



**H.K.E SOCIETY'S
POOJYA DODDAPPA APPA COLLEGE OF ENGINEERING
GULBARGA – 585102**

(An Autonomous Institution, Affiliated to VTU Belgaum, and Approved by AICTE)

A PROJECT REPORT ON

“HILL CLIMB ASSIST FOR AUTOMOBILES”

**Submitted to
Poojya Doddappa Appa College of Engineering, Gulbarga
(Autonomous Institution)**

In Partial Fulfillment of the Requirement for the Award of the Degree Of

BACHELOR OF ENGINEERING

In

ELECTRONICS AND COMMUNICATION ENGINEERING

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ABSTRACT

Drivers generally find it very difficult to drive in steep places because of the possibility of the automobile moving backwards due to gravity and thereby hitting objects or vehicles behind it. The Hill Climb Assist System aids the drivers in these scenarios. IR Transceiver, which emit modulated IR Light, and sensitive to black and white colours are placed opposite to the encoder wheel which is attached to drive axle. If 0-2-1-3-0 sequence is read from encoder, then the vehicle is moving forward. If 3-1-2-0-3 sequence is read from encoder, then the vehicle is moving in the reverse direction and the brakes are applied by the microcontroller. The brakes will be released only when the clutch is brought to the half-clutch position, at this time the driver accelerates and the car moves forward. The half-clutch position is detected by a half-clutch sensor which is a hall effect sensor coupled with the clutch. A range of values from this sensor is calibrated as half-clutch position where break release occurs. This system is enabled only in first gear in all other cases it is disabled. With this system in action the driver need not concentrate on the brake while navigating through a slope, he just has to concentrate on the accelerator, clutch and the path. This system reduces the effort put in by the driver to control the brake and thus helps bring down the number of accidents on a slope terrain and also make it easier for learners.