**- TAKE GOOD NOTES, BE EXTREMELY ATTENTIVE, FIGURE OUT EVERYTHING THE PALANTIR VIDEOS ARE SAYING, AND MORE!!!!!!! Expiration time stamp, how does it work, figure out the software engineering principles, Agile, MVC, OOP, RESTful API.**

**- Be focused on EVERY VIDEO FRAME, every phrase, every example, every visual, every presentation point, slide, read between the lines, and try to piece together what the software components are, how does it all work together. Great opportunity to touch on software principles and what happens behind the scenes as well.**

**-JOKE: Delay the interview: Well, my mom happens to have a lower interest rate than a loan, she bought me a ticket**

**Get a good sense of the GUI, the structure, the layout of the products Palantir provides, so that you can see what a good product looks like.**

**The Decomposition and System Design technical interview rounds will most likely be related to Foundry and Gotham products. How they are implemented at the code level, behind the scenes, AGILE, API, call the GUI, etc. How would you add a new feature to Gotham? To Foundry? What would you add?**

Anti-money laundering use cases, also cybersecurity workflows, also NHS contacted Palantir to build ICU equipment distribution models, build workflows in pharma clinical trials domain,

Foundry is workhouse that integrates data analysis with business operations. Is a product that allows other businesses to seamlessly incorporate up-to-date data analytics at a rapid pace, low-code and no-code needed. So, a business does not need to hire a bunch of software engineers, as Foundry comes complete with the package. Foundry comes with Machine Learning toolkit. 200+ data connectors of data pools and platforms. Synchronization of data. Supports external platform import, like from SageMaker or DataIQ. Foundry is highly customizable.

User level

Ontology level (collection of all objects that represent an entity in an organization, semantic layer on top of Data + Models level, is more human-understandable)

Data + Models level

Foundry is real-time. Optimized and prioritized distribution of COVID-19 equipment based on real-time data and requests and needs. Foundry centralizes everything and synchronizes things, more precise than Excel and email, which is not integrated and behind schedule.

**Hospital trust makes queries (requests) for equipment. Foundry handles all three. Data is uploaded into Foundry via REST API, file uploads, web form submissions, databases. Sometimes there is less equipment than the numbers requested by the hospital trusts around the United Kingdom, so tough decisions have to be made. Hospital trusts with higher priority, statistics-wise, are served first, while the rest get alternative equipment if they are available. (When making the workflow application for NHS health supplies, first whiteboard out the project concept, a good point that an engineer makes is ”what if there is a lack of N-95 masks?” Well then, next best thing, send alternatives, KN-95 masks, if they are deemed as a suitable alternative, but not the best. Just be a good engineer, plan out the process, step-by-step, think it through in a methodical way, AGILE development, make the software good in design, easy to use, and an effective solution to the problem (good features, not just a pretty but useless application)). Once all of the decisions are made based on the data analytics offered by Foundry, decision to allocated the available equipment is sent via .csv (comma-separated-values) to the equipment distributors, entire process is streamlined. Can make better, more up-to-date, more prudent decisions with Foundry.**

***Do you like our products? What do you know about Foundry? …… \*explain what I know about Foundry and Gotham, I am impressed by the products, very streamlined and integrated products/operating systems\*.* What do you know about graphs? *\*Chuckle. That’s an interesting shift. I know about basic search and traversal algorithms from introductory data structures and algorithms DFS and BFS, I also know (planning to learn about) depth-limited depth-first-searches, does what a BFS does, but with less memory, strongly connected component (bridge-finding) algos (Tarjan’s), Eulerian Tour, bijected graph, connected components (islands), which are different from strongly connected components, etc., timestamps, direct descendants/ancestors, or distant relatives, etc.***

**The concept behind Foundry is remarkable, near-real-time (of course, with some latency), preventing clog-ups in the communication/human data transfer process. Improves overall efficiency drastically, which is invaluable for time-sensitive processes.**

*Copy into clipboard stays in it for a while! Random side note*

Data lineage, an app in Foundry, provides a no-code, GUI interface to view how data sets are derived from one another, and which objects in the ontology use them.

