

Illinois Institute of Technology

# IPRO 351 Project Plan

## Combating Underage Drinking and Driving

Members: Ashanti Balouki, Alexander Donchev, Arathi Jayaraman, Samiat Jinadu, Jennifer John, Daniel Kelly, Mikayla Mazur, Sandra Menezes, Kimberly Nealy, George Pop, Talha Qureshi, Cedric Ramos Silva, Josiah Yeung

Advisor: Jim Braband

CS Advisor: Michael Saelee



Spring 2011

## TEAM CHARTER

### 1. Team Information

#### A. Team member roster (name, contact info)

<b>Team Member</b>	<b>Major</b>	<b>Phone Number</b>	<b>E-mail</b>
Ashanti Balouki	Computer Science	[REDACTED]	abalouki@iit.edu
Alexander Donchev	Computer Engineering	[REDACTED]	adonchev@iit.edu
Arathi Jayaraman	Psychology	[REDACTED]	ajayara5@iit.edu
Samiat Jinadu	Psychology	[REDACTED]	sjinadu@iit.edu
Jennifer John	Biochemistry	[REDACTED]	jjohn4@iit.edu
Daniel Kelly	Business Administration	[REDACTED]	dkelly12@iit.edu
Mikayla Mazur	Biology	[REDACTED]	mmazur1@iit.edu
Sandra Menezes	Chemistry (Focus on Education)	[REDACTED]	smenezes@iit.edu
Kimberly Nealy	Professional and Technical Communication	[REDACTED]	knealy@iit.edu
George Pop	Architecture	[REDACTED]	gpop@iit.edu

Talha Qureshi	Biochemistry	██████████	tquresh1@iit.edu
Cedric Ramos Silva	Aerospace/Mechanical Engineering	██████████	cramossi@iit.edu
Josiah Yeung	Computer Science	██████████	jyeung@iit.edu

B. Team member strengths, needs and expectations

<b>Team Member</b>	<b>Strengths</b>	<b>Needs</b>	<b>Expectations</b>
Ashanti Balouki	Very organized, great at managing projects, motivated	Need specifics about what is expected of me	Hope to gain experience in application development
Alexander Donchev	Goal driven, analytical thinking, computer programming experience	Cohesive Team	Respect of all team members, being loyal to the team
Arathi Jayaraman	Communication skills, organization skills, easy to work with	Need to work with people that get work done	To learn how to work with people of various majors
Samiat Jinadu	Organization, communication	Organized goals	Gain full experience of group work
Jennifer John	Organized, good communication skills, hard-working, motivated, focused	Organization and motivation from others	To have a working prototype and resourceful sponsors and endorsers

Daniel Kelly	Communication skills, Delegation skills, motivation	Help with Development and Interface	To develop the application and go to market
Mikayla Mazur	Communicating effectively, easy to work with	Need to be given meaningful tasks, held accountable	To further develop a product that will benefit & hopefully cut down on drinking-related accidents
Sandra Menezes	Organized, good communicator, prompt, efficient	Experience with game validation and testing	To be able to see a working prototype
Kimberly Nealy	Writing, Indesign Editing, Photoshop, Doc Design, & Layout	Details, specifics, and requirements from members	To learn and grow from others and to have a working prototype and surveys
George Pop	Determined, Perspective, Creative	Experience in application development	Learn from others and contribute to the team
Talha Qureshi	Good communicator, good listener, work well with others	Computer skills	Become better at computers, become better at business affairs
Cedric Ramos Silva	Hard-worker, gets things done	High goals	I hope to make an impact in this IPRO
Josiah Yeung	Motivated, eager to learn	Become more independent in creating self goals	Be a vital part of the development of the application prototype

## 2. Team Purpose and Objectives

### A. Purpose

The team purpose is to combat underage drinking and driving through the development of a Flight Plan iPhone application in conjunction with robustly designed game applications geared towards testing impairments caused by underage consumption of alcohol that would directly affect motor and cognitive skills needed for safe driving.

### B. Objectives

#### Development/Application:

- Plan, develop and test the iOS Applications for a functional, robust set of Flight Plan and Game applications

#### User Interface:

- Develop prototypes and marketable designs for the physical appearance of the applications

#### Information Gathering/Usability:

- Gather data to find out what people want (validation) or would be interested in --our target market
- Construct appropriate testing program to obtain viable information about functionality and consumer usability of the applications

#### Business/Marketing/Legal:

- Develop a business plan and marketing strategy in order to obtain financial sponsors and proceed to commercialization.
- Launch Version 1.0 of Flight Plan in Apple's App Store.

