Models: 001.ab772c

**RoboDog Shopping RoboCart Management System
Almost Games Ltd.**

DRAFT FOR EVALUATION PURPOSES ONLY

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Introduction

RoboDog, a system that handles the transport of full and empty carts to and from shoppers in various brick and mortar stores. The systems aims to make the shopping system more efficient by allowing users to send the chosen goods to the checkout stations while shopping for other goods thereby increasing store profits and customer satisfaction.

RoboDog delivers empty carts to users which make a request, taking their full carts to the checkout station. To do this, it must pinpoint the customer's location relative to the cart and keep track of obstacles in the store for which the cart must avoid. A mobile app will be the customer's main point of interaction for the system, allowing them to call and dismiss carts, provided that the pre-conditions set out in this document hold. The application will communicate with a central control station located within the premises which manages both the carts and users endpoints.

How to use the system

The following sections explain how to use the RoboDog and Servr system. Users of the system, please refer to the section entitled "Users". Store management, please refer to the section entitled "Store Management".

Users

Users of the system are store shoppers intending to interact with the system.

Getting Started

Before starting use of the system, users are encouraged research the product and determine if it is compatible with their intended stores. Consult your doctor if you are concerned that the system may impose a health risk.

Downloading the App

To begin using the system, the "Servr" application must be downloaded from the Google Play Store to the user's smartphone.
1. Open Google Play Store, in the search bar type: **Servr**
2. Select the "Servr" application and select install
3. After Installation, open the application, carefully read the user agreement and select "agree"

Entering the Store

The application is only useful while physically in a store utilizing the RoboDog system.
1. Enter a store using the RoboDog system
2. Open the application
3. The application will link to the store and the in-app status bar will display the store name

Requesting an Empty RoboCart

Users can use the application to have an empty RoboCart delivered to their location in the store.
1. Open the "Servr" application
2. Press the **scanner** button
3. Position the phone near one of the many position nodes located in the store aisles.
4. Wait for a confirmation signal
5. One of two cases will occur depending on the user's current state
   Case 1: The user does not have a linked RoboCart
   An empty RoboCart will be delivered to the users location
   Case 2: The user has a linked RoboCart
   The system will assume the user's linked RoboCart is full and automatically dispatch it. An empty RoboCart will then be delivered to the user's location.

Dispatching a Full RoboCart

A full RoboCart can be dispatched in two ways, the first is by requesting a new empty RoboCart as illustrated in section "Requesting an Empty RoboCart", The second by interacting with the cart.
1. Open the "Servr" app
2. Press the **scanner** button
3. Position the phone near the node located on the RoboCart
4. Wait for a confirmation signal
5. The RoboCart will now drive to the checkout area

Checking Out

When the user is ready to check out he or she must approach the checkout station request his or her checked shopping carts then continue checkout as normal.
1. Approach the checkout station
2. Open the "Servr" app
3. Press the **scanner** button

4. Position the phone near the node located on the checkout station
5. You will then be prompted with a list of RoboCarts you have checked, select the ones you wish to be delivered to checkout
6. Upon receiving the carts, continue to checkout as normal

Store management

Store management is the person or organization that will hold administration of the system.

Getting Started

Stores intending to use the RoboDog system must follow the order instruction to get the system.
1. Send a blueprint of the store intending to use the system to Almost Games. The blueprint must contain all aisles and major object and must be to scale of the store.
2. A confirmation notice will be sent to you, with a mockup of the system setup in the store.
3. If pleased with the mockup, place an order for the system using the order number in the confirmation notice.
4. Allow 4-8 weeks for shipping.

Setting Up

Upon receiving the package, follow the setup instructions precisely to set up the system.
1. Open the package and remove the components. Insure that the package contents match the placed order.
2. Remove the position nodes out of their packaging. Each node has a reference number, place the nodes in aisles throughout the store such that the node placement matches that of the included store blueprint. It is recommended to secure the nodes to a stationary object. Turn the nodes on after placement.
3. An in store computer connected to the internet must be configured to run the central control program. Download and install the program from the link provided in the package.
4. The system default comes with 5 shopping cart robots. Remove the robot from the packaging and construct them as per the included instructions. Turn the robots on.
5. Setup the charging area in the designated storage area specified in the included blueprint.

