

START Application

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Who is START for?

- ▶ Small businesses, 10 to 400 employees
- ▶ Companies that cannot afford a high tier alert system
- ▶ Personal home use for families

The Graphical User Interface (GUI)

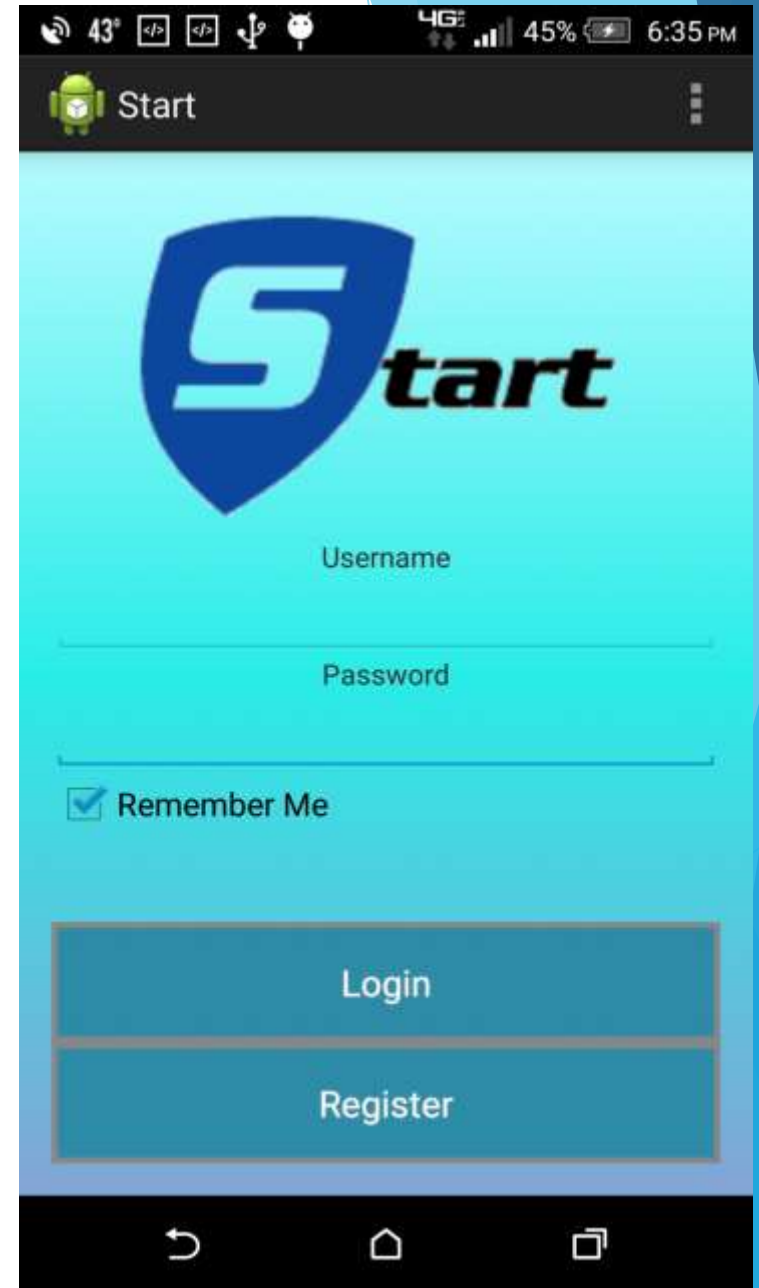
- ▶ Built with the idea of being simple and easy to understand quickly
 - ▶ Speed
 - ▶ Ease of Use
 - ▶ Easy to make the correct choices under high stress scenarios
- ▶ Our users will be involved in high stress or life threatening situations
 - ▶ The GUI could not be overcomplicated
 - ▶ The transitions and connections must be quick

The Activity

- ▶ The MainActivity holds no visual code, only logic code
- ▶ The connector of all the fragments (screens)
- ▶ All fragments must be connected through callbacks to the activity
- ▶ Based on the returned fragment callback ID the app will
 - ▶ Transition to the next fragment/screen
 - ▶ Update local files
 - ▶ Display an error

