Software Project Deliverable 1
Buckle Up Inc.
Smart Aqua

Team Number

Group 6

Student's names and ID's

Alvaro Rodrigo Chavez Moya   N01455107
Denis Shwaloff   N01422583
Nicholas Dibiase   N01367109
Paolo Adrian Quezon   N01424883

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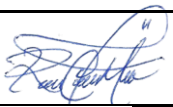
Team Contract

Team Name: **BuckleUp Inc.**
Team Number: **6**
Project Name: **Smart Aqua Project**

Please negotiate, sign, scan and include as the first section in your Deliverable 1.

Please note that if cheating is discovered in a group assignment each member will be charged with a cheating offense regardless of their involvement in the offense. Each member will receive the appropriate sanction based on their individual academic honesty history.

Please ensure that you understand the importance of academic honesty. Each member of the group is responsible to ensure the academic integrity of all of the submitted work, not just their own part. Placing your name on a submission indicates that you take responsibility for its content.

Team Member Names (Please Print)	Signatures	Student ID
Project Leader: Denis Shwaloff		N01422583
Alvaro Rodrigo Chavez		N01455107
Nicholas Dibiase		N01367109
Paolo Quezon		N01424883

For further information read Academic Honesty Policy on
https://humber.ca/legal-and-risk-management/policies/search-by-students.html.

By signing this contract, we acknowledge having read the Humber Academic Honesty Policy as per the link below. https://academic-regulations.humber.ca/2018-2019/17.0-ACADEMIC-MISCONDUCT

<u>Responsibilities of the Project Leader include:</u>

- Assigning tasks to other team members, including self, in a fair and equitable manner.
- Ensuring work is completed with accuracy, completeness and timeliness.
- Planning for task completion to ensure timelines are met
- Any other duties as deemed necessary for project completion

What we will do if . . .

Scenario	Accepted initials	We agree to do the following
Team member does not deliver component on time due to severe illness or extreme personal problem	A R C DS ND PG	a) Team absorbs workload temporarily __ b) In case the team member does not deliver it, workload will be equally split with the rest of the team members ✓
Team member cannot deliver component on time due to lack of ability	A R C DS ND PG	a) Team reassigns component __ b) Team helps member ✓ c) Team "fires" team member by not permitting his/her name on submission __
Team member does not deliver component on time due to lack of effort	A R C DS ND PG	a) Team absorbs workload __ b) Team "fires" team member by not permitting his/her name on submission __ c) Team attempts to help member ✓

Team member does not attend team meeting	A R C DS ND PG	a) Team proceeds without him/her and will assign work to the absent member ✓ b) Team doesn't proceed and records team member's absence __ c) Team proceeds for that meeting but "fires" member after __ occurrences __
An unforeseen constraint occurs after the deliverable has been allocated and scheduled (a surprise test or assignment)	A R C DS ND PG	a) Team meets and reschedules deliverable __ b) Team will cope with constraint c) Team will try to finish as much work as possible from the deliverable ✓
Team cannot achieve consensus leaving one member feeling "railroaded", "ignored", or "frustrated" with a decision which affects all parties	A R C DS ND PG	a) Team agrees to abide by majority vote __ b) Team flips coin __ c) Team meets and split equally work again until all parties are satisfied ✓

Team members do not share expectations for grade desired	A R C DS ND PG	a) Team will elect one person as "standards-bearer" who has the right to ask that work be redone ✓ b) Team votes on each submission's quality __ c) Team will ask for individual marking and will identify sections by author __
Team member behaves in an unprofessional manner by being rude or uncooperative	A R C DS ND PG	a) Team attempts to resolve the issue by airing the problem at team meeting ✓ b) Team ignores behaviour __ c) Team agrees to avoid use of all vocabulary inappropriate to the business setting __ d) Team fires the team member.
Team member assumes or requests that his/her name be signed to a submission but has not participated in production of the deliverable	A R C DS ND PG	a) Team agrees that this is cheating and is unethical __ b) Friends are friends and should help each other __ c) That person name will not be put on the submission. ✓

