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Problem Statement: Forecasting the transactional price of Singapore's resale HDB flats

Why is it economically/commercially interesting?
- In Singapore, housing is not only a basic need, but also seen as one of the largest components of household wealth and retirement planning
- Purchasing a HDB flat is often the first major financial commitment for Singaporeans, closely tied to starting a family and long-term financial security/planning.
- Widespread consensus that BTO flats can deliver good returns on investments (ROI) upon resale, making HDB ownership a significant investment decision apart from a housing choice.
- Accurate forecasts of resale prices are also relevant and important to banks for pricing mortgages, setting loan-to-value ratios, and assessing credit/default risks.
- A reliable forecast of HDB resale prices enhances transparency for all stakeholders by reducing misinformation and empowering households to understand the fair value of their flats. This levels the playing field and directs the market towards being more efficient and equitable.

Possible Features:
1. Housing Features:
   a. Remaining lease (years)
   b. Unit size (e.g. x-room, xx sq ft)
   c. Floor
2. Policy and macro factors
   a. HDB Grants (e.g. Proximity Housing Grants for resale flats)
   b. Interest-rate (SORA)
   c. Singapore GDP
   d. Singapore Consumer Price Index (CPI)
   e. Unemployment Rate
   f. Household income growth index
   g. Cooling measures policies (ABSD revisions)
3. Accessibility and Amenities
   a. Transportation distance
   b. Schools
   c. Amenity score (hawker centres, malls, clinics, parks)
   d. Distance from CBD
   e. Future Infrastructure Projects
4. Try to include other interesting features based on research papers

Datasets:
1. data.gov.sg

Approaches:
1. OLS (multi-factor model)
2. ML models - XGBoost
3. Hedonistic pricing model