The Login Screen

- ▶ First screen the application shows
- ▶ Allows for creation of accounts or logins of previous users
- ▶ Send encrypted username and password through a PHP script to check for valid logins
- ▶ Allows users to save encrypted username and password for instant logins



The Register Screen

- ▶ Allows creation of new accounts
- ▶ Checks database against already existing accounts
- ▶ Send encrypted username and password to MYSQL database to save for later use
- ▶ Sanitizes input against blank and insecure passwords

Start

Start

Username

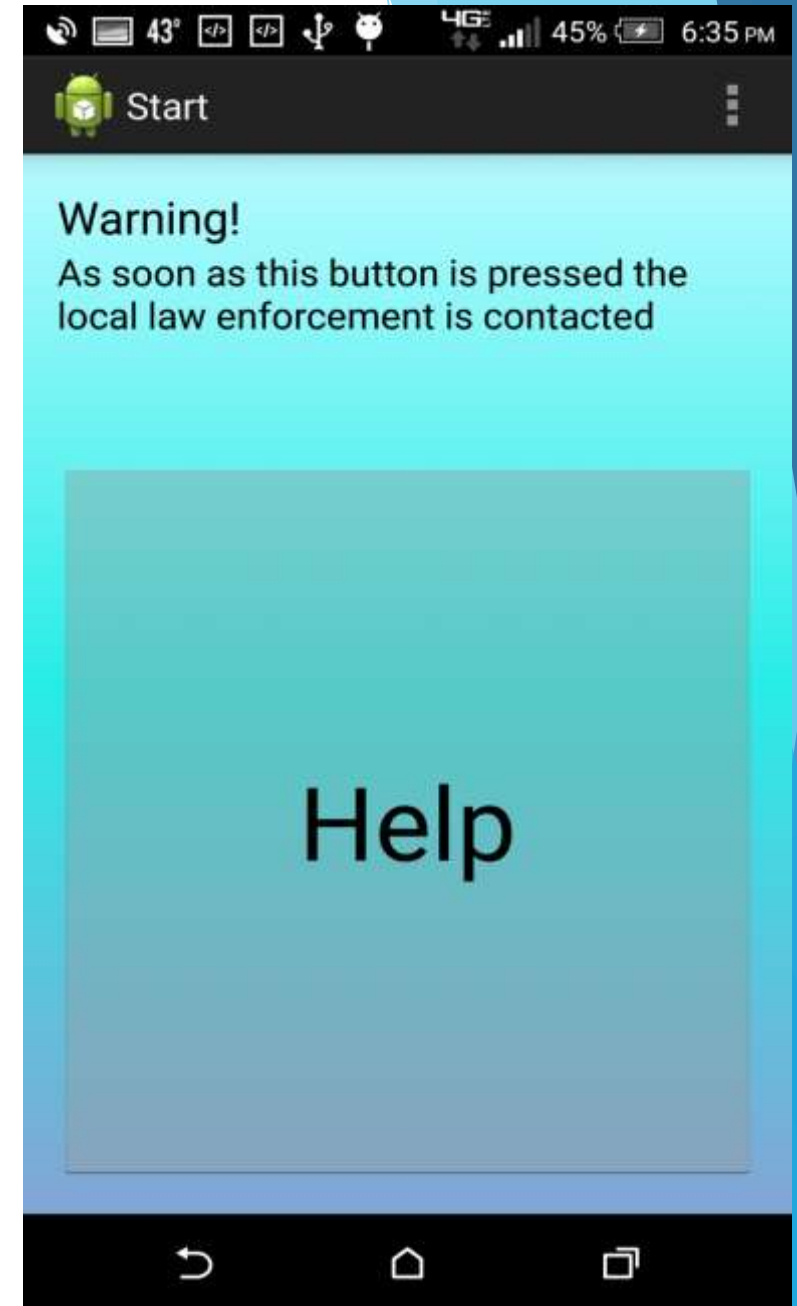
Password

Confirm Password

Register

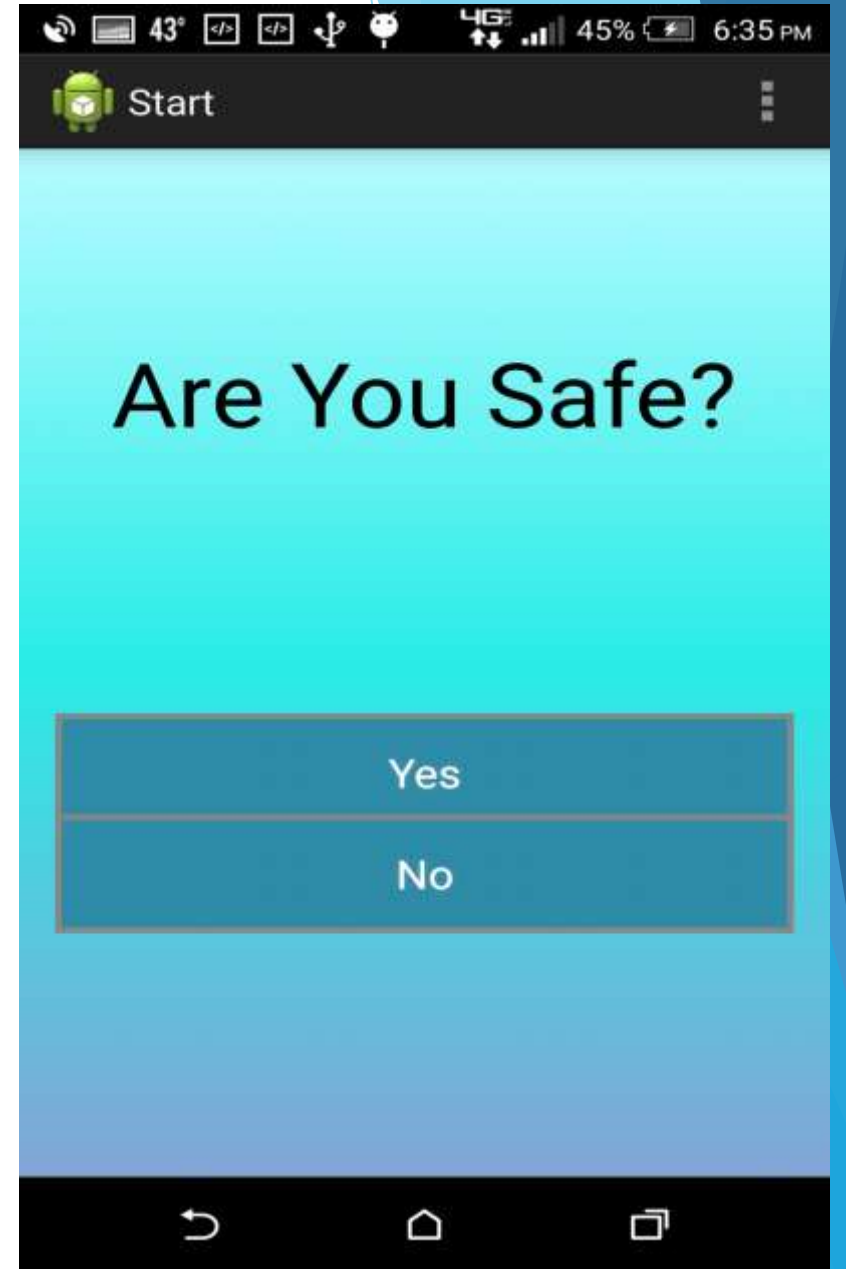
The Alert Screen

- ▶ The panic button
- ▶ Will initiate connection and immediately alert authorities of a situation
- ▶ Gathers GPS coordinates and sends them to quickly pinpoint the danger zone



The Safety Screen

- ▶ The main priority is keeping the user safe
- ▶ Assists the authorities in knowing more about the situation
- ▶ Help determine if the authorities are able to contact the user in other ways for more information



