7146CEM: Automotive Software Engineering - Design and Development

Coursework

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# Introduction

This document contains information and details regarding the workflow used to create the PID controller, Tuning of PID and Generation of Code.

# Software Development Life Cycle

## Requirement Gathering

### PID controller

To design the PID controller using the following equations

### Cruise Control

To design the cruise control model with the give specifications

### Motor Speed

To design the motor speed model with the give specifications

### Code

To develop the code in accordance with ISO26262 and following Mishra Guidelines

## Design

### PID Controller

-Mention the process used to design the PID controller like creating the transfer function, converting transfer function to Z Transform

### PID Tuning Algorithm

-mention the script which is used to Tune the PID for the models

### Cruise Control

-UML diagrams, block diagrams

### Motor Speed

-UML diagrams, Block diagrams

## Coding

-Autocode generation procedures, Documentation procedures used.

## Testing

-Unit testing results, Polyspace statics analysis result.

## Validation

-Comparing requirements and output of Testing to validate.

# Advantages of the used SDLC model

* Mention the advantages of the SDLC model used with the development of the pid.

# GitHub Workflow

* Mention the github links.
* Paste the flow chart of comits and branches as a picture

# References