Light oj:  
id: faisalquibria2015@gmail.com  
pass: uxamy7bz

1. <http://help.topcoder.com/data-science/competing-in-algorithm-challenges/algorithm-tutorials/>

Training:  
18 Batch contest training: [https://docs.google.com/spreadsheet/ccc?key=0AgxmGhTyi1bmdGExdk9vUzVEdlVDc2ZxeHhBVXBDZ0E](https://m.facebook.com/l.php?u=https%3A%2F%2Fdocs.google.com%2Fspreadsheet%2Fccc%3Fkey%3D0AgxmGhTyi1bmdGExdk9vUzVEdlVDc2ZxeHhBVXBDZ0E&h=PAQFhDqzS&s=1)  
Algorithm List:  
[https://docs.google.com/spreadsheet/ccc?key=0ApOUKDqO5e7RdHNaU3ZlbGpaUzd3blMzQTFrV2VadUE#gid=1](https://m.facebook.com/l.php?u=https%3A%2F%2Fdocs.google.com%2Fspreadsheet%2Fccc%3Fkey%3D0ApOUKDqO5e7RdHNaU3ZlbGpaUzd3blMzQTFrV2VadUE%23gid%3D1&h=_AQEc8Zkm&s=1)  
List of [almost] all algorithms & techniques for programming contests with useful links [https://docs.google.com/file/d/1zt5Cj1ht7T9NH06hrs-aXkEedaxLYbnD2VNsjn4YGmzdZyyFC4kENN47OoEu/edit?pli=1](https://m.facebook.com/l.php?u=https%3A%2F%2Fdocs.google.com%2Ffile%2Fd%2F1zt5Cj1ht7T9NH06hrs-aXkEedaxLYbnD2VNsjn4YGmzdZyyFC4kENN47OoEu%2Fedit%3Fpli%3D1&h=MAQFOcyCi&s=1)  
  
Problem List:  
[https://docs.google.com/spreadsheet/ccc?key=0ApOUKDqO5e7RdHo0Q3puZGhfQV9XT0VDSVFLeUtQbUE#gid=0](https://m.facebook.com/l.php?u=https%3A%2F%2Fdocs.google.com%2Fspreadsheet%2Fccc%3Fkey%3D0ApOUKDqO5e7RdHo0Q3puZGhfQV9XT0VDSVFLeUtQbUE%23gid%3D0&h=xAQEOev-M&s=1)  
miscellaneous good problems from spoj : [https://docs.google.com/document/pub?id=1lYnbb3NA\_\_7KjL5RdGw2UPrHDMhFau6Q\_MfGqY30uo0](https://m.facebook.com/l.php?u=https%3A%2F%2Fdocs.google.com%2Fdocument%2Fpub%3Fid%3D1lYnbb3NA__7KjL5RdGw2UPrHDMhFau6Q_MfGqY30uo0&h=2AQEezYfc&s=1)  
  
  
Programming Books:  
1. C The Complete Reference by herverd SCHILT(pdf) [http://shafaetsplanet.com/uploads/pdf/c-the-complete-reference-4th-ed.pdf](http://lm.facebook.com/l.php?u=http%3A%2F%2Fshafaetsplanet.com%2Fuploads%2Fpdf%2Fc-the-complete-reference-4th-ed.pdf&h=1AQFk1HMf&s=1)  
2. Let us C: [http://dl.dropbox.com/u/98224021/pdfs/Let\_Us\_C\_YashwantKanetkar.pdf](http://lm.facebook.com/l.php?u=http%3A%2F%2Fdl.dropbox.com%2Fu%2F98224021%2Fpdfs%2FLet_Us_C_YashwantKanetkar.pdf&h=iAQGdxWz_&s=1)  
  