Starting the System

After setting up all included components, run the central control program and press **start system**, the system should then automatically sync to all components in the store and start the system. The system is ready for use after the initialization. See "Troubleshooting" for help with issues.

System Maintenance

General system maintenance will need to be performed on the RoboCarts. The robots will charge themselves automatically, but other maintenance task will have to be performed manually. The changing of oil and mechanical faults can be performed by a trained mechanic.

Do not attempt to tamper with the robots in any area labeled "Do not Tamper", doing so will void the warranty on the system. If a robot is believed to be malfunctioning consult Almost Games customer service.

Data and Analytics

The RoboCarts system actively collects data on system components and customer usage. The data is made viewed in user friendly data plots and statistics trends. The data is also made available as a raw feed for users who wish to use their own analysis techniques.

Sample Interactions

An intuitive way to envision how the system operates is to think of the system as if it were another person whom the user was talking to. Under this assumption, the following are sample dialogs which explain the overall operation of the system:

Scenario 1 :   The user requests an empty RoboCart to user's location. The system has found an empty RoboCart and sends a confirmation to the user.

User: Please send a RoboCart. Here is my location.

System: Please wait. A RoboCart has been dispatched to your location.
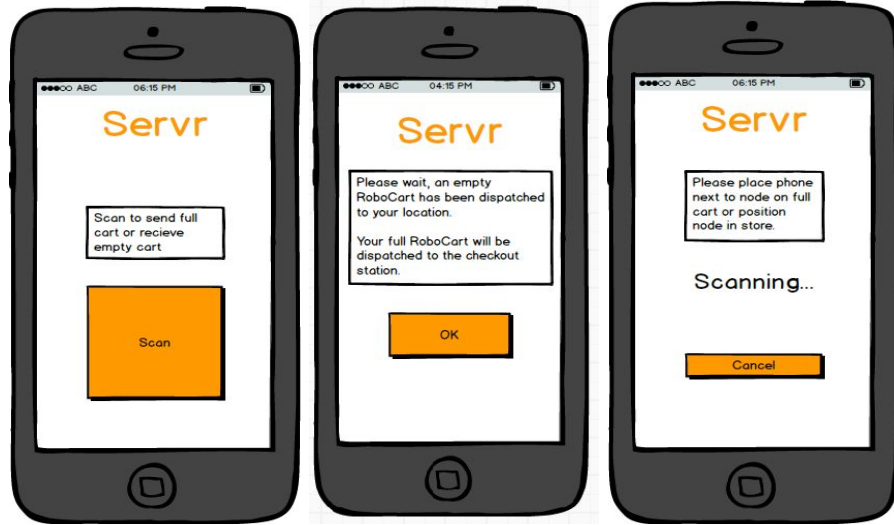
Scenario 2:   The user requests an empty RoboCart to user's location. There are no empty RoboCarts available, the system will notify the user and ask if (s)he would like to put in a queue.

System: All of the available shopping RoboCarts are in use. Would you like to be notified when there is one available?
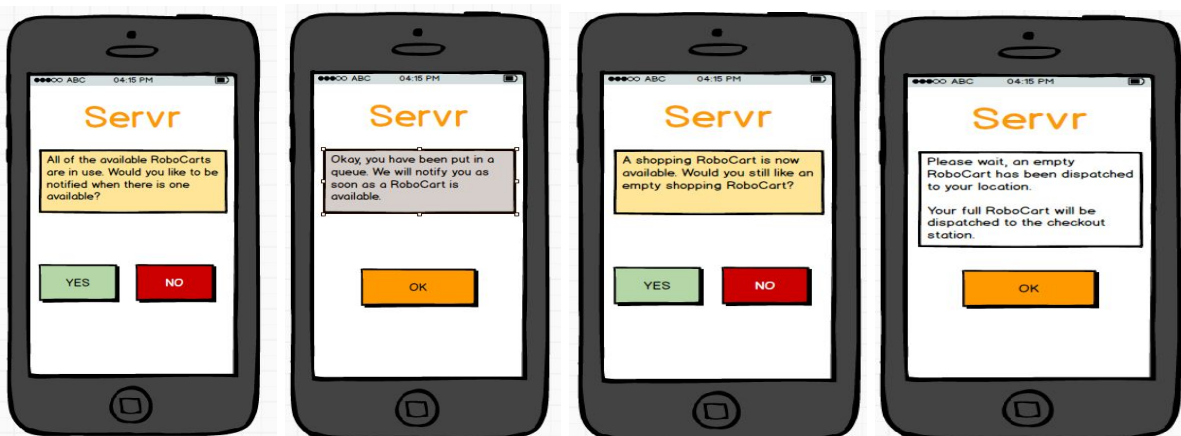
User: Yes