## 3. Background

IPRO-351 is a student-designed IPRO and is currently in its fourth semester of existence. The main goal of the project is to combat drinking and driving. The first semester focused on developing a device that uses infrared technology. Through their research, they found extensive patents that halted the progress of their work. The second semester team decided to take a creative approach in preventing drinking and driving, specifically underage drinking and driving. The team looked at the key functions that are impaired when intoxicated: cognition, eye movement, and dexterity. They created a series of iPhone application tests that would measure these impairments. During the third semester, surveys were conducted and focus groups were developed. They also determined proper pricing and marketing techniques for the business aspect of the project. They were able to further the research aspect of the project and create a more robust plan for the progression of the IPRO.

The societal costs are obvious. The issue of teenagers drinking has seen a significant increase over the past ten years. Survey suggest 75% of seniors in high school have consumed alcohol. In addition to this, 60% of juniors and seniors say they have ridden with an intoxicated teen driver. Out of 5,000 teenage driving deaths, drinking and driving cause 1,900. This is a major concern. Often times parents do not know their children are drinking and driving, let alone drinking at all. Almost half of the teens who drank in the past year were said to be 'nondrinkers' by their parents.

Benefits of the product include the appeal and ease of acceptance into society. Most teenagers and their parents are familiar with the existence of smart phones, and 62% of teenagers already own and use a cellular phone. Due to an application's ease of use and commercial availability, the product would be easily attainable for the targeted voluntary market. This ease of adoption would help the product quickly integrate into the lives of the consumer. Having a cellular phone based system, allows for parents to easily communicate with their child regardless of the child's location. The cellular phone approach allows for discrete use of the product, unlike a breathalyzer or transdermal detection unit, increasing the likelihood of adoption.

The team focused in on developing an application of Apple's iPhone because the ease of programming, resources available, and the popularity of the device. The Connect2Car system that could potentially be installed in the vehicle can communicate with SDK applications, same as the iPhone. The application, once developed, would be easily translated to a multitude of cellular phone operating systems.

The most critical part of Spring 2011 will be testing the effectiveness of our iPhone applications and creating a Flight Plan application that supports our overall goal. This Flight Plan application allows parents to get the basic information about where the child will be and how the child can be contacted. Based on last semester's research, we plan to further the data analysis and conduct more tests to increase the validity of the iPhone application. People will have different levels of impairment and we need to conduct research to make sure the applications are reliable in measuring impairment.

#### **4. Team Values Statement**

A.

- Integrity
  - Fidelity
  - Corporate Citizenship
  - Diligence
  - Time Awareness
- 
- Team members should attend all required meetings on time and prepared to get down to business, address conflicts as they arise, share pertinent information with team members, keep the lines of communication open., e.g., via IIT email, Google Docs, and/or cell phone.
  - Accountability and Timeliness (Class attendance, arriving to class on time, turning in assignments before the deadline, admitting mistakes)
  - Teamwork (each success and failure belongs to the whole team, celebrate when something great happens and pick others up when something negative happens, we are all in it together)
  - Assertiveness (openly stating things in a way that conveys your opinions, yet does so in a manner that is not forceful or passive)
  - Openness and Innovation (be willing to think openly and innovatively no matter how crazy an idea may be, on the other end: make sure you do not criticize others thoughts or ideas)
  - Dedication (the overall effort each individual puts into the project, work outside of the classroom should be done in order to move our project forward, people should willingly volunteer to take part in the work)

## B.

- Problems: concerns should be brought to the attention of the team leader. Solutions to problems should be shared with the entire team when required. Teams may find Google Docs useful for sharing working files, new ideas, and/or any problems with deliverables and deadlines.
- Conflict should be first discussed between the people that have the issue. If this cannot be done our team's conflict manager should take part to help solve the issue. Last case scenario would be Professor Braband getting involved and helping sort things out.
- For issues pertaining to the course work, we should first try to address it through e-mails. If it is a situation that cannot be addressed through e-mailing, we will set up a time that works for everyone to meet outside of class.

