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| **Peripheral** | **Function** | **Use in Derbot** |
| ACD – Analog to Digital Converter | Convert analogue signals into digital values | Read analogue voltage from AN0, AN1, AN3 for the LDRs |
| FVR – Forward Voltage Reference | Set the voltage reference for the ADC (1.024V, 2.048V or 4.096V) | Setting the voltage reference of the ADC to 1.024V. the ADC has a 10bit resolution which will result in a resolution of 1mV |
| ECCP1 – Enhanced capture compare module 1 | Enhanced PWM mode 1 | The enhanced PWM mode for the left motor |
| ECCP2 – Enhanced capture compare module 2 | Enhanced PWM mode 2 | This will generate the PWM signal for the right motor of the DERBOT |
| TMR2 – internal Timer 2 of the PIC | This timer will be used for both PWM pulses for the left and right motor | The PWM values are sent into the IN pins of the L293D |
| TMR4 – internal Timer 4 of the PIC | This timer will be used to generate a PWM signal in-code (instead of using a CCP module) | The in-code-generated PWM signal will be used as the data for the SERVO |
| TMR6 – internal Timer 6 of the PIC | This timer will be used at the end of the program to determine the stopping time | When the ending white line is detected, the DERBOT will stop when TMR6 overflows (1s) |
| MSSP1 | I2C – PIC will be the MASTER | The PIC will be the Master |
| MSSP2 | I2C – external I/O will be the SLAVE | The I/O expansion will be the SLAVE |