	Project 100 Syllabus					
Level zero			Level one			
STL			Number Theory/Math			
	string			Extended Euclid		
	vector			Euler Phi and inverse phi		
	pair			Factorizing n!		
	stack			Basic combinatorics, Probability and Game theory		
	queue					
	priority_queue					
	sort		Graph			
	reverse			Maximum Flow (Ford Fulkerson)		
	next_permutation			Maximum Flow (Dinic)		
	set			Maximum Bipartite Matching and Variations		
	map			Maximum Independent Set		
	iterator			Minimum Cost Maximum Flow		
				Vertex Cover		
Number Theory/Math				Weighted Bipartite Matching		
	Prime Generation, Sieve and How to Optimize			Graph Coloring		
	Bitwise Sieve			Stable Marriage Problem		
	Modular Arithmatic (+ - *)					
	Modular Inverse (/)		Greedy			
	Big Mod (a^b % p)			Task Scheduling		
	Prime Factorization			Maximum Sum 1D in O(n)		
	Number of Divisor			Maximum Sum 2D in O(n^3)		
	Sum of Divisor			Maximum Rectangle O(n^2)		
Graph			Dynamic Programming			
	Graph Representations (Adjacency Matrix)			Matrix Chain Multiplication		
	Graph Representations (Adjacency List using vector)			Bitmask DP (Traveling salesman problem)		
	Breadth First Search BFS			Modular DP(DP with MOD value as a state)		
	Bicoloring			Tree Dp		
	Depth First Search DFS					
	Topological Sorting		Data Structure			
	Articulation Point			Trie		
	Bridge			Union Find		
	Strongly Connected Components SCC			BST and variations		
	Dijkstra and variations			Heap		
	Bellman Ford and variations			Binary Indexed Tree and Applications		
	Floyd Warshall and variations			Segment tree		
	Kth Shortest Path			Least Common Ancestor		
	Minimum Spanning Tree (Prims)			Range Minimum Query		
	Minimum Spanning Tree (Kruskal)			Splay Tree		
	2-SAT			Treap		
				Centroid Decomposition		
				Dominator Tree		
Dynamic Programming						
	Longest Common Subsequence LCS		Total Solve Problems	500+ in UVa, Codeforces, LightOJ, Topcoder, SPOJ and USACO		
	Coin change		After Complete	Participate on Codeforces, Topcoder regular contest (Div 1) it should be Div 1 ;)		
	Edit Distance					
	Tree DP					
	LIS/LDS in nlogn					
Total Solve Probl	200+ in UVa, Codeforces, LightOJ, Topcoder, SPOJ and USACO					
After Complete	Participate on Codeforces, Topcoder regular contest (Div 2)					
Level two			Level three			
Game Theory			Number Theory/Math			
	Nim			Shanks Algorithm		
	Grundy Number and Dp Formulation			Dilworth's theorem*		
	Alpha Beta Pruning Minimax*			Burnside Lemma (http://petr-mitrichev.blogspot.com/2008/11/burnsides-lemma.html)**		
	Blue Red Hackenbush			Finding Real roots of an n degree Equation		
	Minimum Weighted Bipartite Matching/Kuhn-Munacres/Hungarian/Chinese Postman			Wilson's Theorem*		
	Green Hackenbush			Lucas Theorem*		
String Algorithms				Gauss Elimination		
	Suffix Tree, Automata					
	KMP Matcher					
	Suffix Array Construction*		Graph			
	Longest Common Substring			Minimum Spanning Tree (For Directed Graphs)		
	Aho Chorasic Algorithm			Euler Path (Construction and optimization)		
	Manacher's Algo			Gomory-Hu Tree		
	Hashing			Edge Cover		
Miscellaneous				Largest Clique		
	Meet In the Middle Approach			IDA* Search Problem, 15 Puzzle		
	Konigs Theorem			Group Theory		
	Matrix Tree Theorem*			Hamiltonian Cycle		
	Joseph Problem (Using queue n^2)			Min Weight Cycles in Graph		
	Joseph Problem (Using recursion n)			Stoer Wagner (Finding the minimum cut of a graph)		
	Managing Biginteger			Planar Graph Detection		
	Permutations and Combinations			Havel-Hakimi Algorithm (Construct graph given degree of nodes)		

	Tower of Hanoi, Variations			Maximum Matching(Blossom Shrinking)		
	N Queens Problem			Max cost-max flow(min cost flow for negative cycle)		
	Hashing					
	Finding Nth Permutation		Geometry			
	Huffman Coding			Convex Hull 3D		
	Traveling Salesman Problem (Backtracking with pruning)			Line Sweeping/Angle Sweep		
	Finding Determinant of a Matrix			Fitting a Rectangle inside Another		
	Finding kth number from a sequence of unsorted numbers in log(n)			Polygon Intersection		
	Transforming Hexagonal grid, Triangular grid to 3d coordinate system			Area of a 3d Polygon		
	Matrix Multiplication			Polygon Clipping*		
	Solving Linear Recurrence with Matrix Exponentiation			Rotating Calipers*		
	Heavy-Light Decomposition			Triangulation		
Advance DP	All Light OJ Advance DP Problems			Optimal BST		
				KD tree		
Geometry				Link-cut tree		
	Convex Hull			Interval Tree		
				Quad tree		
	Point inside Convex Polygon (log(n))			Complete USACO training system		
	Picks Theorem, Number of Lattice Points inside a polygon		Total Solve Problems	1000+ in UVa, Codeforces, LightOJ, Topcoder, SPOJ and USACO		
	Binary Search					
	Ternary Search					
	Segment Segment Intersection		Extra	Segment Trees, with lazy propagation		
	Area Of A Concave Polygon			Heavy Light Decomposition		
	Point Inside A Polygon (Convex and Concave)					
	Minimum Circle Covering all Points			FFT		
	Union of rectangle (How to cluster, how to make it in nlogn, bently)					
	Closest Pair			Tree Decomposition		
				Persistent Segment Tree		
Total Solve Probl	800+ in UVa, Codeforces, LightOJ, Topcoder, SPOJ and USACO			Palindromic Tree		
				DP Optimizations		
				SOS DP		
				MO's, MO's with update		
				DSU on Tree		