System: Okay, you have been put in a queue. We will notify you as soon as a RoboCart is available.

When an empty cart has been found, the system notifies the user.

System: A shopping RoboCart is now available. Would you still like an empty shopping RoboCart?

User: Yes.

System: Thank you. A RoboCart has been dispatched to your location.

Scenario 3: The user requests an empty RoboCart to user's location. Given that the system dispatches an empty RoboCart to the user's location and has sent a confirmation about the dispatch, the full RoboCart (the user currently has) dispatches towards the checkout station. The system notifies the user about the full RoboCart's dispatch.

User: (Clicks OK from the confirmation on empty RoboCart being on the way)

System: Thank you. Your full RoboCart will be dispatched to the checkout station. Your
   items will be ready for you at checkout.
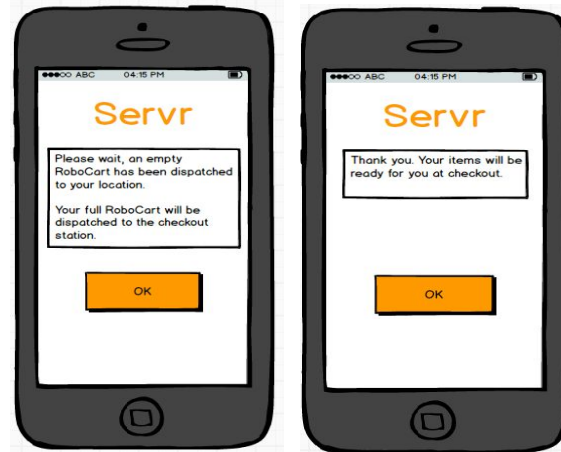
Scenario 4: The user is done shopping and does not require any additional empty RoboCart. The user swipes the RoboCart and system prompts the user for dispatch to the checkout station.

User : I am done shopping. (Swipes the phone on the RoboCart)

System : Would you like to go to the checkout station now?

User : Yes.

System: Thank you for shopping with us. Your full RoboCart will be dispatched towards the checkout station now. Please follow your RoboCart to the station.
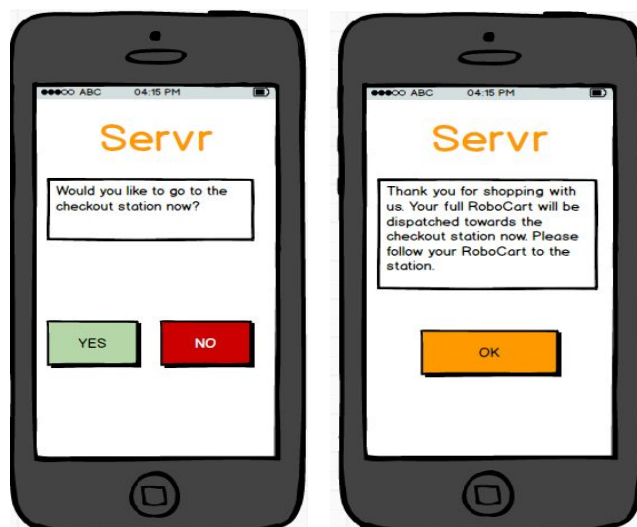
Scenario 5 : When the user is done shopping and at the checkout station, they will be asked by the cashier if they had any additional RoboCarts. If they have had previous RoboCarts, they will be added to the total cost, and returned to the customer.

