the Guards | 4.2e, Graph Properties Check |
| 11396 |  Claw Decomposition | 4.2e, Graph Properties Check |
| amanda |  amanda | 4.2e, Graph Properties Check |
| ballsandneedles |  ballsandneedles | 4.2e, Graph Properties Check |
| breakingbad |  breakingbad | 4.2e, Graph Properties Check |
| hoppers |  hoppers | 4.2e, Graph Properties Check |
| molekule |  molekule | 4.2e, Graph Properties Check |
| pubs |  pubs | 4.2e, Graph Properties Check |
| runningmom |  runningmom | 4.2e, Graph Properties Check |
| torn2pieces |  torn2pieces | 4.2e, Graph Properties Check |
| 00118 |  Mutant Flatworld Explorers | 4.2h, Really Ad Hoc |
| 00168 |  Theseus and the Minotaur | 4.2h, Really Ad Hoc |
| 00173 |  Network Wars | 4.2h, Really Ad Hoc |

| Both OJ | Problem Title | CP4 |
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| 00318 |  Domino Effect | 4.2h, Really Ad Hoc |
| 00614 |  Mapping the Route | 4.2h, Really Ad Hoc |
| 00824 |  Coast Tracker | 4.2h, Really Ad Hoc |
| 10113 |  Exchange Rates | 4.2h, Really Ad Hoc |
| 10377 |  Maze Traversal | 4.2h, Really Ad Hoc |
| 11831 |  Sticker Collector Robot | 4.2h, Really Ad Hoc |
| 12376 |  As Long as I Learn, I Live | 4.2h, Really Ad Hoc |
| 12442 |  Forwarding Emails | 4.2h, Really Ad Hoc |
| 12582 |  Wedding of Sultan | 4.2h, Really Ad Hoc |
| 12648 |  Boss | 4.2h, Really Ad Hoc |
| 13015 |  Promotions | 4.2h, Really Ad Hoc |
| 13038 |  Directed Forest | 4.2h, Really Ad Hoc |
| droppingdirections |  droppingdirections | 4.2h, Really Ad Hoc |
| faultyrobot |  faultyrobot | 4.2h, Really Ad Hoc |
| promotions |  promotions | 4.2h, Really Ad Hoc |
| silueta |  silueta | 4.2h, Really Ad Hoc |
| succession |  succession | 4.2h, Really Ad Hoc |
| 00336 |  A Node Too Far | 4.4a, SSSP, BFS, Easier |
| 00388 |  Galactic Import | 4.4a, SSSP, BFS, Easier |
| 00429 |  Word Transformation | 4.4a, SSSP, BFS, Easier |
| 00627 |  The Net | 4.4a, SSSP, BFS, Easier |
| 00762 |  We Ship Cheap | 4.4a, SSSP, BFS, Easier |
| 00924 |  Spreading The News | 4.4a, SSSP, BFS, Easier |
| 01148 |  The mysterious X network | 4.4a, SSSP, BFS, Easier |

| Both OJ | Problem Title | CP4 |
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| 10009 |  All Roads Lead Where? | 4.4a, SSSP, BFS, Easier |
| 10610 |  Gopher and Hawks | 4.4a, SSSP, BFS, Easier |
| 10653 |  Bombs! NO they are Mines!! | 4.4a, SSSP, BFS, Easier |
| 10959 |  The Party, Part I | 4.4a, SSSP, BFS, Easier |
| 12160 |  Unlock the Lock | 4.4a, SSSP, BFS, Easier |
| buttonbashing |  buttonbashing. | 4.4a, SSSP, BFS, Easier |
| elevatortrouble |  elevatortrouble | 4.4a, SSSP, BFS, Easier |
| grid |  grid | 4.4a, SSSP, BFS, Easier |
| horror |  horror | 4.4a, SSSP, BFS, Easier |
| spiral |  spiral | 4.4a, SSSP, BFS, Easier |
| wettiles |  wettiles | 4.4a, SSSP, BFS, Easier |
| 00439 |  Knight Moves | 4.4c, Knight Moves |
| 00633 |  A Chess Knight | 4.4c, Knight Moves |
| 10426 |  Knights' Nightmare | 4.4c, Knight Moves |
| 10477 |  The Hybrid Knight | 4.4c, Knight Moves |
| grasshopper |  grasshopper | 4.4c, Knight Moves |
| hidingplaces |  hidingplaces | 4.4c, Knight Moves |
| knightjump |  knightjump | 4.4c, Knight Moves |
| 00929 |  Number Maze | 4.4d, SSSP, Dijkstra, Easier |
| 01112 |  Mice and Maze | 4.4d, SSSP, Dijkstra, Easier |
| 10389 |  Subway | 4.4d, SSSP, Dijkstra, Easier |
| 10986 |  Sending_email | 4.4d, SSSP, Dijkstra, Easier |
| 12878 |  Flowery Trails | 4.4d, SSSP, Dijkstra, Easier |
| 13127 |  Bank Robbery | 4.4d, SSSP, Dijkstra, Easier |