**Foundry also has an app called “Code Repositories” which is an in-built, full-fledged rich code editor, supports Python, Java, SQL, to writes scripts that create derived data sets. Backed by a Git-based engine, also a GitHub-like UI, that supports pull requests, commits with comments and messages, and changes. Foundry is very in-house, self-sufficient operating system and environment which provides numerous functionalities. The hub of the future.**

Can create datasets in Foundry using Workshop, some data sets are direct data sets pulled from Azure or AWS storage, others are built using Python or SQL transformations, others are built using no-code Foundry tools.

The history of the data sets and build records are kept, logging everything so there is no ambiguity of the data. Always a track record. Also serves as an audit of decision-making, so there is accountability. Important in large organizations.

Also, only the relevant information/data is visible to particular users of the application. Must handle clearance considerations, as company hierarchy and data-sensitivity is a factor. Foundry supports all of that.

**Gotham (and probably Foundry as well) have secure, access-controlled environment. Gotham is the first child of Palantir. Gotham is designed to accelerate the military/intelligence process via centralization of resources, but at the same time, keep in line the chain of command, by only granting access to resources and abilities on a clearance basis. That is where security comes into play, must be extremely foolproof to nefarious hackers, etc.**

Foundry seems to have a clean, Mac-like GUI, making it attractive to the clients, which are businesses that desire an integrated solution.

**Building applications in Foundry in a matter of days using Workshop. Everything is rapid pace, COVID emergences, counter-terrorism ordeals, everything must happen quickly in Palantir, gather data, operationalize it QUICKLY. Highly motivated, time-driven engineers with a passion to improve the community. Has a futuristic feeling, but it is the present!**

**PALANTIR:**

**A lot of people on the call, can drop the line “wow, the whole party’s here” or “I’m outnumbered”**

**Crack a couple of quips, one-liners, quick jokes, that don’t waste time.**

**What do you want your impact to be? A big one. What do you want your legacy to be: A long one.**

**Decomposition problem, restaurant: if the food’s really good, there’ll be a long line waiting, that would require a queue**

Maybe the restaurant is a dining hall, instant all-u-can-eat serve-style, or a fine dining restaurant with seat reservations, waiters and waitresses taking orders, fast food, drive-thru.

For fine dining, the reservations are based on a queue. There are two separate queues. At a very fancy place, I would imagine there are VIP guest lists, they can form their separate queue (they pay more). When customer orders online or through telephone, customer denotes the number of guests (head count of the night out). Software should have system in place to handle number of people, i.e. a couple should not sit at a large round table, and a large party should not be crammed in a small table and have to pull up extra chairs. Software should indicate what time there will be an, ex. Table of 6, available, maybe at 8:30 pm. Or pay a premium to cut in front of other people, some of that premium is paid to the guests who were booted out.

Fine diner should have a recurring guest system. If first time ordering, put customer in the returning guests pool. Have waiters with tablets that state person’s name and order, and what table the order is at for quick and easy process, cutting down on human errors.

Have a system that sees which menu items are the most lucrative for the company. Analyze them down to the ingredients used, the overall demographic of customers, returning customers (edge cases where a frequent customer likes an item, even though others do not like it, restaurant should still keep that item in stock, kind of like a Midland Scientific-esque optimizer to make money by storing popular items), overall society food trends, seasonal changes in cuisine*, name of the menu item\*\*\*\*\*\*\** sounds like a big one. After all, for the first time ordering, I have no idea what the dish will look like, excluding the possibly unrealistic portrayal of the food item on the ordering menu.

Have a AI predicting model for what ingredients restaurant should order to make good money. Previous spans of poor revenue have low weight, previous spans of high revenue have high weight. Of course, this look-into-the-past paradigm misses innovation and looking into the future.

**BUT HOW DO I IMPLEMENT ALL OF THIS? MODEL VIEWER CONTROLLER (MVC)? AMAZON WEB SERVICES? WHERE DOES ALL OF THIS DATA GET BACKED UP INTO? PRIVATE INFORMATION? HOW IS THE SECURITY IMPLEMENTED? WHAT IF ALL OF THIS DATA GETS LOST?**

For a school dining hall or a more healthy-themed restaurant, there is a screen showing number of calories. For a huge dining system like on a naval ship, there might be calculations to order how many pounds of meat, and a scale and a digital system to show how many pounds of meat are left, to make sure the serving sizes are pretty uniform and are distributed tightly around the desired serving size, with the total pounds of meat divided between number of sailors.