  
Specially for novice coders of 1st year:  
[www.shafaetsplanet.com/uploads/pdf/c\_tutorial.zip](http://lm.facebook.com/l.php?u=http%3A%2F%2Fwww.shafaetsplanet.com%2Fuploads%2Fpdf%2Fc_tutorial.zip&h=jAQHkM22p&s=1)(5 small pdf zipped,very helpful)  
[http://www.cprogramming.com/tutorial.html](http://lm.facebook.com/l.php?u=http%3A%2F%2Fwww.cprogramming.com%2Ftutorial.html&h=EAQGFxqdn&s=1)  
[http://www.cplusplus.com/](http://lm.facebook.com/l.php?u=http%3A%2F%2Fwww.cplusplus.com%2F&h=lAQEAW_a8&s=1)  
[http://sites.google.com/site/smilitude/প্রোগ্রামিং](http://lm.facebook.com/l.php?u=http%3A%2F%2Fsites.google.com%2Fsite%2Fsmilitude%2F%25E0%25A6%25AA%25E0%25A7%258D%25E0%25A6%25B0%25E0%25A7%258B%25E0%25A6%2597%25E0%25A7%258D%25E0%25A6%25B0%25E0%25A6%25BE%25E0%25A6%25AE%25E0%25A6%25BF%25E0%25A6%2582&h=8AQGauFGU&s=1) (Read this site for getting inspiration  )  
[http://www.somewhereinblog.net/blog/ragibhasanblog/29045851](http://lm.facebook.com/l.php?u=http%3A%2F%2Fwww.somewhereinblog.net%2Fblog%2Fragibhasanblog%2F29045851&h=PAQFhDqzS&s=1) learn sorting,written in very easy language(bangla)  
Uva easy problem list: [http://bidhanr.wordpress.com/2011/03/03/uva-easy-problem-list/](http://lm.facebook.com/l.php?u=http%3A%2F%2Fbidhanr.wordpress.com%2F2011%2F03%2F03%2Fuva-easy-problem-list%2F&h=VAQFedjjt&s=1)  
Learn about pointers and memory in C: [cslibrary.stanford.edu/102/PointersAndMemory.pdf](http://lm.facebook.com/l.php?u=http%3A%2F%2Fcslibrary.stanford.edu%2F102%2FPointersAndMemory.pdf&h=2AQEezYfc&s=1)  
[http://sites.google.com/site/smilitude/recursion\_and\_dp](http://lm.facebook.com/l.php?u=http%3A%2F%2Fsites.google.com%2Fsite%2Fsmilitude%2Frecursion_and_dp&h=zAQFm4WwY&s=1) For learning Recursion.  
  
General:  