| Both OJ | Problem Title | CP4 |
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| <i>flowerytrails</i> |  flowerytrails | <i>4.4d, SSSP, Dijkstra, Easier</i> |
| <i>george</i> |  george | <i>4.4d, SSSP, Dijkstra, Easier</i> |
| <i>getshorty</i> |  getshorty | <i>4.4d, SSSP, Dijkstra, Easier</i> |
| <i>hopscotch50</i> |  hopscotch50 | <i>4.4d, SSSP, Dijkstra, Easier</i> |
| <i>shortestpath1</i> |  shortestpath1 | <i>4.4d, SSSP, Dijkstra, Easier</i> |
| <i>shortestpath2</i> |  shortestpath2 | <i>4.4d, SSSP, Dijkstra, Easier</i> |
| <i>subway2</i> |  subway2 | <i>4.4d, SSSP, Dijkstra, Easier</i> |
| <i>texasummers</i> |  texasummers | <i>4.4d, SSSP, Dijkstra, Easier</i> |
| <i>00423</i> |  MPI Maelstrom | <i>4.4f, SSSP, -ve weight</i> |
| <i>00558</i> |  Wormholes | <i>4.4f, SSSP, -ve weight</i> |
| <i>10449</i> |  Traffic | <i>4.4f, SSSP, -ve weight</i> |
| <i>10557</i> |  XYZZY | <i>4.4f, SSSP, -ve weight</i> |
| <i>11280</i> |  Flying to Fredericton | <i>4.4f, SSSP, -ve weight</i> |
| <i>12768</i> |  Inspired Procrastination | <i>4.4f, SSSP, -ve weight</i> |
| <i>crosscountry</i> |  crosscountry | <i>4.4f, SSSP, -ve weight</i> |
| <i>hauntedgraveyard</i> |  hauntedgraveyard | <i>4.4f, SSSP, -ve weight</i> |
| <i>shortestpath3</i> |  shortestpath3 | <i>4.4f, SSSP, -ve weight</i> |
| <i>xyzyy</i> |  xyzyy | <i>4.4f, SSSP, -ve weight</i> |
| <i>00298</i> |  Race Tracks | <i>8.2b, State-Space, BFS, E</i> |
| <i>00928</i> |  Eternal Truths | <i>8.2b, State-Space, BFS, E</i> |
| <i>01600</i> |  Patrol Robot | <i>8.2b, State-Space, BFS, E</i> |
| <i>10047</i> |  The Monocycle | <i>8.2b, State-Space, BFS, E</i> |
| <i>10097</i> |  The Color Game | <i>8.2b, State-Space, BFS, E</i> |
| <i>10306</i> |  e-Coins | <i>8.2b, State-Space, BFS, E</i> |

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| 10682 |  Forr | 8.2b, State-Space, BFS, E |
| 11513 |  9 Puzzle | 8.2b, State-Space, BFS, E |
| 11974 |  Switch The Lights | 8.2b, State-Space, BFS, E |
| 12135 |  Switch Bulbs | 8.2b, State-Space, BFS, E |
| ecoins |  ecoins | 8.2b, State-Space, BFS, E |
| flipfive |  flipfive | 8.2b, State-Space, BFS, E |
| hydrasheads |  hydrasheads | 8.2b, State-Space, BFS, E |
| illiteracy |  illiteracy | 8.2b, State-Space, BFS, E |
| safe |  safe | 8.2b, State-Space, BFS, E |
| 00658 |  It's not a Bug, it's a Fea... | 8.2d, State-Space, Dijkstra |
| 01048 |  Low Cost Air Travel | 8.2d, State-Space, Dijkstra |
| 01057 |  Routing | 8.2d, State-Space, Dijkstra |
| 10269 |  Adventure of Super Mario | 8.2d, State-Space, Dijkstra |
| 10923 |  Seven Seas | 8.2d, State-Space, Dijkstra |
| 11374 |  Airport Express | 8.2d, State-Space, Dijkstra |
| bigtruck |  bigtruck | 8.2d, State-Space, Dijkstra |
| bumped |  bumped | 8.2d, State-Space, Dijkstra |
| destinationunknown |  destinationunknown | 8.2d, State-Space, Dijkstra |
| kitchen |  kitchen | 8.2d, State-Space, Dijkstra |
| quantum |  quantum | 8.2d, State-Space, Dijkstra |
| rainbowroadrace |  rainbowroadrace | 8.2d, State-Space, Dijkstra |
| treasure |  treasure | 8.2d, State-Space, Dijkstra |

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