

# User Interface for the Physically Impaired



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# Introduction

**Growing population of older adults**

**40.3 million**

**5 Million Americans living with Alzheimer's**

**Costing \$214 billion to the nation**

**1 in 3 senior citizens die with Alzheimer's  
or other form of dementia**

**2.3 Million with Multiple Sclerosis**

**16 Million with Cognitive Impairment**

**Declining numbers of students majoring in  
Computer Science**



# Mobile Applications



## Injectify

- Mobile application for personalized injection reminder



## Pictural

- Mobile application for reminiscence therapy



## MemoryBox

- Busyboard for late stage dementia patients



## Silver Cross

- Caregiver support



# Injectify App

- ***Injection App*** – Mobile application designed to help MS patients as well others requiring daily or regular drug injections to track injection sites
- ***Problem*** – MS Focus groups have indicated that patients requiring daily or frequent self-injection need to be careful in order to avoid consecutive same-spot injections
  - can affect their health
- A service-learning project empowered by students

# Background: MS Facts

**2,300,000  
Worldwide  
Sufferers**

**400,000  
in the U.S.**

**200+  
Diagnoses/week**

- **MS causes damage to the Central Nervous System**
- **Symptoms include, but are not limited to:**
  - **Fatigue**
  - **Memory loss**
  - **Visual disturbance**
  - **Altered sensation**
  - **Difficulties with mobility & dexterity**

# Solution: Injectify

- **Calendar for recording date & injection areas**
  - Injection spots have image & name for easy ID
  - Feedback to user after injection & reminder of next upcoming injection
- Displays *discreet* & *customizable* injection reminders for pre-set times throughout day
- Creates the ability for the patient to bring this crucial data to their physician
  - Helping to report & reduce side effects/symptoms
- National MS Society supports this project & provides weekly (since Fall 2014) feedback with future marketing on their social media blasts, as well as newsletters