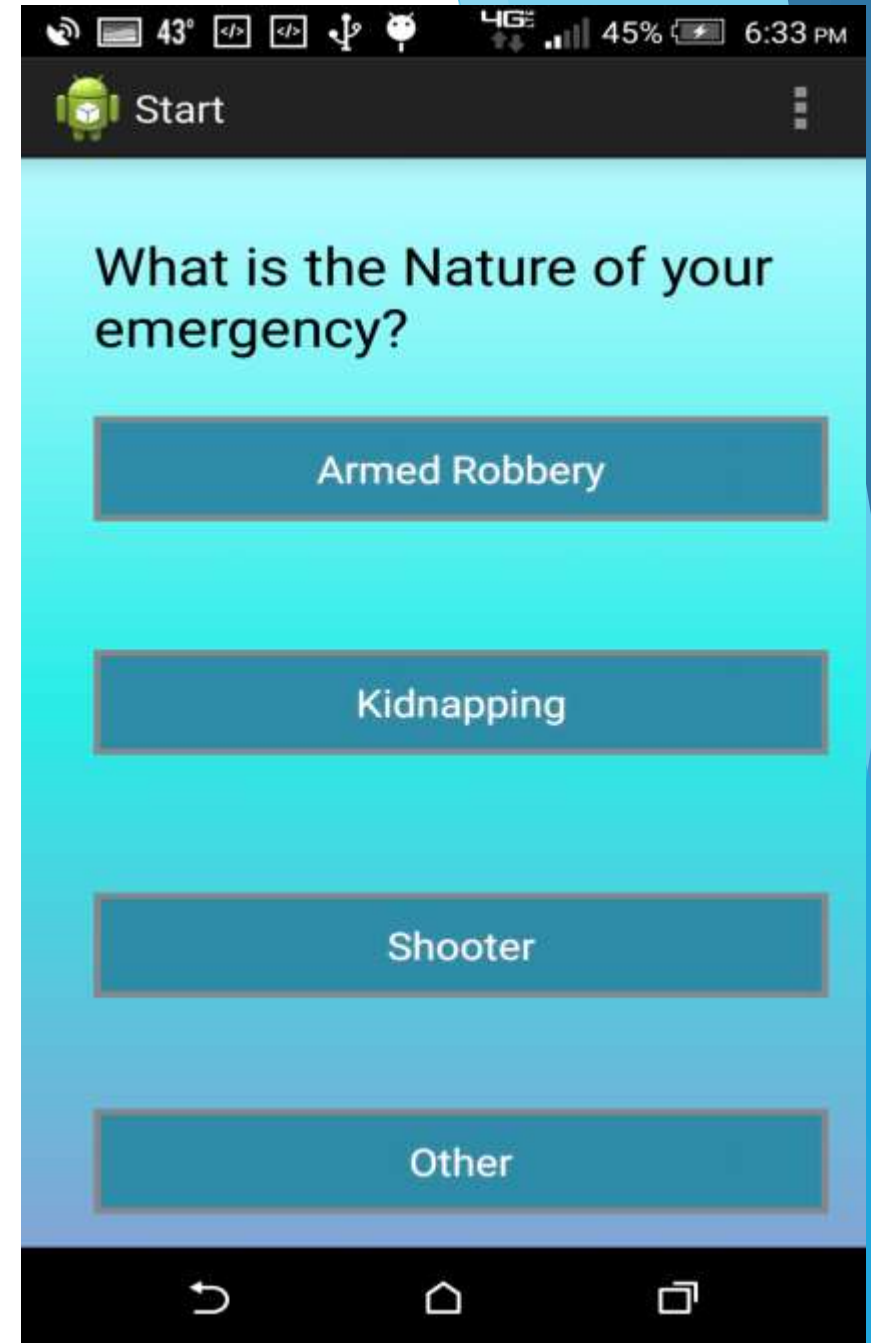
The Emergency Screen

- ▶ Helps determine the nature of the emergency to contact the correct authorities
- ▶ Easily changed depending on local police systems and needs
- ▶ Allows the authorities to respond correctly based on the situation