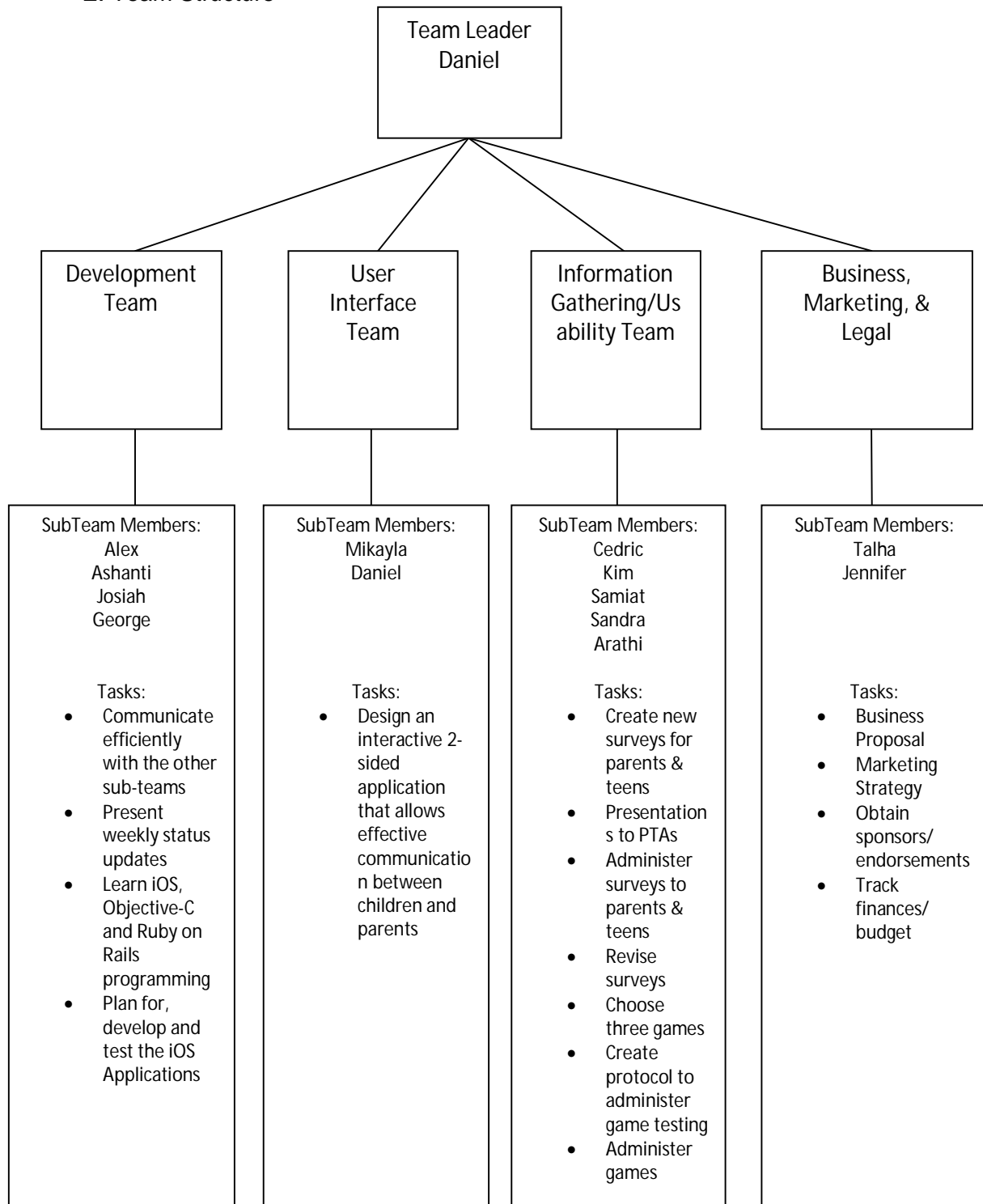
## II. PROJECT METHODOLOGY

### A. Work Breakdown Structure

1. Solving the Problem of Drinking and Driving
  - a. Development Team
    - i. Write a pseudo code for the applications
    - ii. Design graphics for the applications
    - iii. Requirements Analysis (user/developer)
    - iv. Creation of Nonfunctional Mock-ups
    - v. "Actual" Development of applications
  - b. User Interface Team
    - i. Create a working skeleton interface mock-up that the Development team can use to begin coding.
    - ii. Continually update and alter original to mock up to eventually create a working and appealing prototype.
    - iii. Create a marketing video
  - c. Information Gathering/Usability Team
    - i. Create new survey for parents
    - ii. Presentations to PTAs
    - iii. Administer survey to 100 parents
    - iv. Revise teenager survey
    - v. Administer teen survey to 100 teens
    - vi. Choose three games that are valid for determining impairments
    - vii. Create protocol to administer game testing
    - viii. Test the games
  - d. Business, Marketing, and Legal Team
    - i. Create business plan proposal