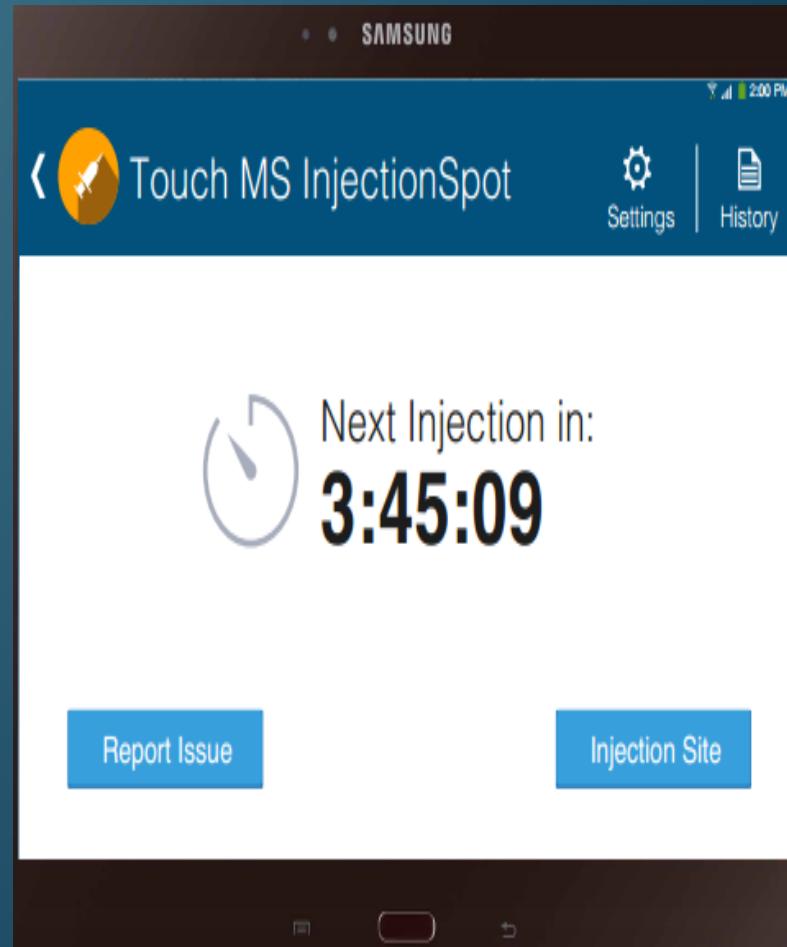
# Solution Highlights

- **Design**
  - Focus on Vision, Color, & Clarity
  - Ease of navigation
  - Restricted number of touches
- **Universal functionality**
  - Supports both Android & iOS
- **Testing**
  - Visit MS centers to gather user input & feedback



# Injectify-Target Audience

- Multiple Sclerosis (MS) patients
- Anyone requiring regular self-injections
- Physicians
- Pharmaceutical Companies
- Caregivers



# Business Model

## Individual Model

- One time purchase
- Cost of only \$4.99
- Lifetime license for the user

## Organization Model

- Service-style purchase (monthly/yearly payments)
- Priority support and hands-on learning
- Support for transitions to newer versions
- Cost of only \$99/month or \$1,100/year

**1<sup>st</sup> year income of ~\$573,850** (based on 5% market share)



# Competition

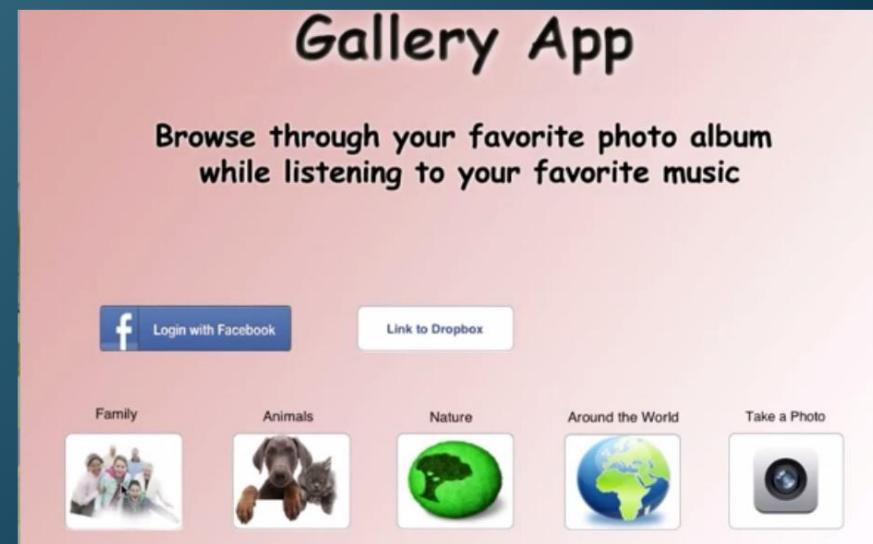
- Why is *Injectify* different?
  - Can be used for any medication => not specific to any particular drug
  - Provides instructions on how & **where** to inject
  - Ability to report side effects or symptoms of a certain drug
  - Students meet regularly with MS Support Groups & Homes for Feedback
- No easy/usable solutions exist on the Google Play or App Store

	<i>Injection App</i>	<b>COPAXONE iTracker</b>	<b>Injection Site Reminder</b>	<b>i-inject</b>
General Use	Yes	Yes	No	Yes
User Friendly	Yes	No	No	Yes
iOS	Yes	Yes	No	Yes
Android	Yes	Yes	Yes	No
Additional features	Yes	No	No	No
Available Worldwide	Yes	Yes	Yes	No
Frequent Updates	Yes	Yes	No	No



# Pictural

- Interactive pictures of loved ones
- Ability to upload and download photos as well as audio recordings through Facebook
  - Shows pictures and videos of their loved ones throughout the world
- Targeted towards those with cognitive disabilities such as Alzheimers and Dementia