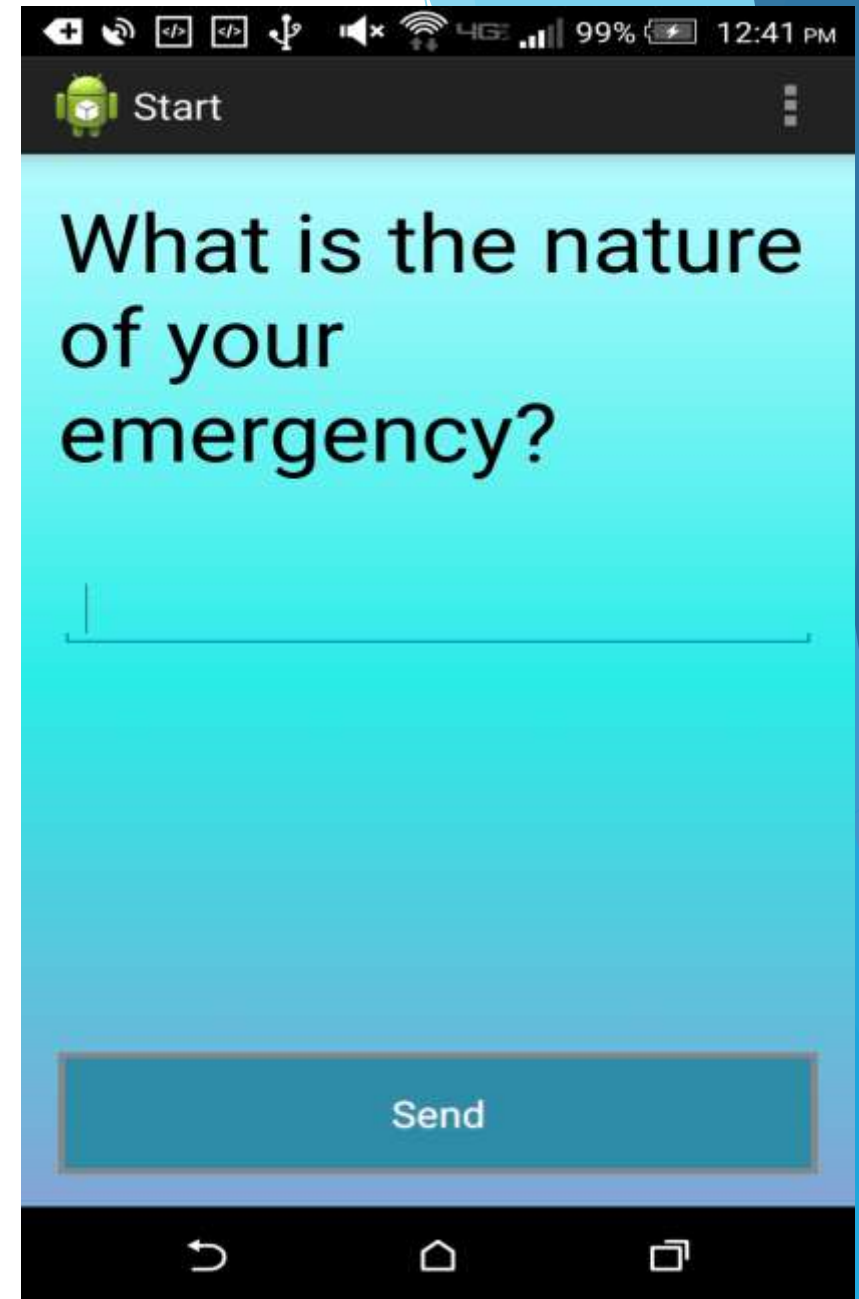
Example Template

- ▶ Specifically for a local police force interested in personal emergencies
- ▶ Easily understood and focused
- ▶ Still allows the authorities to respond correctly based on the situation



The “Other” Screen

- ▶ Extension of the emergency fragment
- ▶ Allows users to assist local authorities by offering more information if needed
- ▶ Allows users to offer different emergencies of the case is not listed



The Help Screen

- ▶ Displays the GPS coordinates for the user
- ▶ Reassures the user into knowing that assistance is coming
- ▶ Updates database with ongoing emergency details for current and future use



Apache PHP Server

3 Parts

- ▶ Resting Service running on a Apache Web Server
 - ▶ Always on 24/7 and as reliable as your Managed Service Provider
 - ▶ Fast, Simple and reachable from anywhere
- ▶ PHP Scripts
 - ▶ Relatively simple, and completes requests from Android Side in seconds
 - ▶ Accepts HTTP Post requests from Android Side and Web Interface
- ▶ MYSQL Database
 - ▶ Handles the tables for requests
 - ▶ Handles user locations, who to send alerts to, info, and other needs

Layout of the Database

Database:
projectstart

Distress

- Are You Safe?
- Type of the Distress
- GPS location
- User
- Cell Number
- Time received
- Time Resolved