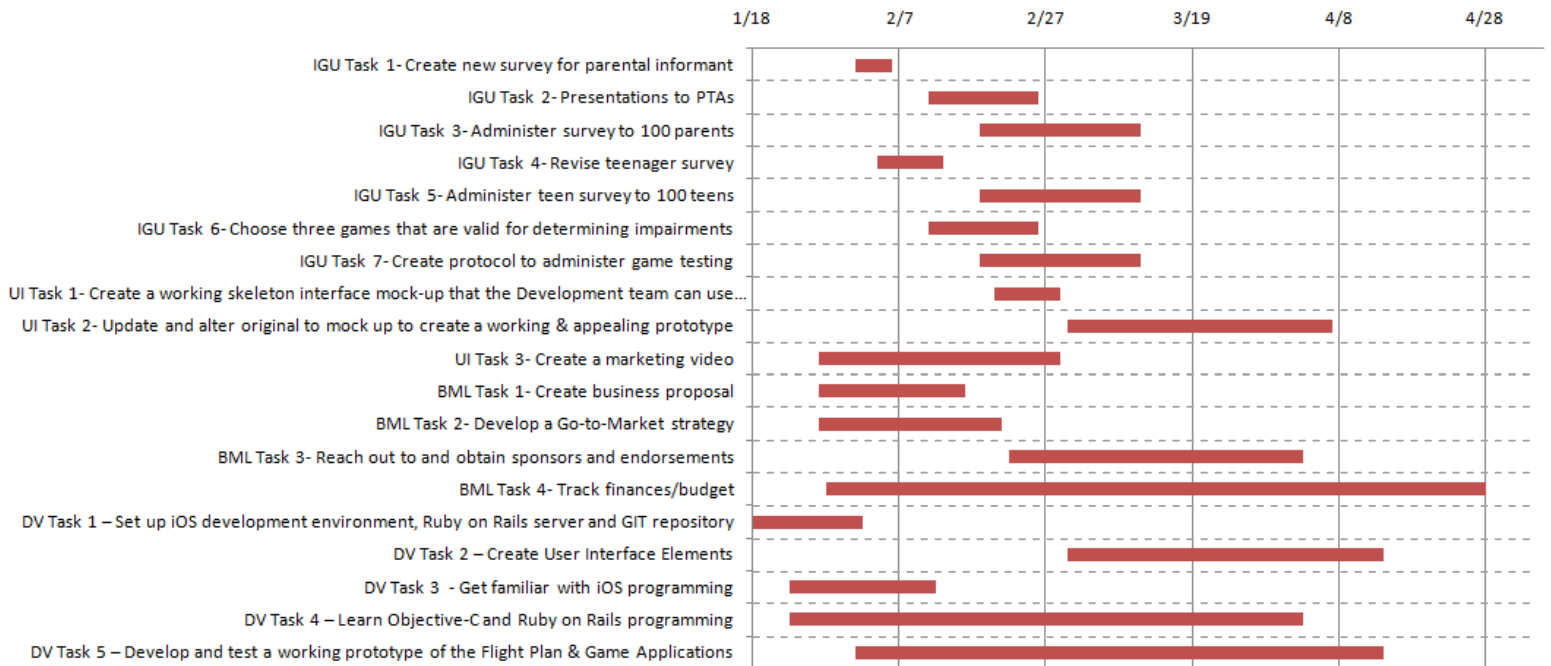
- ii. Develop a Go-to-Market strategy
- iii. Track budget and overall expense
- iv. Create a financial analysis breakdown
- v. Obtain sponsors and endorsements
- vi. Revise name of application and create logo
- vii. Investigate the legal regulations, rules, & consents for product development & use