# Pictural

- Creates the ability for the user to reminisce and recall important past memories missed in years gone by such as favorite activities
- Stimulates the brain in hopes to provide the user with a better quality of life by improving cognitive abilities
- Suitable for Advanced Dementia patients



# Competitor

- The only real competition is merely an idea rather than an application
- Remember Me - A simple flash

	<i>Pictural</i>	iTriage Health	CarePartners Mobile	Caregiver's Touch
User Friendly	Yes	Yes	No	Yes
Client Health History	Yes	Yes	Yes	Yes
Caregiver Info Syncing	Yes	Yes	Yes	Yes
Stress Meter	Yes	No	No	No
Elderly Schedule Sharing	Yes	Yes	Yes	Yes
Free	Yes	Yes	Yes	No



# Usability

- Simple to use
- Use of big buttons and font
- Limited number of clicks
- High-contrast colors
- Used as a daily companion
- Virtually unlimited memory due to cloud storage on Facebook
- Touchscreens are tactile and versatile





# Silver Cross

## Keeps consistent times and schedules

- ❑ Prevents users from forgetting important dates and times
- ❑ Shareable Data and Intake history

## Everybody gets notified

- ❑ Caregivers can assist one another and know each others' mood as well as elderly



# Highlights

- Simple & Unobtrusive
- Reminders
- Automatic Synchronization
- Voice Commands
- Caregiver Circle Scheduling
- Free





# Features

## Interactive Voice

- App can listen to and follow voice commands

## Caregiver Circle Scheduling

- Allows multi-person scheduling, with the ability to accept appointments

## Pill Reminders

- Will send reminders to the elder and the caregiver when it is time to take any medications

## Automatic Messages

- Can send pre-written messages, pictures, videos and more the elder at specified times

## Emotional Monitoring

- Silver cross will monitor the caregiver's usage of the app to detect any emotional changes and provide related resources to encourage the caregiver or alert someone within the circle



# Target Audience

- Family members
- Caregivers
- Friends
- Physicians





# Competition

## Why Silver Cross?

- ❑ Having caregivers watching over the elderly isn't enough, even the caregivers need to be cared for





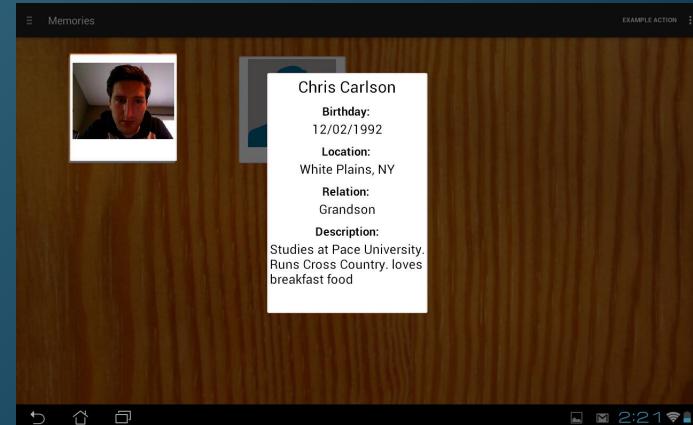
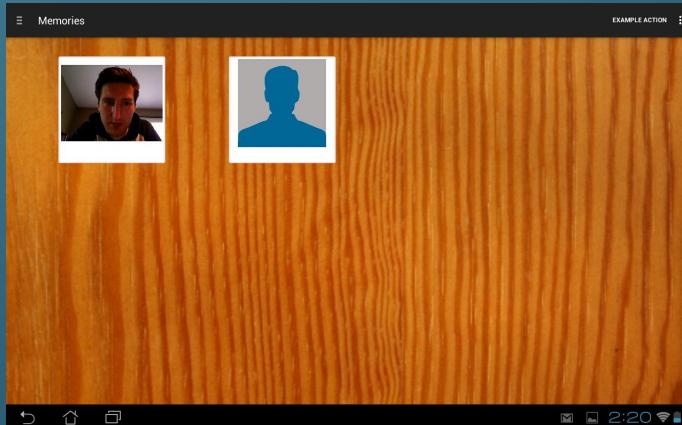
# Memory Box

***Memory App*** – This app will allow Alzheimer users to recall memories from their life. It will allow the user to travel to points in their mind where they have encountered different experiences.

