

Week 4 Milestone

In this week you will demonstrate the correct operation of you servo API. This will be done using your serial API and command parser. You will issue the PAN and TILT commands to demonstrate the correct operation of the servo motors. For example the command PAN 88 should move the pan servo to the center of its travel and similarly, the command TILT 72 should move the tilt servo to the center of its travel.

Begin the TWI API. You will begin working on the TWI. The functions needed are the following:

```
void TWIinit(void); // This function will initialize the TWBR register
```

```
uint8_t TWIaction(uint8_t command); // This function is needed by every TWI operation.  
// It performs operations that must be performed for each  
// operation, such as clearing TWINT and enabling the  
// TWI system. In addition, it performs any other  
// command needed by this particular operation. This  
// command is passed into the function as a uint8_t.  
// It the returns the status (TWSR) of that operation.
```

```
uint8_t TWIread(uint8_t regNumber); // This function is used to read the contents of any of  
// the camera's registers. It returns the 8-bit contents of the  
// specified register.
```

```
void TWIwrite(uint8_t regNumber, uint8_t value); // This function takes the value passed in  
// and writes it to the specified register. It returns nothing.
```

The following are the commands that are sent serially by the user to allow reading and writing of the camera registers they will be used in week 7 to demonstrate the correct operation of the TWI API:

```
rdCamReg regNumber  
wrCamReg regNumber value
```

The register number (RegNumber) and the value are to be entered in hexadecimal. The read command should print a message such as

Camera register = (regNumber in hex) Register value = (value read in hex)