There is a dominant team member who is content to make all decisions on the team's behalf leaving some team members feeling like subordinates rather than equal members	A R C DS ND PQ	a) Team will actively solicit consensus on all decisions which affect project direction by asking for each member's decision and vote __ b) Team will express subordination feelings and attempt to resolve issue ✓__
Team has a member who refuses to participate in decision making but complains to others that s/he wasn't consulted	A R C DS ND PQ	a) Team forces decision sharing by routinely voting on all issues __ b) Team routinely checks with each other about perceived roles __ c) Team discusses the matter at team meeting ✓__

Team Signature List

Alvaro Rodrigo Chavez Moya	Denis Shwaloff	Nicholas Dibiase	Paolo Adrian Quezon
		ND	P Adrian

Google Play Developer Account

Account type   Personal. Change account type

Developer account ID ⑦   8895702206581754292

Contact name ⑦

Denis Shwaloff

ⓘ **Your ID has been verified**   ⌃
May 24, 2023 11:24

Your ID verification was successful. You can now publish apps on Google Play.

GitHub Repository Link
https://github.com/DenisShwaloff2583/SmartAqua.git

GitHub Invitation

Project Background and Description

Project Background

Our team recognized the importance of effectively tracking and controlling water systems to ensure water quality and minimize damage and costs. While options online to help with this (like quality data trackers or remote control) exist, they often feel disjointed, lacking additional features and requiring users to navigate multiple trackers or websites. To address this issue, we are developing software that integrates necessary and complementary functionalities into a single, neat, and accessible platform. Paired with a dedicated device, our end product will streamline water system management, providing real-time data tracking, remote control capabilities, and centralized information access. Our goal is to simplify monitoring, enhance decision-making, and optimize water system performance, ultimately offering a comprehensive and cost-effective solution.

Project Description

In order to improve the health and management of water condition in aquariums and other water systems, the Smart Aqua project intends to create a cutting-edge technology that enables smart automation of real-time monitoring with remote control capabilities. Our technology will help users efficiently monitor and regulate important variables, such as water cleanliness and temperature, in order to establish and maintain desired water environment by utilizing the Android application. The project's success will be determined by the software's capability to achieve goals outlined above. The target audience for this project includes from pet fish owners to establishments managing various water systems, such as aquariums and water environments in pet stores and swimming pools, where maintaining an ideal water quality presents challenges due to the large number of tanks, limited expertise, the size of water enclosures, or inability for consistent manual check-ups.

Project Scope

The main goal is to offer a full range of functions that allow real-time monitoring of vital water properties. Users will be able to stay up to date on the water quality and make informed choices thanks to the data's straight forward display within the app. Tasks, like requirement gathering, UI/UX design, database design, and integration of numerous sensors and actuators for data collecting and system control, are all part of the software development process. To maintain versatility and adaptability to changing project needs, we will use Agile Methodology for development approaches.

Additionally, the project will use an iterative development approach to guarantee constant improvements to the Smart Aqua Android app. The functionality and user experience of the app may be tested, evaluated, and changed internally thanks to this process. The app's general functionality and usability will be refined through frequent upgrades and feature additions. The project team will collect feedback and information from internal testing and assessments using this iterative development method. The areas that may be worked on and any problems or difficulties that may arise during the development process will be addressed using these suggestions. The project intends to develop a solution that satisfies the project's goals and objectives by continually developing and improving the app's features and capabilities.

The Smart Aqua Android application development project will be considered complete when all goals have been met and set acts have been properly carried out. This includes creating and testing the app completely to make sure it complies to the set of guidelines and standards. Real-time monitoring, automatic alarms and management of water treatment and filtration systems are just a few examples of the components that must be successfully implemented in order for the project to be marked as finished.