The user can click on different images and see them come to life.

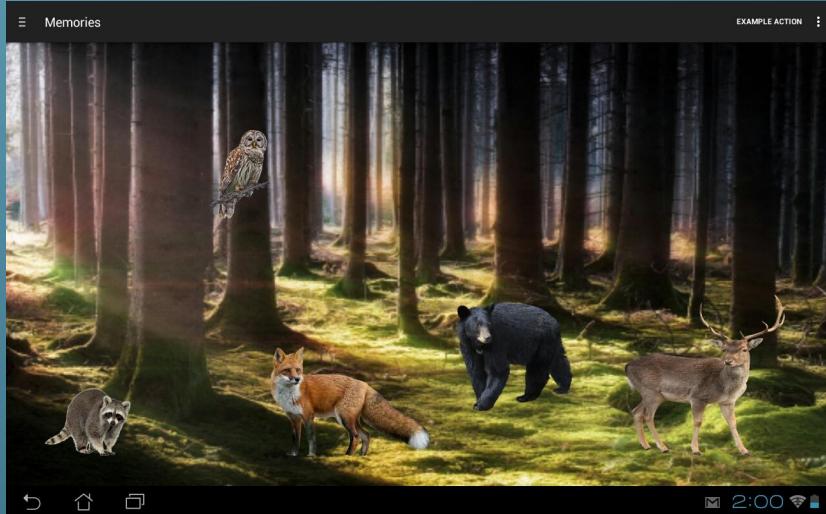
# MemoryBox- Functionality

- Placeholder for interacting with the scenes
- Different settings (Forest, Beach, Farm, etc.) allows the user to experience memories from their past
- Accurate vocals from the wild
- Helps the user remember loved ones and essential information about them

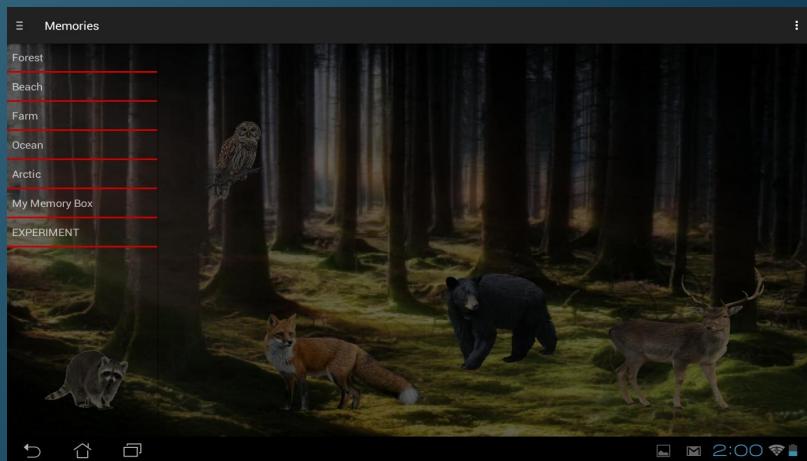




# Screen Shots



Different settings to select from along with a customizable frame found in the “My Memory Box” tab



Clicking the animals allows the user to hear real vocals and read a description of the respective animal





# Target Audience

- “Older adults” with cognitive impairments or memory loss
- Family members
- Caregivers



# Usability

- Simple to use
- User-friendly design
- High-contrast colors
- Can be used as a reminder of things
- Touchscreens are tactile and versatile