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(*Reads the inputs from the cameras*)

CamID := string_to_real(mid( Serial_Data,1 ,1 ));
posSemi := find( Serial_Data,semikolon );
nestePosSemi := find( mid( Serial_Data,posSemi + 1 , len( Serial_Data)-(PosSemi+1)), semikolon) + posSemi ;
neste2PosSemi := find( mid( Serial_Data,nestePosSemi + 1 , len( Serial_Data)-(nestePosSemi+1)), semikolon) + nestePosSemi ;

(*Finds the TagID, X-position and Y-position to the traii-----*)

TagID:= string_to_real(mid( Serial_Data,posSemi + 1 ,nestePosSemi - posSemi));
Y := string_to_real(mid( Serial_Data,nestePosSemi + 1 , len(Serial_Data ) - nestePosSemi));
X := string_to_real(mid( Serial_Data,neste2PosSemi + 1 , len(Serial_Data ) - neste2PosSemi));

(*Resets the cameras so it does not overwrite the reed relays, this is for the transition between camera and reed relays-----*)

IF(Reset_Cam_train1) Then
    Train1_X_Cam_Prim:=0;
END_IF;

IF(Reset_Cam_train2) Then
    Train2_X_Cam_Prim:=0;
END_IF;

IF(Reset_Cam_train3) Then
    Train3_X_Cam_Prim:=0;
END_IF;

(*If the recieved string's CamID is the same as the Control module's Cam_number then the canera module can process the string-----*)

IF(CamID = Cam_Number)
    THEN
    IF (X > -29 AND X < -7) (*The X-position area where the camera can detect the trains*)
        THEN

            IF(TagID = 1)
                THEN
                IF(Reset_Cam_train1)
                    THEN
                    Train1_X_Cam_Prim:= 0; (*Sets the camera data to 0, if the reset cam is true*)
                ELSE
                if(Y>-8) Then
                    Train1_Number:=1;(*Sets train number 1, since TagID is 1*)
                    Train1_Y_Pos:=Y;
                    Train1_X_Pos:=X;
                    Train1_X_Cam_Prim:=X*Cam_Data_Prim.CalibrationX1+Cam_Data_Prim.CalibrationX2; (*Sets the value from the camera to the HMI position value*)
                    (*Resets the other cameras*)
                    Train1_X_Cam_Sek:=0;
                    Train1_X_Cam_Thrd:=0;
                    Train1_X_Cam_4th:=0;
                end_if;
                END_IF;

                (*Sets the track number*)
                IF 0.25 <= Y AND Y <= 8
                    THEN
                    Train1_Track_Number := 1;
                ELSIF -0.25 >= Y AND Y >= -8
                    THEN
                    Train1_Track_Number := 2;
                END_IF;
            END_IF;

            (*Repeat of the code above, but for train 2-----*)

            IF(TagID = 2)
                THEN
                IF(Reset_Cam_train2)
                    THEN
                    Train2_X_Cam_Prim:=0;

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ELSE
if(Y>-8)
Then
Train2_Number:=2;
Train2_Y_Pos:=Y;
Train2_X_Cam_Prim:=X*Cam_Data_Prim.CalibrationX1+Cam_Data_Prim.CalibrationX2; (*Sets the value from the camera to the HMI position value*)
Train2_X_Cam_Sek:=0;
Train2_X_Cam_Thrd:=0;
Train2_X_Cam_4th:=0;
end_if;

END_IF;

IF 0.25 <= Y AND Y <= 8
THEN
Train2_Track_Number := 1;
ELSIF 0.25 >= Y AND Y >= -8
THEN
Train2_Track_Number := 2;
END_IF;
END_IF;

(*Repeat of the code above, but for train train3-----*)

IF(TagID = 3)
THEN
IF(Reset_Cam_train3)
THEN
Train3_X_Cam_Prim:=0;
ELSE
if(Y>-8)
Then
Train3_Number:=3;
Train3_X_Cam_Prim:=X*Cam_Data_Prim.CalibrationX1+Cam_Data_Prim.CalibrationX2;(*Sets the value from the camera to the HMI position value*)
Train3_X_Cam_Sek:=0;
Train3_X_Cam_Thrd:=0;
Train3_X_Cam_4th:=0;
end_if;
END_IF;

IF 0.25 <= Y AND Y <= 8
THEN
Train3_Track_Number := 1;
ELSIF -0.25 >= Y AND Y >= -8
THEN
Train3_Track_Number := 2;
END_IF;
END_IF;
END_IF;
END_IF;

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