

Role Promotion Instructions

Ravi Hammond

Purpose Of The Roles

The primary method of tracking your progress throughout RSP will be through the use of roles. There are a lot of tasks for you to complete this summer which can be both demotivating and exhausting, but the work can be made to feel easier when it's broken into four distinct stages. The four roles of the discord server represent these four stages, and they also function as your milestones.

The ultimate goal of this study program is to be awarded the final role *Advanced*. All students who reach this step will have a great chance of passing internship interviews. In order to receive a role promotion you must first complete the required tasks, and then send a message to your mentor to organise a zoom call. In the zoom call you will demonstrate evidence of your completed tasks, and we will quiz you on related topics.

Warning - **do not** ask for a role promotion if you have rushed the tasks and don't properly understand all the required concepts. If we're suspicious that you don't truly understand the material, we will probe you more, will find out, and won't be happy. Make sure you understand **all** the topics **completely**.

Beginner

This is the role where all students start in RSP. At this stage, you are reading Cracking The Coding Interview, reading The Algorithm Design Manual, and filling in the gaps with YouTube and Google.

This role does not require any tasks to get

Novice

This role is for students who have completely finished studying the theory. Congratulations! At this stage you will start doing daily LeetCode, and weekly mock interviews. From this point onwards I expect you to complete ten coding problems a week, and two mock interviews a week. For LeetCode problems and mock interviews to be counted in this program, they must be recorded in your [spreadsheet](#).

Required tasks to be awarded this role

- Read all the introductory chapters of CTCI.
- Thoroughly read the first ten chapters of ADM (Don't do the exercises).
- Implement in either C++ / Java / Python:
 - A Linked List.
 - A Binary Tree.
 - A Graph using an Adjacency List.
 - Depth First Search.
 - Breadth First Search.
- Understand how these work and their big-O times:
 - Tries.
 - Vector amortised time.
 - Bit Manipulation.
 - Singleton Design Pattern.
 - Factory Design Pattern.
 - Union-Find.
 - Quick Select algorithm.
 - Balanced Binary Search Tree (AVL, Red Black Trees).
 - Minimum Spanning Tree algorithm.
 - Dijkstra's Shortest Path algorithm.
- Read all interview question introductions from CTCI.
- Completed a draft of your resume.

Intermediate

This role is for the students who have made a serious step towards their internship interviews! You have done heaps of LeetCode, a handful of mock interviews, written your resume, filled your linkedin, have finished a personal project or have got some programming work experience.

Required tasks to be awarded this role

- Completed and understand the solutions for the following LeetCode problems:
 - 15 Easy problems
 - 25 Medium problems
 - 10 Hard problems
- 10 Mock interviews as the interviewee.
- 10 Mock interviews as the interviewer.
- Filled in your behavioural question table (please use dot points).
- One personal project / work experience
- All project code uploaded to github
- Finished your resume.
- Filled in your LinkedIn completely:
 - Display picture of your face.
 - Cover picture.
 - About section filled out.
 - Photo of yourself programming in the featured section.
 - Work experience with proper descriptions.
 - All volunteer experience listed.
 - List all of your skills and endorsements.
 - Ask someone with experience for a recommendation.
 - List all of your projects with thorough descriptions.

Advanced

This role is for students who have finished absolutely everything in the study program. Students who receive this role will be rewarded with referrals from real full time Software Engineers working for the top FAAMG Companies.

Required tasks to be awarded this role

- Completed and understand the solutions for the following LeetCode problems:
 - 30 Easy problems total
 - 50 Medium problems total
 - 20 Hard problem total
- 20 Mock interviews total as the interviewee.
- 20 Mock interviews total as the interviewer.
- Two personal projects / work experience total
 - Could be 1 project and 1 work experience.
 - Could be 2 projects.
 - Could be 2 work experiences.
- All project code uploaded to github
- Updated your resume with this new information.
- Updated your LinkedIn with this new information.
- Created a portfolio website.
- Written a general FAAMG cover letter.
- Has competed in at least one coding competition.
- Shown proof of at least 3 counts of community involvement.