

## **Dolat Capital Interview Experience - Akash Upadhyay**

### **Role - Quant Developer**

#### **Round I: Online Assessment - Duration : 77 mins**

This assessment was conducted in college on 13th August 2025. Each question needs to be attempted in order to get shortlisted for further rounds.

It typically had 5 sections:

- C++ MCQs (15) -> shared pointers, friend functions, code snippets, etc
- Python MCQs (15) -> code snippets mostly
- MCQs on Quantitative Aptitude (10) -> general questions such as speed of two moving trains towards each other
- Python Coding - Remove outliers from the given array (outliers lie in the range of mean-std to mean+std)
- C++ Coding - Implement a Car booking system -

1 car = 100 rupees /hr,

2 cars = 150 rupees/hr ,

3 cars = 200 rupees/hr

More than 3 cars -> add 20 rupees/hour extra car

An input would be given of a list of owners, The time of entry and the time of exit:

Ex: A 10 12, B 8 13, A 5 11, C 9 10 and so on.

You have to return the total prices each owner has to pay at the end

(can be implemented using sweep line algorithm)

#### **Round II: Technical Interview - Duration : 50-60 mins (for me)**

This round took place at the office premises on 18th August 2025. There were two interviewers for each panel.

The interview was primarily divided into three parts : Machine Learning, Quant/Stats and C++

- The Interview started with my Introduction
- Questions on Machine Learning:
  - Linear regression, its assumptions
  - Confusion matrix, Formula for Accuracy
  - Asked me about situations when I came across reducing latency of ML pipelines (PCA and other techniques) What is dimensionality?
  - Data Preprocessing and what are the steps, some questions on Pandas
  - Why to replace median in missing data
  - Steps to preprocess Big Data and how is it done
- I was then asked to derive a formula to calculate the rolling mean of a fixed sized sliding window in the time complexity of  $O(1)$ ; once I derived it, I was then asked to then modify it to calculate rolling standard deviation; The interviewer provided me with hints wherever possible!
- The focus then switched to C++, which started with basics of OOPs and then deep diving into how memory allocations works:
  - OOPs and its principles
  - Virtual Functions and Pure Virtual Functions , Friend Function
  - Access modifiers
  - Can constructors be virtual, Can destructors be virtual, why and why not?
  - Can constructors be static, const, final (basically permutation combination of all keywords with functions)
  - What happens if you don't call virtual destructor
  - What are static functions
  - Diamond problem and how is it solved in C++
  - How is memory allocated, questions on stacks, heaps, what are memory leaks, why do they happen, how do we prevent them
  - Static functions and how are memory allocated in static functions
  - Internally how is it working
  - Where is role of trees in memory allocation
  - What are pointers, what are references? What's the difference between pointers and References

- Can pointers be null, can references be null? Why and why not
  - Const pointers, scenarios on constant pointers, pointer arithmetics
  - Two different code snippets were given to me, one was about const keyword missing
  - One was a loop involving declaration of static variable followed by post-decrement operation (i'll write the snippet below)
- ```

int func () {
    static int x = 7;
    return x - -;
}

int main() {
    for(func(); fun(); fun())
        cout << func();
}

```
- Write a code to traverse an array using just a pointer in C++.
  - Write a code to reverse a linked list (constraint - you cannot create a new linkedlist)

Overall the interviewers were trying to find the depth of my knowledge and conceptual clarity, they were cross questioning almost every single thing I was answering to check if I truly have the knowledge of how things work under the hood.

### Round III: HR Round - Duration : 10-15 mins

Basic HR questions and were generic for all the candidates. Whoever sat for technical interview had to go through HR round

- The Interview started with my Introduction
- I was asked on the feedback of the technical interview
- Members in my family, what do they do
- Where do I stay
- Am I physically fit, Does my parents have any health issues
- Is this my first interview (Why or Why not)
- Do I know anything about Dolat Capital ?
- Why am I not pursuing masters or higher studies?