## 2. Team Structure





## IPRO 351 Combating Underage Drinking and Driving Spring 2011 Gantt Chart



<b>Legend</b>	
<b>Team</b>	<b>Team Abbreviation</b>
<b>Information Gathering/Usability Team</b>	<b>IGU</b>
<b>User Interface Team</b>	<b>UI</b>
<b>Development Team</b>	<b>DV</b>
<b>Business, Marketing, &amp; Legal Team</b>	<b>BML</b>

## **B. Expected Results**

The overall mission of IPRO 351 (as stated above) is to combat underage drinking and driving through the implementation of iPhone applications focused on deterring underage drivers from driving while under the influence. A number of different methods of accomplishing our mission have been discussed at the group level some showing more promise than others. In order to determine which method will most effectively serve the community's needs, we must accrue a substantial amount of research from many different fields of study to assess the market and produce a working prototype of these discussed applications.

That being said, each subgroup has compiled a list of expected results for the upcoming semester that will lead us to complete our desired objectives and final product.

### **Development Team**

Expected activities include determining the process necessary to develop the prototype, writing the program, and testing / debugging the final result.

The first potential hurdle in the research process is determining the overall function of the application and what purpose it will ultimately serve. The next foreseeable difficulty is how the sobriety tests will be designed and the program code for the application itself. To avoid patent infringements, extensive research on competing programs will be completed. Potential output for application development subgroup includes a working prototype and supplemental testing data to be used to rework the prototype for future IPRO groups.

The working prototype will be as close to the solution as IPRO 351 has come since its conception. With contributions from the teams, the application will embody the entire efforts of the group.

### **User Interface Team**

We, as the user interface team, will design a fully functioning prototype of the Flight Plan so that the development team can create a polished iPhone application based around it. We will also investigate the possible integration of existing reflex games into our application, if this proves infeasible; we will design our own based around similar concepts. Following the development of the interface, we will develop a promotional video to present at IPRO day and use for a possible marketing campaign.

### **Information Gathering/Usability Team**

As the Information Gathering/Usability team, we would like to focus our work on a variety of different aspects geared towards obtaining relevant information and data from surveys and user interaction with the applications. We plan to describe expected data from research or testing involved in the project. We expect to observe a desirability of the Flight Plan, and have data for the normal distribution for our games. This will include describing the expected results in terms of deliverables that will be produced by the project team. Surveys or focus groups results and game testing results will be focused upon and developed. We hope to summarize the challenges, risks, and assumptions that one can anticipate to affect the results. One of the biggest challenges will be getting into the schools and PTA meetings, as well as getting people not completing the surveys in a timely fashion. We will continue to discuss how the expected results will be incorporated in a proposed solution or contribute to a solution process. Our survey feedback will determine the route needed to be taken with the Flight Plan.

## Business/Marketing/Legal Team

As the business and marketing team for IPRO 351 we would like to focus on various marketing strategies, promotional tactics, and financial analysis plans to help in the furthering of our IPRO on the global level. In order to accomplish this, we will first create a business plan proposal which will encompass a Go-to-Market strategy, financial analysis breakdown, and take into account consumer needs. To help support this project endeavor, we plan to reach out to several sponsors and gain endorsement deals to finance and promote our product. We plan to develop a new product name under the guidance of the group and create a logo/emblem for marketing, endorsement, and advertisement.

We hope to fulfill these business plans and ideas in order to better the promotion of our expected product and thus gain acceptance in the commercial and consumer world.

## C. Project Budget

Item	Justification	Amount
Application Development- 2 iPod Touches (2 for \$229 each)	Development and testing of applications	\$458
Publication/Communication	Printing, project poster & other materials; marketing and advertisement of product	\$100
Transportation	Trips to talk to sponsors and conduct interviews.	\$50
Prototyping Materials	Design and development of applications	\$100
Others	Teambuilding food (\$100), Application Store listing (\$100), Focus Group and Survey incentives (\$250)	<b>\$450</b>
	<b>Total</b>	<b>\$1158</b>

## D. Designation of Roles

- Team Leader- Daniel Kelly
- Deadline Manager- Mikayla Mazur
- Minute Taker- Cedric Ramos Silva
- iGroups Modifier- Sandra Menezes
- Conflict Manager- Samiat Jinadu
- Agenda Setter- Daniel Kelly