

CAPABILITIES DOCUMENT

GROUP 11

John, Durham, Alex, Ian, Ethan

Version 1.00

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Abstract

This document will outline the biographical information and relevant experience of each of Group 11's team members. The purpose of this document is facilitate the organization and planning of the project by recognizing the team and its members' strengths and weaknesses. Ultimately, this document will outline each team member's role within the team and consolidate any information pertaining to time conflicts or constraints the team may encounter during the project's lifetime.

Contents

1	EDIT HISTORY	3
2	TEAM MEMBERS	3
3	CAPABILITIES	4
4	POSSIBLE APPLICATION AREAS	8
5	AVAILABILITY	9
6	GLOSSARY OF TERMS	10

1 EDIT HISTORY

- February 19th 2017:
 - **John Wu:** Initial set up of document sections (including table of contents)
- February 19th 2017:
 - **Alex Lam:** Added own capabilities and self-evaluation. General formatting of initial document
 - **John Wu:** First draft of sections 2 and 6. Added own capabilities and self-evaluation (section 3)
 - **Ethan Lague:** Added own capabilities and self-evaluation (section 3)
 - **Ian Smith:** Added own capabilities and self evaluation (section 3)
 - **Durham Abrie:** First draft of sections 4 and 5. Added own experience and capabilities (section 3)
- February 22nd 2017:
 - **Alex Lam:** General edits to formatting, small additions to section 3

2 TEAM MEMBERS

- John Wu - U2 Computer Engineering
- Ian Smith - U2 Computer Engineering
- Alex Lam - U1 Electrical Engineering
- Durham Abrie - U1 Electrical Engineering
- Ethan Lague - U1 Electrical Engineering

Contact Information

Name	Student Number	Phone Number	Email
John Wu	260612056	514-814-2588	john.wu@mail.mcgill.ca
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Ethan Lague	260745803	514-627-1698	ethan.lague@mail.mcgill.ca

3 CAPABILITIES

All capabilities listed are based on extracurricular experience. Knowledge based on in-class teachings and projects were considered in an informal setting.

- **Durham**

- **Management**

- * Operations Manager at student-run, uncensored, weekly newspaper (former)
 - Organized and conducted pricing restructuring
 - Trained associates
 - Coordinated paper sales, printing and delivery
 - * Captain of economics competition team (former)
 - Created solutions to economic issues and presented to finance professionals with a group of peers
 - * Online marketing consultant for real estate agency (former)
 - Budgeted and implemented advertisements of multiple platforms (print and online)
 - Trained colleagues to maintain advertisement program after leaving position

- **Documentation**

- * Intern at chamber of commerce (current)
 - Maintain and manage accounting reports and documents for the non-profit
 - * Authored CCOM 206 class-winning research paper

- **Software**

- * Personal Java development projects (former)
 - Small-scale programs including graphing calculator, financial advisor

- **Hardware**

- * ECSESS Robo-electronics club member (current)
 - Program microcontroller for and build small, breadboard-based robot

- **Testing**

- * NA

- **Ian**

- **Management**

- * Former Project Manager for Environmental and Engineering Managers Limited
 - * Former Co-President of the "Learn to Swim" Program in high school

- **Documentation**

- * Recorded daily changes to the British Caribbean Insurance Company customer database

- **Software**

- * Developed an automated library system for Stella Maris Preparatory School
 - * Experienced in Java and Android Programming languages

- **Hardware**

- * NA

- **Testing**

- * Performed Air Quality Tests and Evaluations for multiple factories and mining plants.

- **Alex**

- **Management**

- * Current head of the diving class program for the boroughs of Ile-bizarre and St-Genevieve.
 - In charge of developing and organizing course schedules and curricula

- **Documentation**

- * Wrote detailed course documents for the city of Montreal in the context of the Diving Program
 - * In charge of recording and documenting diving course recruitment

- **Software**

- * Developed small calculator Java applet

- **Hardware**

- * Member of McGill Robotics team (current)
 - * Member of Robo-electronics (current)
 - * Built small remote controlled car(former)

- **Testing**
 - * NA
- **Ethan**
 - **Management**
 - * Trained associates at Wal-Mart
 - **Documentation**
 - * NA
 - **Software**
 - * Developed small calculator GUI in Java
 - **Hardware**
 - * Built baseball pitching machine (former)
 - * Built remote control car (former)
 - **Testing**
 - * NA
- **John**
 - **Management**
 - * Former DECA McGill President and VP Communications
 - * Former Engineering Junior Council President and VP Events
 - * Former High School Class President
 - **Documentation**
 - * Wrote requirement documents at previous internship (Mxi Technologies)
 - * Wrote testing documents at previous internship (Mxi Technologies)
 - **Software**
 - * Former Software Developer at Mxi Technologies
 - * Web Applications
 - Personal Website developed using MEAN stack
 - Restaurant finder application developed using Sails.js
 - Ride-share application developed using Django
 - * Mobile Applications
 - Developed social media iOS application using Swift

- Developed Montreal mural finder android application using Java

– **Hardware**

- * Former McGill Engineering Competition Winner (Junior Mechanical Design Category)
- * Built a telepresence robot using an Intel Edison Microcontroller
- * Developed an augmented reality video game using Orion Leap Motion hardware device

– **Testing**

- * Wrote automated unit tests at former internship (Mxi Technologies)
- * Performed end-to-end user testing at former internship (Mxi Technologies)

Overall (Self) Evaluation Table:

	Durham	Ian	Alex	Ethan	John
Management	* * * * *	* * * *	* * *	* * *	* * * *
Documentation	* * *	* * *	* * *	**	* * *
Software	* * *	**	* * * *	**	* * * * *
Hardware	**	* * *	* * * *	* * * * *	* * *
Testing	*	* * * *	**	* * *	**

Key:

- Very Experienced: * * * * *
- Experienced: * * * *
- Proficient: * * *
- Limited Experience: **
- No Experience: *

4 POSSIBLE APPLICATION AREAS

- **Durham:**

Durham is most experienced in management and administration; this experience has been garnered through managerial positions held at various clubs, teams and businesses. In addition, he has experience with budgeting and accounting, making him qualified to oversee the budgeting of time and resources for this project. He has some experience with software and hardware as well, but given the expertise of other team members, is not the most qualified to oversee those aspects of the project. Given this information, Durham will be the **Design Team Manager**. As a secondary position, he will act as a *Documentation Aide*.