The stability, functionality, and user-friendliness of the Smart Aqua android app will also be tested and evaluated before considering completion. To ensure wider consumption, compatibility testing will be carried out to confirm its function on other Android devices.

Project Layout

Navigation Drawer

Usage: Applications with a hierarchical structure and several screens or sections frequently use the Navigation Drawer. It offers a hidden menu with navigation choices that may be reached by swiping from the edge of the screen or by pressing an icon.

Use cases: To organize and offer access to various areas or features of an app, the Navigation Drawer is frequently used in social media, news, and e-commerce apps like Facebook, CNN, and Amazon. These apps have complex navigation structures.

Bottom Navigation

Usage: The bottom navigation bar is used to show the main navigation options. When an app contains between three and five top-level destinations, it offers easy access to important app parts or features.

Use cases: Bottom navigating is frequently used for seamless navigating between main functions in apps that profit from having persistent and quickly available navigation options, such as messaging apps (such as WhatsApp), productivity apps (such as Trello), or media streaming apps (such as Spotify).

Tabs

Usage: Within an application, tabs let users switch between various perspectives or content categories. By tapping on the respective tab, users can quickly transition between each tab's associated area or group of information.

Use cases: Tabs are frequently used to organize and navigate between distinct categories of information in apps that offer different sets of content or views on the same screen, such as news apps (such as The Guardian), weather apps (such as AccuWeather).

Why is the Navigation drawer is better?

Applications with a larger number of screens or sections and a hierarchical structure work well with the Navigation Drawer. It offers a practical method to arrange and access the app's various parts or functionalities.

Project Themes

KEEP THE USER INFORMED ON THE WATER CONDITION

MONITOR WATER CONDITION REMOTELY

READ DATA FROM DB	STORE THE DATA	DISPLAY THE DATA COLLECTED
CONNECT TO DB	RETRIEVE DATA FROM DB	STORE DATA IN APPLICATION
READ DATA IN DB	SEND VALUES TO APPLICATION	DISPLAY DATA
SEND DATA	RETRIEVE VALUES IN APPLICATION	UPDATE DISPLAYED DATA

NOTIFY USER ON WATER CONDITION

ANALYZE THE DATA	LOG THE ANALYSIS	SEND THE USER AN UPDATE
READ COLLECTED DATA	CHECK FOR CRITICAL VALUES	RETRIEVE THE STORED LOG
COMPARE RETRIEVED VALUES TO STANDARDS	LOG THE CRITICAL VALUES	COMPILE A MESSAGE WITH THE CRITICAL VALUES LOG
OUTLINE CRITICAL VALUES	STORE THE CRITICAL VALUES LOG	SEND THE MESSAGE

KEEP USERS' WATER IN THEIR TANK CLEAN

PERFORM TESTS ON THE WATER CONDITION OF THE TANK

DIAGNOSE THE WATER	STORE THE DATA	CONFIGURE DB VARIABLES
CONNECT TO SENSORS	RETRIEVE DATA IN DB	MAKE VARIABLES ACCORDING TO TYPE OF DATA STORED
RETRIEVE THE DATA	UPDATE VALUES IN DB	FILL TABLES WITH VARIABLES
SEND DATA TO DB	STORE UPDATED VALUES IN DB	ORGANIZE VARIABLES IN LOGICAL MANNER

CREATE A DATABASE TO STORE SENSOR DATA

SETUP DATABASE	SETUP DB TABLES	SETUP DB VARIABLES TO STORE DATA
EVALUATE WHICH TYPE OF DB TO USE	CREATE TABLES TO STORE VARIABLES	CREATE VARIABLES ACCORDING TO TYPE OF DATA STORED
CREATING AN EMPTY DATABSE	ORGANIZE TABLES TO THEIR RESPECTABLE SENSOR	FILL TABLES WITH VARIABLES
CREATE FUNCIONALITY TO PULL DATA FROM SENSORS	FILL DB TABLES WITH VARIABLES	ORGANIZE VARIABLES IN LOGICAL MANNER