For quick service, there should be mobile tablet ordering software, so that chefs in the back can start immediately making the order without the precious time needed for the waiter to walk back into the kitchen to notify the chefs, customers can get their food faster, and overall more customers can be served in a day, more profit.

**More serious, sharp, hawk-eyed in the technical interview, was more laid back, extremely enthusiastic and attentive in the phone call behavioral. Around my dad I’m more of a bro. Around my sister and my mom, I’m a mama’s boy, and it would mean a great deal to my mom if I do well in the interview.**

Palantir notes: founded 2003 **MAKES OPERATING SYSTEMS**, original clients were the government intelligence agencies, now branching off into other sectors. Software as a service in contrast with consulting.

-connect databases, so that all data is siloed

-counterterrorism, policing, fraud, international arms compliance checking

**Deltas spend more time with clients, although they do write code as well. I love both ideas, I can sit in my room and write code all day, that’s like a Friday night out for me, I really enjoy going deep into thought about algorithms etc., I also like the idea of a shifting work experience as a delta, in new and unique situations frequently.**

* **like Robocop without the tragic character journey of the main character**

**WHY PALANTIR: I AM VERY PERSUADED BY THE MISSION OF THE COMPANY, I THINK THE OUTCOME OF WHAT I’D DO AT PALANTIR HAS GREATER VALUE THAN WHAT I’D DO AT MOST OTHER COMPANIES, SUCH AS A VIDEO GAME COMPANY.**

So much data now, some data is incorrect, fake data, there is also lots of quantitative techniques for trading, financial, there is also more advanced money laundering schemes

Insider trading

Products:

Foundry: anti-money laundering, over a decade, transaction monitoring, lowers cost for banks and other financial institutions, uses AI, government security (may require clearance to decrypt private info that is transmitted)

Project ended Metropolis: using predictive analysis to monitor employee behavior and satisfaction in a company (JPMorgan), helping hedge funds trade, looking for patterns

Gotham: Predictive analysis to predict probabilities of crimes, “predictive policing”

Apollo: Updates the other software

Hi, my name is James, I am a third year computer science major at the University of Florida, and I am excited for this phone call today, I think I have the technical and interpersonal skills to be a good fit for this internship.

Great standardized test scores, great grades all throughout life, biggest accomplishment was quickly switching to a computer science major

Greatest strength: getting things done, do well under pressure, perseverance

Difficult decision that I had to make: wasting leftover food, or eating it and possibly getting sick.

What gets you fired up? Being in a team, I have always enjoyed being in a team growing up, team sports, being surrounded by like-minded people motivates me.

Tell me a time you have challenged yourself: Physical activity, a bunch of pushups every day, I was weak, now I am more confident in physical abilities, I always set tough goals for myself, no matter if it is physical or technical, or chess, piano

How do I motivate others who I work with? By being down to earth and connect with them on a personal level, I can get my point across better

Project I worked on in my spare time: I love to code competitively, over the summer, Leetcode…….

When I take on a new job or project, I try to understand the culture, take it all in, and then connect with people immediately, then go into the technical project. I like to know how the system operates before I go into it.

If I had co-workers talk about me, they would describe me as being: curious, positive, energetic, always coming up with unique coding solutions bootlegging

Tell me about a plan or decision that you have executed fully. How did it go?: piano contest preparation, a very meticulous plan of daily practices so that I will “peak” before a competition, I’ve done that all throughout grade school, and now practice the same principles of planning in my daily life.

Always have key points that you want to divulge, to show that you have done the research into the company, to show your interest and your keenness, etc. Strategize the execution of

**How was your Halloween weekend?**

**Tell me what you like about your major:** Good response: “I love computer science, it integrates many STEM topics together, I have always been STEM-driven my whole life. I was a biology major, then changed my major, I have loved computer science since my introduction to it in AP Computer Science in high school, as a bio major I was still coding in my free time because I loved it, then switched to computer science. I switched because I wanted to go into the professional field as soon as possible.”

I picked up CS really quickly within my compressed timeframe, learning lots of content in a relatively shorter amount of time, and I have loved it.