Cashier: Hi, thank your purchase. Did you have any other RoboCarts during your shopping experience with us?

User: Yes, here is my phone.

Cashier: Okay, I've let the system know that the RoboCarts should be returned to you, and added their total to your final price. How would you like to pay?

From that point on, the dialogue would remain the same as it is in grocery stores today, except that the full RoboCarts that the user sent away would be returned to the user.

Known Bugs

- RoboCart may become stuck after detecting collision.
- RoboCart may not accurately arrive at the intended location.
- RoboCart may get stuck in parking lot, unable to find a way back to the store.
- RoboCart may get a mechanical fault for no reason.
- System server may go offline.

Troubleshooting

Problem	Cause	Action
Central control system does not start	1. The system is not connected to power 2. The system may not be powered on 3. The system may not be connected to the store's local area network 4. There may be no RoboCarts connected to the central control system (See "RoboCart will not connect to central control system") 5. There is no requests made by clients.	1. Ensure the central control system is firmly connected to power. 2. Ensure that the central control system "on light" is lit. If the light is not lit, press the power button on the central control system. 3. Ensure that the central control system "network active" light is lit. If the light is not lit, please connect an ethernet wire connected to the local network to back of the device. 4. Ensure that there is at least 1 "RoboDog" RoboCart connected to the same network as the central control system. (See "RoboCart will not connect to central control system") 5. Ensure that a request for a RoboCart exists by using the "Servr" application.

RoboCart will not connect to central control system	1. The central control system is not on. (See "central control system does not start"). 2. The RoboCart is not powered on. 3. The RoboCart does not have sufficient battery power. 4. The store's local area network does not have proper coverage of the store area 5. The RoboCart has not been setup for the local area network. 6. The RoboCart has not been registered for the store	1. Ensure that the central control system "on light" is lit. (See "central control system does not start"). 2. Ensure that the RoboCart "on light" is lit. If it is not, press the power button on the RoboCart. 3. Plug the RoboCart into the patented "RoboCharger" (sold separately). 4. Ensure that the network setup at the store properly covers the operation area of the Servr system with a wireless connection to the store's network. 5. Please contact our sales representative to request setup of the RoboCart to the local area network. 6. Please contact our sales representative to request registration of your RoboCart.
RoboCart does not find a path to the user when requested	1. The path from the RoboCart to the request location is blocked. 2. The store layout has changed since last system operation. 3. Store layout has not been programmed into central control system.	1. Ensure that there is a clear path from the RoboCart to the request location within the RoboCart operation area. 2. Ensure the store layout has not changed since last successful operation. If it has, please contact your sales representative to request reprogramming of store layout into central control station. 3. Contact our sales representative to request programming of the store layout into the central control station.
RoboCarts follow inefficient paths	1. The efficient path is contained within the operation area. See also causes for "RoboCart does not find a path to the user when requested".	1. If the efficient path is not completely contained in the operation area, please contact our sales representative to request enlarging of operation area.
Application does not run on phone	1. Phone is not supported by "Servr" application. 2. Phone is running Android 4.0 or later 3. Phone has been tampered with or "jailbroken". 4. Application is not properly installed See also causes for "Application does not recognize current store"	1. Purchase a phone compatible with the "Servr" application. 2. Ensure that phone is running Android 4.0 or later. If it is not, please update the phone according to instructions from manufacturer. 3. Use an untampered phone. 4. Install the "Servr" application. Please see "Getting Started" in this manual.
Application does not recognize current store	1. GPS is not on and phone is not connected to the store network. 2. Phone is not connected to internet. 3. Store is not properly registered with Servr.	1. Ensure that phone has GPS ability, and GPS is enabled. Please follow the instructions of your phone manufacturer to enable GPS. If the phone does not have GPS ability, connect the phone the store's network, if available. 2. Ensure that the phone is connected to internet. If it is not, connected the phone to the internet as instructed by your phone manufacturer. 3. Please contact our sales representative to ensure that store has been properly registered with Servr.