**ACS130 Individual Contribution**

**Describe what involvement you had in designing, implementing and testing the software for the system, using the V-model as a reference (design, implementation, testing phases of the project). /4**

My main role during sessions was designing each subsystem on the laptop by coding the relevant script in MPLAB, with my partners beside me offering advice to help debug the code. I coded the project task by task, saving each version to combine them together at the end – and corrected errors: first in MPLAB itself, when I informed the team that the program wasn’t able to clean and run appropriately, and then through testing, when we would observe the robot’s movements as a team and decide on any changes. In later stages, where the integration of LEDS with IR distance sensors was involved, it was my job to translate the code into meaningful conditionals that the team could use to check that the robot was running (e.g. the code has been written so that if the right sensor detects an object, LEDs 3 and 4 will turn on).

**Analyse and describe how you thought the team worked on this project, including a reflection on how teamwork within the group could have been improved. /3**

I think the team worked very well together: Balazs and Martyna would each bring one of the relevant documents up on their devices while I coded the project on MPLAB - whether it was multiple copies of the Robot Specification or lecture notes to look back through - and we cooperated to work through each task.

It felt as though everyone had an input and was taking part, either through manually testing the robot, bringing up relevant research and ideas, or coding on the software interface. If there had to be an improvement, I think it would have been good to share each of the roles between us and switch seats each session, to give us all equal opportunity to perform each of the design aspects mentioned.

**Reflect and describe the skills that you have acquired or improved as a result of working on this project. /3**

An obvious benefit of the project was gaining practical experience coding a project in C which could be implemented to perform tasks in real life. One part of the project specific to this aspect, which I really benefited from, was the focus on configuring pins on the PIC microcontroller to perform certain functions – this was a key part of integration between the software and hardware, and extended my knowledge past simply coding a C program. Creating a flowchart to layout the robot’s functions in the design stage, and understand what we actually wanted it to do was also a very important skill which I think will prove useful for professional coding. Combined with the idea of chunking the project into individual tasks, which we worked on through separate versions of the code, we simplified the problem and could then solve it using a much more easy and efficient approach.