- **Alex:**

Alex has considerable experience with robotics, as he is a member of both McGill Robotics and the Ecess Robo-electronics club. He also has managerial experience and has also organized and planned scheduling for a class he helps coordinate. Given his recent participation in another design team (McGill Robotics) and his proven organizational skills, Alex will be most effective in a management role. Thus, Alex will perform the duties of the **Design Documentation Manager**. Since he also has considerable experience with hardware, he will provide support as a *Hardware Engineer*.

- **John:**

John has considerable experience in management, software and hardware. He has held multiple extracurricular, managerial positions while at McGill, but is most qualified in the field of software. John recently completed an internship at Mxi Technologies, where he gained knowledge in software architecture and bolstered his coding skills. In addition he frequently competes in hackathons, and has lots of experience developing his own projects, including mobile and web applications. While his experience qualifies him for multiple positions, John will fulfill the duties of the **Software Team Leader** since it most suits his expertise. As a secondary role, he will also aid the team as a *Documentation Aide*.

- **Ethan:**

Ethan is most experienced with hardware. He has completed numerous personal projects, including a baseball pitching machine and a remote controlled car. These experiences are particularly relevant to this design project's purpose: the pitching machine in another form of ball launcher, and a remote controlled car has similar design features to a mobile robot. Given this specific and applicable experience to the hardware aspects of this project, Ethan will be our team's **Hardware Team Leader**. As a secondary position, he will be a *Test Engineer*.

- **Ian:**

Ian has demonstrated an ability to record, organize and analyze data through his employment history. He has updated data for large company databases, as well as recorded data himself and even conducted testing. He also has experience automating time consuming processes, which could save the team hours of our valuable time budget.

In addition, he has a different perspective from most of the team since he is in computer engineering, not electrical (and has taken more programming courses). Ian is more than qualified to be our team's **Testing Team Leader**. Given he has more programming experience than the electrical engineering students on our team, he will also be a *Software Engineer*.

5 AVAILABILITY

- Repeating McGill Commitments
 - ***Feb. 24, Mar. 17/31:*** Ecse-210 Quiz (Durham, Alex, Ethan), **3:30-4:30 PM**
 - ***Mar. 8/22, Apr. 5:*** Ecse-210 Laboratory (Durham), **12:30-2:30 PM**
 - ***Feb. 22, Mar. 15/29*** Ecse-210 Laboratory (Ethan) **12:30-2:30 PM**
 - ***Mar. 6/20, Apr. 3*** Ecse-210 Laboratory (Alex) **12:30-2:30 PM**
 - ***Tuesdays:*** Ecse-291 Laboratory (John, Ian), **2:30-5:30 PM**
- Repeating Extracurricular Commitments
 - ***Fridays:*** Dragon Boating (Alex), **5:00-8:00 PM**
 - ***Tuesdays:*** Work (Ethan), **5:00-10:00 PM**
- Singular McGill Commitments (Midterms, Finals)
 - ***Feb. 21:*** Ecse-291 Lab Test (Ian, John), **1:30-5:30 PM**
 - ***Mar. 6:*** Math-363 Midterm (Ian), **6:05 PM-8:00 PM**
 - ***Mar. 7:*** Comp-251 Midterm (John), **11:30 AM-1:00 PM**
 - ***Mar. 8:*** Math-264 Midterm (Ian), **6:05 PM-8:00 PM**
 - ***Mar. 10:*** Ecse-251 Midterm (Durham, Alex, Ethan), **8:30-9:30 AM**
 - ***Mar. 10:*** Ecse-330 Midterm (John), **11:30 AM-1:00 PM**
 - ***Mar. 15:*** Ecse-205 Midterm (Durham, Alex, Ethan), **9:30-10:30 AM**
 - ***Mar. 16:*** Ecse-206 Midterm (Durham, Alex, Ethan), **1:00-2:30 PM**
 - ***Mar. 16:*** Geog-205 Midterm (John), **6:00-8:00 PM**
 - ***Mar. 28*** Ecse-291 Laboratory Demo (John, Ian), **2:30-6:30 PM**

We have agreed upon a weekly meeting time: ***Thursday, 6:00-8:00 PM***. The software team meetings, hardware team meetings, and any other necessary group meeting times will be added to this commitment as needed. Unless otherwise specified or discussed within the team, all meetings will occur on the 5th floor of the Trottier Engineering Building.

6 GLOSSARY OF TERMS

COMP 251 : Algorithms and Data Structures

ECSE 205 : Statistics and Probability For Engineers

ECSE 206 : Introduction To Signals and Systems

ECSE 210 : Circuits 2

ECSE 251 : Electromagnetic Fields

ECSE 291 : Electrical Measurements Lab

ECSE 330 : Introduction To Electronics

GEOG 205 : Climate Change - Past, Present, and Future

FACC 100 : Introduction To The Engineering Profession

MATH 264 : Advanced Calculus

MATH 363 : Discrete Mathematics