[http://community.topcoder.com/tc?module=Static&d1=tutorials&d2=alg\_index](http://lm.facebook.com/l.php?u=http%3A%2F%2Fcommunity.topcoder.com%2Ftc%3Fmodule%3DStatic%26d1%3Dtutorials%26d2%3Dalg_index&h=rAQFTisWj&s=1)  
[http://www.cplusplus.com/](http://lm.facebook.com/l.php?u=http%3A%2F%2Fwww.cplusplus.com%2F&h=yAQEMiMkQ&s=1)  
[https://docs.google.com/spreadsheet/ccc?key=0ApOUKDqO5e7RdHNaU3ZlbGpaUzd3blMzQTFrV2VadUE#gid=1](https://m.facebook.com/l.php?u=https%3A%2F%2Fdocs.google.com%2Fspreadsheet%2Fccc%3Fkey%3D0ApOUKDqO5e7RdHNaU3ZlbGpaUzd3blMzQTFrV2VadUE%23gid%3D1&h=ZAQGqI_4s&s=1)  
[https://docs.google.com/spreadsheet/ccc?key=0All4RaX0MxrxdDJNMmE0eWlxZFZFNWtCM2ZBTXJSanc&hl=en\_US#gid=0](https://m.facebook.com/l.php?u=https%3A%2F%2Fdocs.google.com%2Fspreadsheet%2Fccc%3Fkey%3D0All4RaX0MxrxdDJNMmE0eWlxZFZFNWtCM2ZBTXJSanc%26hl%3Den_US%23gid%3D0&h=iAQGdxWz_&s=1)  
[http://www.cse.univdhaka.edu/~cse304/cms/main/view\_lecture.php](http://lm.facebook.com/l.php?u=http%3A%2F%2Fwww.cse.univdhaka.edu%2F%7Ecse304%2Fcms%2Fmain%2Fview_lecture.php&h=TAQFz-1sL&s=1)  
Stanford University's Competitive Programming Contests course [http://www.stanford.edu/class/cs97si/](http://lm.facebook.com/l.php?u=http%3A%2F%2Fwww.stanford.edu%2Fclass%2Fcs97si%2F&h=sAQGLZhwZ&s=1)  
Huge algorithm list and description [http://wcipeg.com/wiki/Special:AllPages](http://lm.facebook.com/l.php?u=http%3A%2F%2Fwcipeg.com%2Fwiki%2FSpecial%3AAllPages&h=cAQFZEzHO&s=1)  
Algorithm Tutorialshttp://eternallyconfuzzled.com/jsw\_home.aspx  
competitive programming course at Reykjavík University in Iceland: [http://algo.is/competitive-programming-course/](http://lm.facebook.com/l.php?u=http%3A%2F%2Falgo.is%2Fcompetitive-programming-course%2F&h=5AQHyucrb&s=1)  
[http://www.infoarena.ro/articole](http://lm.facebook.com/l.php?u=http%3A%2F%2Fwww.infoarena.ro%2Farticole&h=UAQHvzjvK&s=1)  
  
