ABSTRACT:

- This project deals with the design and analysis of a two-stage CMOS operational amplifier for modern analog applications.
- An op-amp is an important analog circuit block used for amplification, filtering, and signal conditioning.
- The two-stage architecture helps achieve high gain and supports a wide output swing, making it suitable for driving capacitive loads.
- The design includes a differential input stage followed by a second gain stage.
- Stability is improved using compensation techniques to avoid oscillations and ensure smooth response.
- The design focuses on achieving high gain and sufficient phase margin for reliable and stable operation.
- The two-stage op-amp is widely used in applications like data converters, sensor interfacing, and signal-processing systems.
- Overall, the project shows the importance of maintaining proper gain and phase margin to ensure accuracy and stability in analog and mixed-signal circuits.