1. **What type of deployment strategy did Parts Unlimited use for the DataHub deployment? Describe the benefits and drawbacks of the implemented strategy.**
   Parts Unlimited used a progressive, small-batch deployment strategy, similar to a canary rollout. Instead of launching the DataHub and related promotion systems to the entire customer base at once, they first carried out a controlled 1% “mini-launch” during regular working hours. This enabled all development, operations, data, and business teams to observe real customer behaviour while remaining fully staffed to respond to issues. The organization also deployed code into production multiple times daily, emphasizing continuous delivery and rapid iteration. This approach significantly reduced risk since critical issues, such as the mobile app crashing and misclassified HTTP errors, were identified early and fixed before Black Friday. It also enhanced organizational learning because teams practised chaos engineering, rehearsed failures, and could push one-line hotfixes minutes before launch. However, this strategy also had drawbacks. Some failures, such as shipping API rate limiting and the recommendation component overloading, could not be revealed by the 1% test. Additionally, such an incremental deployment approach requires extensive monitoring, cross-team coordination, and robust automation pipelines, making it costly and organisationally demanding for a company still developing its DevOps capabilities.
2. **List and describe 3 different deployment strategies that Parts Unlimited could have used instead of their selected approach. What are the benefits? What are the drawbacks?**
   Instead of a small-batch canary rollout, Parts Unlimited could have used Blue-Green Deployment, a strategy involving two production environments—one live (Blue) and one prepared with the new version (Green). Once Green is ready, traffic switches over instantly. This offers near-zero downtime and easy rollback, but it requires maintaining duplicate infrastructures and may still struggle with legacy systems, such as their heavily customized ERP. A second alternative is Rolling Deployment, where servers are updated in batches until the entire cluster runs the new version. This avoids maintaining two full environments and limits customer impact, but it complicates rollback if only part of the system is updated, and mixed-version behavior can cause unpredictable issues when services depend on each other. A third alternative is a Gray Release, where the new version is gradually rolled out to small groups of users, such as 1%, 5%, or 10%, before being fully deployed. This approach allows the team to test real user behavior under controlled risk and expand exposure only when performance and stability are confirmed. Gray releases support safe experimentation, can detect issues that only appear in specific user segments, and aligns with the Unicorn Project’s culture of continuous learning. However, this

strategy requires strong traffic routing, robust monitoring, and careful version management.

3. **How was the "success" of the DataHub deployment determined? How did the developers and middle management get the executives to buy into the proposal to expand R&D at Parts Unlimited?**
   The success of the DataHub and the entire Unicorn Project was mainly measured by observable business outcomes and technical performance during both the 1% test and the full Black Friday launch. The teams tracked real-time metrics such as page views, funnel progression, error rates, CPU load, and system throughput. They also assessed conversion rates—20% of targeted users viewed recommended items and 6% made purchases during the test launch—and analysed revenue impact, ultimately generating nearly $35 million in additional sales. Additionally, stores using improved in-store apps and tablets experienced 7% sales growth and significantly increased Net Promoter Scores, reflecting meaningful customer satisfaction improvements. These measurable results, along with feedback from store staff who felt more empowered than hindered by technology, provided concrete evidence that the DataHub and related digital initiatives were delivering real business value.

   Developers and middle management persuaded executives to expand R&D by presenting these results within a clear business context. Maggie delivered a compelling, results-oriented presentation illustrating how the team's experiments generated new revenue, improved margins, cleared aging inventory, and enhanced customer satisfaction—all vital for the company's survival. Maxine emphasized strategic urgency by warning that the company was still far from overcoming the "Death Star" of digital disruption; the Black Friday success only demonstrated that they had finally learned to "fly their X-wings." Erik supported this argument using the Horizon 1-2-3 framework, explaining that Parts Unlimited lacked genuine Horizon 2 and Horizon 3 initiatives, and that long-term growth depended on ongoing experimentation and rapid learning. Collectively, these messages shifted the perception of innovation from a cost to a key path for survival. Their combined efforts convinced CEO Steve to back the "growth thesis," allocate $5 million for an Innovation Team, and endorse ongoing exploratory efforts—despite Sarah's objections. Through tangible results, strategic framing, and effective storytelling, the Unicorn Project team gained executive buy-in for a long-term commitment to R&D and innovation.