Graph Theory:  
[http://goo.gl/dNm37](http://lm.facebook.com/l.php?u=http%3A%2F%2Fgoo.gl%2FdNm37&h=jAQHkM22p&s=1) Graph theory for Dummies  
Heavy light decomposition [http://wcipeg.com/wiki/index.php/Heavy-light\_decomposition](http://lm.facebook.com/l.php?u=http%3A%2F%2Fwcipeg.com%2Fwiki%2Findex.php%2FHeavy-light_decomposition&h=_AQEc8Zkm&s=1)  
LCA with Heavy Light Decomposition [http://apps.topcoder.com/forums/;jsessionid=B531FF438584B56802863FD60615FF44?module=Thread&threadID=727702&start=0&mc=5#1455837](http://lm.facebook.com/l.php?u=http%3A%2F%2Fapps.topcoder.com%2Fforums%2F%3Bjsessionid%3DB531FF438584B56802863FD60615FF44%3Fmodule%3DThread%26threadID%3D727702%26start%3D0%26mc%3D5%231455837&h=AAQFaOwyC&s=1)  
mst in directed graph: [www.ce.rit.edu/~sjyeec/dmst.html](http://lm.facebook.com/l.php?u=http%3A%2F%2Fwww.ce.rit.edu%2F%7Esjyeec%2Fdmst.html&h=5AQHyucrb&s=1)  
printing euler tour: [http://www.algorithmist.com/index.php/Euler\_tour](http://lm.facebook.com/l.php?u=http%3A%2F%2Fwww.algorithmist.com%2Findex.php%2FEuler_tour&h=vAQFMMXpd&s=1)  
Eulerian Path/Circuit,Graph Median,Graph Center [http://www.graph-magics.com/algorithms.php](http://lm.facebook.com/l.php?u=http%3A%2F%2Fwww.graph-magics.com%2Falgorithms.php&h=WAQFPFMsq&s=1)  
[http://www.shafaetsplanet.com/planetcoding/?tag=গ্রাফ-থিওরি](http://lm.facebook.com/l.php?u=http%3A%2F%2Fwww.shafaetsplanet.com%2Fplanetcoding%2F%3Ftag%3D%25E0%25A6%2597%25E0%25A7%258D%25E0%25A6%25B0%25E0%25A6%25BE%25E0%25A6%25AB-%25E0%25A6%25A5%25E0%25A6%25BF%25E0%25A6%2593%25E0%25A6%25B0%25E0%25A6%25BF&h=2AQEezYfc&s=1) Graph theory for beginners.  
[http://www.ics.uci.edu/~dan/class/161/notes/8/Bicomps.html](http://lm.facebook.com/l.php?u=http%3A%2F%2Fwww.ics.uci.edu%2F%7Edan%2Fclass%2F161%2Fnotes%2F8%2FBicomps.html&h=jAQHkM22p&s=1) Algorithm to find Biconnected component.  
[https://threads-iiith.quora.com/The-Bridge-Tree-of-a-graph](https://m.facebook.com/l.php?u=https%3A%2F%2Fthreads-iiith.quora.com%2FThe-Bridge-Tree-of-a-graph&h=cAQFZEzHO&s=1) Basic concepts and algorithm to create Bridge Tree and Biconnected component.   
Mathematics/Probability:  
[http://www.codechef.com/wiki/tutorial-expectation](http://lm.facebook.com/l.php?u=http%3A%2F%2Fwww.codechef.com%2Fwiki%2Ftutorial-expectation&h=EAQGFxqdn&s=1)  
[http://community.topcoder.com/tc?module=Static&d1=tutorials&d2=probabilities](http://lm.facebook.com/l.php?u=http%3A%2F%2Fcommunity.topcoder.com%2Ftc%3Fmodule%3DStatic%26d1%3Dtutorials%26d2%3Dprobabilities&h=fAQGEa0Yc&s=1)  
[http://www.gottfriedville.net/mathprob/index.htm](http://lm.facebook.com/l.php?u=http%3A%2F%2Fwww.gottfriedville.net%2Fmathprob%2Findex.htm&h=5AQHyucrb&s=1)  
Matrix exponentiation [http://zobayer.blogspot.com/2010/11/matrix-exponentiation.html](http://lm.facebook.com/l.php?u=http%3A%2F%2Fzobayer.blogspot.com%2F2010%2F11%2Fmatrix-exponentiation.html&h=-AQGcSQqL&s=1)  
Basic modular arithmetic: [http://www.shafaetsplanet.com/planetcoding/?p=936](http://lm.facebook.com/l.php?u=http%3A%2F%2Fwww.shafaetsplanet.com%2Fplanetcoding%2F%3Fp%3D936&h=iAQGdxWz_&s=1)  
  