**Tell me about your work with your psychiatry lab:** “I was in a psychiatry lab at the University of Florida for around 14 months

Tell me about your e-commerce project: Did it over the summer, self-learned it watching YouTube tutorials, took the initiative to self-learn, had to learn various levels of software design from high level, how humans think, to low level knowledge of computer architecture. Website supports account login/registration, user product browsing, purchasing, purchase history, all vital actions for online shopping.

**What was your favorite project, and why?** Psychiatry project, because of the people. 14 months of collaboration towards something cool (increasing the knowledge of genetic causes of psychiatric disorders) and meaningful while getting to know others personally is great.

**You applied for Dev, is that what you still want, what made you choose Dev over Delta?**

What made you apply to Palantir? Being honest, I first heard of Palantir from a job board. I did some research into the company and thought it was great, what it does it great. Graduating students with computer science degrees have a lot of places they could go into, but Palantir offers more value to the world with its products, Gotham, Foundry, Apollo, making the world a safer place, a more efficient place with the proprietary software. The outcome that I would be a part of is more important to society than say, a video game.

**Is there something you didn’t like about the psychiatry lab?**

**What do you think is most draining about software engineering?** The bugs in software are frustrating and draining every day, but I love it! I love the feeling of debugging and then coming up with an epiphany and then fixing the bug, and having all test cases run as intended. While optimizing code can be difficult, it is very rewarding to see improvements in the efficiency of the program. I am grateful for the new debugging technology that is available – I imagine it must have been much more difficult in the past (even though the software now is more complex), when debugging technologies, smart IDEs, linters were not yet available.

**What other questions do you have?** General questions about location availability, the hierarchy of the company, when to hear back from the recruiter.

**Do Devs switch to Deltas, and vice versa?**

You can be a little casual, but not too casual. You want to give off the impression of a great deal of interest. Command the stage.

Crack some tangent jokes, subtle ones. Small quips, no extended jokes.

**BE PROACTIVE IN ASKING CLARIFYING QUESTIONS IN TECHNICAL INTERVIEWS, ASK IF CYCLIC GRAPH, ACYCLIC, ETC. TO SHOW ENGAGEMENT, JUST USE HUMAN INSTINCT TO GET THE MOST OUT OF THE INTERVIEWER, ASK AS MANY QUESTIONS AS POSSIBLE WHEN YOU AREN’T SURE TO IMPROVE YOUR CHANCES OF ACING THE INTERVIEW !!!!!!! TRY TO FIGURE OUT EVERYTHING YOURSELF, BE RESOURCEFUL, BUT IF STUCK, DON’T BE AFRAID TO ASK FOR A HINT !!!!!!!**

**Decomp:**

*Imagine you're building an app to solve some problem.  
Start from there and iteratively break it down reducing the complexity with each step. Try to go down as far as writing some pseudocode if you can.*

trying to solve the traffic problem of a city, we have the city dataset how would you approach it ?

“design a restaurant", "design a car rental system”

Find average area of all sub-rectangles in a large rectangle

Find the left top corner and width and height of a rectangle of zeroes within a 2d matrix (the rest are 1's)

Write a CSV parser in Python.

Find the border length created from a conglomeration of various 2D rectangles.

-requires a sort by events, events being leftmost edge of each rectangle, store the length of each rectangle as well so that the lengths and the heights can be aggregated. Also overlapping rectangles, perfectly connected, separate. **What if the rectangles are rotated?**

**- try to find an O(N) solution (no sorting)**

How do you find three numbers that sum to 0? (in a list). Now can you do it under O(n^3)?

Implement the C function atoi()

Implement a hash set

Implement an iterative deepening algorithm (iterative deepening Depth-First-Search)

Given a list of "threads", which contain 2 variables - starting and ending times - implement a function that will return all running threads at some time t. Optimize it. (faster than O(n) )

Say you have a single-column table of entries of variable size. Implement this table to also contain methods to lengthen one cell, cut a cell shorter, and to return which cell we're pointing at if given a certain distance from the beginning of the table. All methods need to be fast (assume a single-column table with many, many entries).

What classes and variables would you create for a card game in which each player has 5 cards and has a certain condition for each card he can play ? The remaining card is in an in play deck and the person hosting the game online can see all the cards

You have a set of envelopes of different widths and heights. One envelope can fit into another if and only if both the width and height of one envelope is greater than the width and height of the other envelope. What is the maximum number of envelopes can you russian doll?