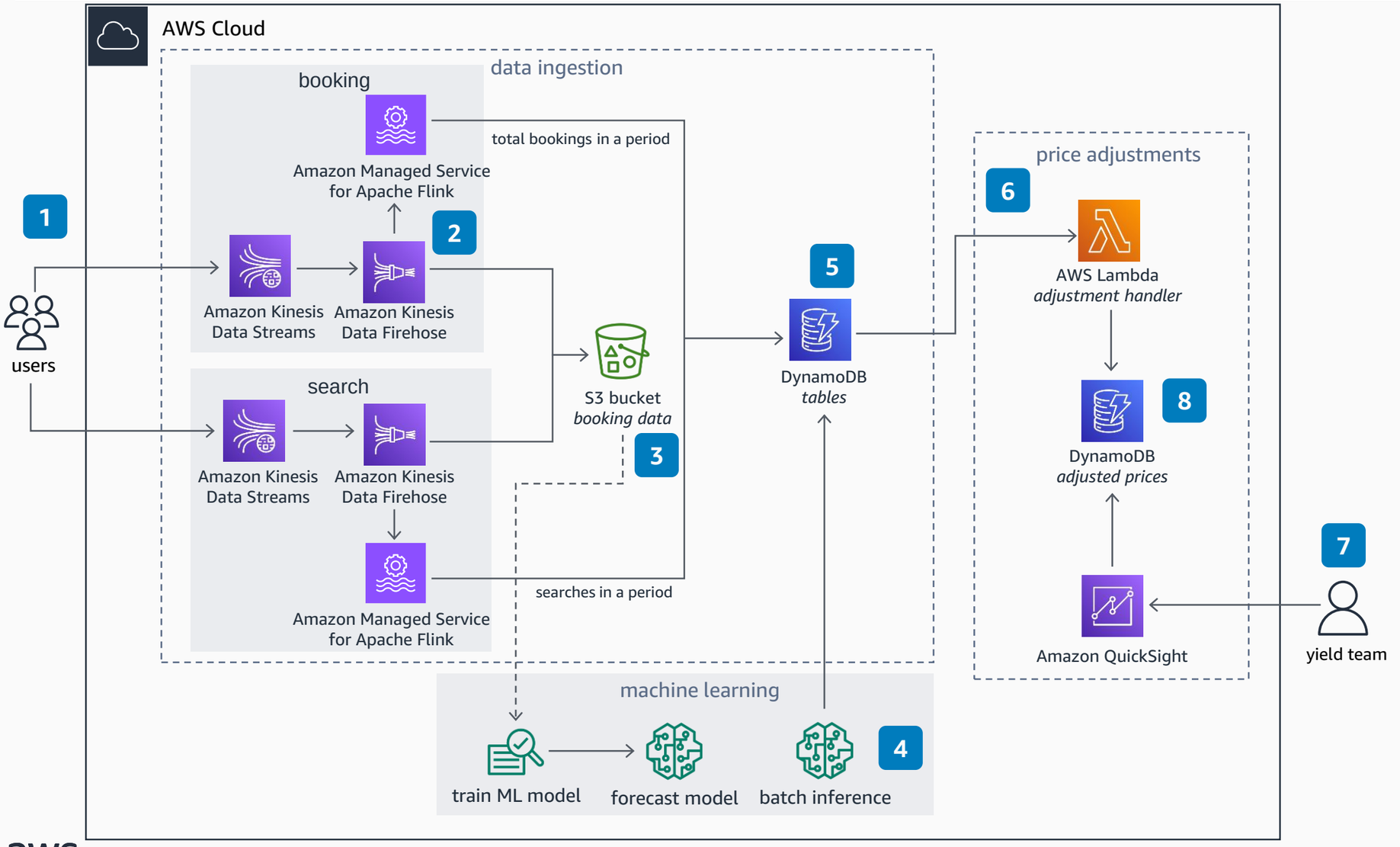
Guidance for Dynamic Pricing for Airlines on AWS

In the travel and hospitality industry, organizations want to optimize pricing strategy. In a business climate that's constantly shifting, dynamic pricing is uniquely valuable to help companies increase personalization, adjust pricing, and offer products with new artificial intelligence and machine learning (AI/ML) capabilities based on data analysis. With dynamic pricing, airlines can increase sales and profit margins while maintaining customer satisfaction.



1. Data is ingested from booking engines and search data using **Amazon Kinesis Data Firehose.**
2. Booking data is stored in **Amazon Simple Storage Service** (Amazon S3) and queried in batches using **Amazon Athena** by a generated **AWS Lambda** event to determine booking rates in the current period. For low latency requirements, **Amazon Managed Service for Apache Flink** runs queries on the ingestion stream.
3. Search data is stored in an **Amazon S3** bucket. For low latency requirements, **Managed Service for Apache Flink** runs rolling queries.
4. Historic booking data is used to train models and then build demand forecast models. These are updated on a regular basis to help compare booking demand to projected bookings.
5. Environment state variables such as booking rate, search rate, total margin, available capacity, and booking forecast are all stored in **Amazon DynamoDB** for the current versioned environment state.
6. The pricing agent algorithm is generated by **AWS Lambda** to assess the environment state and recommend the appropriate price adjustment. Adjustment recommendations update the **Amazon DynamoDB** pricing agent store.
7. The trader evaluates the recommendation from the **Amazon DynamoDB** feed and rejects or approves it. The trader has dashboards available in **Amazon QuickSight.**
8. Approved and timestamped price adjustments are available for the booking engine to search and use.

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AWS Reference Architecture