Data Structure:  
suffix array pdf: [www.shafaetsplanet.com/uploads/pdf/SUFF\_AR\_ENG.pdf](http://lm.facebook.com/l.php?u=http%3A%2F%2Fwww.shafaetsplanet.com%2Fuploads%2Fpdf%2FSUFF_AR_ENG.pdf&h=pAQHz8KOl&s=1)  
disjoint set: [http://www.shafaetsplanet.com/planetcoding/?p=763](http://lm.facebook.com/l.php?u=http%3A%2F%2Fwww.shafaetsplanet.com%2Fplanetcoding%2F%3Fp%3D763&h=FAQEA1pfJ&s=1)  
Ukkonen algorithm for linear time suffix tree genaretion [http://stackoverflow.com/questions/9452701/can-someone-please-explain-ukkonens-suffix-tree-algorithm-in-plain-english#9513423](http://lm.facebook.com/l.php?u=http%3A%2F%2Fstackoverflow.com%2Fquestions%2F9452701%2Fcan-someone-please-explain-ukkonens-suffix-tree-algorithm-in-plain-english%239513423&h=XAQHviQzX&s=1)  
Basic Binary Indexed Tree: [http://codeforces.com/blog/entry/619](http://lm.facebook.com/l.php?u=http%3A%2F%2Fcodeforces.com%2Fblog%2Fentry%2F619&h=bAQHjKaxT&s=1)  
Advanced data structure , video lectures (MIT) : [http://courses.csail.mit.edu/6.851/spring12/lectures/](http://lm.facebook.com/l.php?u=http%3A%2F%2Fcourses.csail.mit.edu%2F6.851%2Fspring12%2Flectures%2F&h=SAQFzuhc8&s=1)  
Treaps: [https://threads-iiith.quora.com/Treaps-One-Tree-to-Rule-em-all-Part-1](https://m.facebook.com/l.php?u=https%3A%2F%2Fthreads-iiith.quora.com%2FTreaps-One-Tree-to-Rule-em-all-Part-1&h=vAQFMMXpd&s=1)  
Dynamic Programming:  
[http://codeforces.com/blog/entry/325](http://lm.facebook.com/l.php?u=http%3A%2F%2Fcodeforces.com%2Fblog%2Fentry%2F325&h=XAQHviQzX&s=1)  
[http://acm.zju.edu.cn/forum/viewtopic.php?t=69](http://lm.facebook.com/l.php?u=http%3A%2F%2Facm.zju.edu.cn%2Fforum%2Fviewtopic.php%3Ft%3D69&h=CAQHf4d5u&s=1)  
[http://zobayer.blogspot.com/2011/03/dynamic-programming-uva.html](http://lm.facebook.com/l.php?u=http%3A%2F%2Fzobayer.blogspot.com%2F2011%2F03%2Fdynamic-programming-uva.html&h=0AQGOslJc&s=1)  
[http://ahmed-aly.com/UVaAndSPOJ/Category.jsp?CategoryID=33](http://lm.facebook.com/l.php?u=http%3A%2F%2Fahmed-aly.com%2FUVaAndSPOJ%2FCategory.jsp%3FCategoryID%3D33&h=bAQHjKaxT&s=1)  
[http://www.codeforces.com/problemset/tags/dp](http://lm.facebook.com/l.php?u=http%3A%2F%2Fwww.codeforces.com%2Fproblemset%2Ftags%2Fdp&h=MAQFOcyCi&s=1)  
[http://problemclassifier.appspot.com/index.jsp?search=dp](http://lm.facebook.com/l.php?u=http%3A%2F%2Fproblemclassifier.appspot.com%2Findex.jsp%3Fsearch%3Ddp&h=rAQFTisWj&s=1)  
[http://acm.timus.ru/problemset.aspx?space=1&tag=dynprog&sort=difficulty](http://lm.facebook.com/l.php?u=http%3A%2F%2Facm.timus.ru%2Fproblemset.aspx%3Fspace%3D1%26tag%3Ddynprog%26sort%3Ddifficulty&h=zAQFm4WwY&s=1)  
[http://community.topcoder.com/tc?module=ProblemArchive&sr&er&sc&sd&class&cat=Dynamic+Programming&div1l&div2l&mind1s&mind2s&maxd1s&maxd2s&wr](http://lm.facebook.com/l.php?u=http%3A%2F%2Fcommunity.topcoder.com%2Ftc%3Fmodule%3DProblemArchive%26sr%26er%26sc%26sd%26class%26cat%3DDynamic%2BProgramming%26div1l%26div2l%26mind1s%26mind2s%26maxd1s%26maxd2s%26wr&h=lAQEAW_a8&s=1)  
A list of DP problems (topcoder only) [https://docs.google.com/spreadsheet/ccc?key=0AtuZuirBMdVlcDFMRTZQTFVOcFpqRnU2LW5RZHZrR1E&hl=en#gid=0](https://m.facebook.com/l.php?u=https%3A%2F%2Fdocs.google.com%2Fspreadsheet%2Fccc%3Fkey%3D0AtuZuirBMdVlcDFMRTZQTFVOcFpqRnU2LW5RZHZrR1E%26hl%3Den%23gid%3D0&h=6AQE1YNoh&s=1)  
  
Greedy:  
Topcoder tutorials on Greedy Algorithms "Greedy is Good" [http://help.topcoder.com/data-science/competing-in-algorithm-challenges/algorithm-tutorials/greedy-is-good/](http://lm.facebook.com/l.php?u=http%3A%2F%2Fhelp.topcoder.com%2Fdata-science%2Fcompeting-in-algorithm-challenges%2Falgorithm-tutorials%2Fgreedy-is-good%2F&h=oAQGb-oCJ&s=1)  
  
Geometry:  
ken university computational geo course [www.personal.kent.edu/~rmuhamma/Compgeometry/compgeom.html](http://lm.facebook.com/l.php?u=http%3A%2F%2Fwww.personal.kent.edu%2F%7Ermuhamma%2FCompgeometry%2Fcompgeom.html&h=MAQFOcyCi&s=1)  
Geo problem list [https://docs.google.com/spreadsheet/ccc?key=0Avbf9q-07MMHdEI4RWhmeXRXQXJNQ09WVWl2TVptalE#gid=0](https://m.facebook.com/l.php?u=https%3A%2F%2Fdocs.google.com%2Fspreadsheet%2Fccc%3Fkey%3D0Avbf9q-07MMHdEI4RWhmeXRXQXJNQ09WVWl2TVptalE%23gid%3D0&h=_AQEc8Zkm&s=1)  
3. [http://geomalgorithms.com/algorithms.html](http://lm.facebook.com/l.php?u=http%3A%2F%2Fgeomalgorithms.com%2Falgorithms.html&h=yAQEMiMkQ&s=1)  
  
Game Theory:  
[http://dl.dropbox.com/u/21780751/combinatorial%20game%20theory.pdf](http://lm.facebook.com/l.php?u=http%3A%2F%2Fdl.dropbox.com%2Fu%2F21780751%2Fcombinatorial%2520game%2520theory.pdf&h=9AQF7yHFY&s=1)  
[http://community.topcoder.com/tc?module=Static&d1=tutorials&d2=algorithmGames](http://lm.facebook.com/l.php?u=http%3A%2F%2Fcommunity.topcoder.com%2Ftc%3Fmodule%3DStatic%26d1%3Dtutorials%26d2%3DalgorithmGames&h=HAQEIM922&s=1)  
[http://sps.nus.edu.sg/~limchuwe/cgt/](http://lm.facebook.com/l.php?u=http%3A%2F%2Fsps.nus.edu.sg%2F%7Elimchuwe%2Fcgt%2F&h=cAQFZEzHO&s=1)  
Thomas S. Ferguson's Homepage ( Some very useful gametheory papers can be found here ) : [http://www.math.ucla.edu/~tom/](http://lm.facebook.com/l.php?u=http%3A%2F%2Fwww.math.ucla.edu%2F%7Etom%2F&h=-AQGcSQqL&s=1)  
Nim game Example: [http://www.suhendry.net/blog/?p=1612](http://lm.facebook.com/l.php?u=http%3A%2F%2Fwww.suhendry.net%2Fblog%2F%3Fp%3D1612&h=OAQE5kH89&s=1)  
Hashing:  
Polynomial Hashing: [www.mii.lt/olympiads\_in\_informatics/pdf/INFOL119.pdf](http://lm.facebook.com/l.php?u=http%3A%2F%2Fwww.mii.lt%2Folympiads_in_informatics%2Fpdf%2FINFOL119.pdf&h=oAQGb-oCJ&s=1) .  
  
Others:  
UVA problem archive till nov 2009 Offline made by ashis sir(It is a chm file,linux users install ‘xchm’ or any other chm viewer from software center, you can also use ‘apt-get install xchm’) [www.shafaetsplanet.com/uploads/pdf/UVa\_Problemset[LastUpdated15Nov09].chm](http://lm.facebook.com/l.php?u=http%3A%2F%2Fwww.shafaetsplanet.com%2Fuploads%2Fpdf%2FUVa_Problemset%5BLastUpdated15Nov09%5D.chm&h=0AQGOslJc&s=1)   
Collection of many useful links and pdf books [http://www.shafaetsplanet.com/planetcoding/?p=879](http://lm.facebook.com/l.php?u=http%3A%2F%2Fwww.shafaetsplanet.com%2Fplanetcoding%2F%3Fp%3D879&h=pAQHz8KOl&s=1)  
Contest list: [http://clist.by/](http://lm.facebook.com/l.php?u=http%3A%2F%2Fclist.by%2F&h=eAQG_2ir4&s=1)

# 18 Batch Contest Training - Google Sheets

Uva problem explanation:

1.https://fr0ddy.github.io/cs/online-judge-hints.html#/

10.07 ->45

11.07 ->30

12.07->123

13.07->20+34+20

14.07->24

15.07->28

16.07->30+30+23

17.07->16+59

18.07->20+56+20+5.

19.07->32

22.07->150

23.07->24+60+152

24.07->100+100+50+16+50+20+30;