UserInfo

- User
- Role
- Email
- Cellphone number back up
- Location
- Floor Number

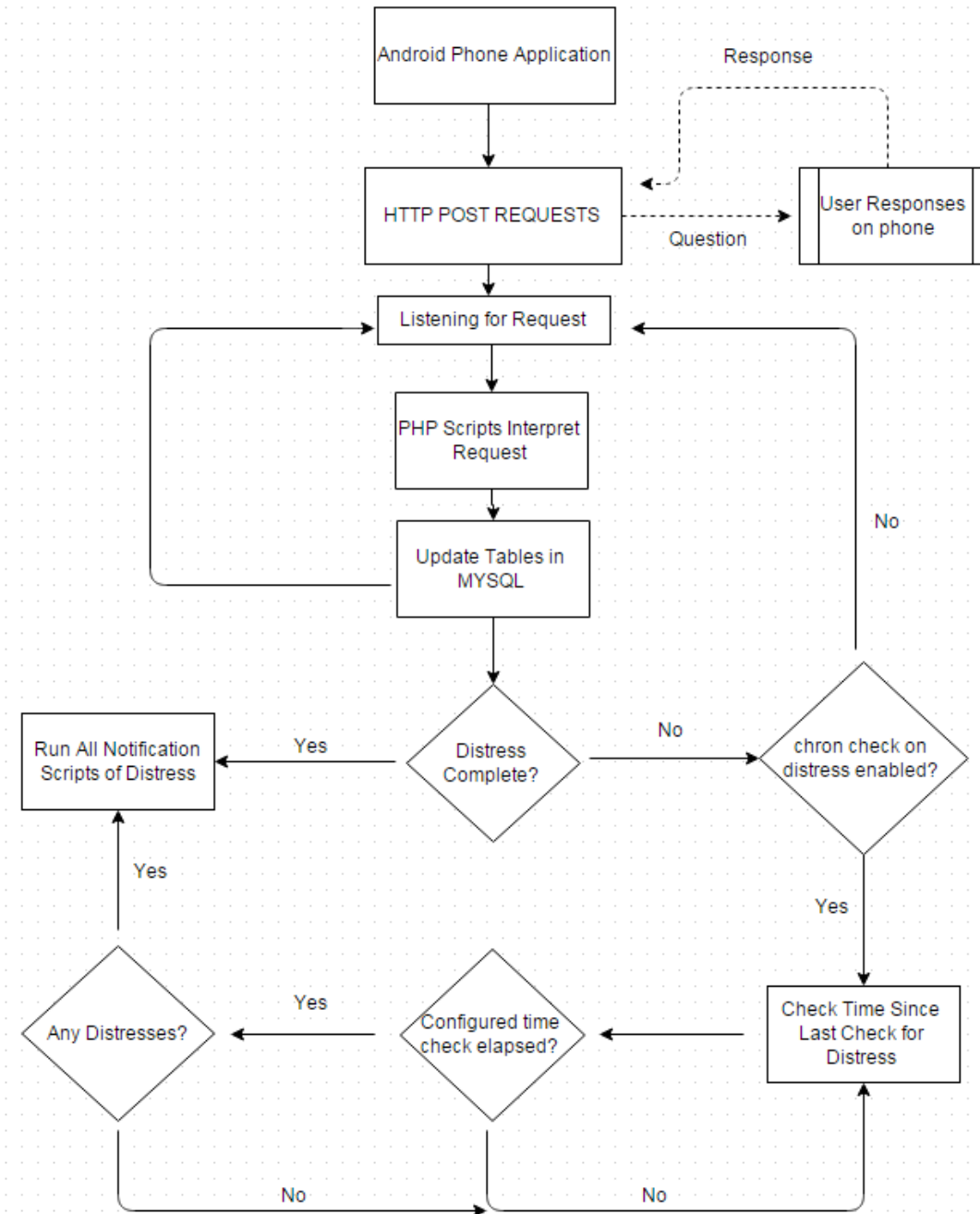
login

- username
- Stored Hash of Password

The Alerts

- ▶ Combination of PHP Scripts
 - ▶ Each script has a specific duty of alerting the user and interfacing with the tables
- ▶ Currently the alerts are in email and text message format
 - ▶ The PHP scripts will parse through the database
 - ▶ Automatically pull the phone, email, and locations from the database and notify all users
- ▶ Alerts immediately after the distress

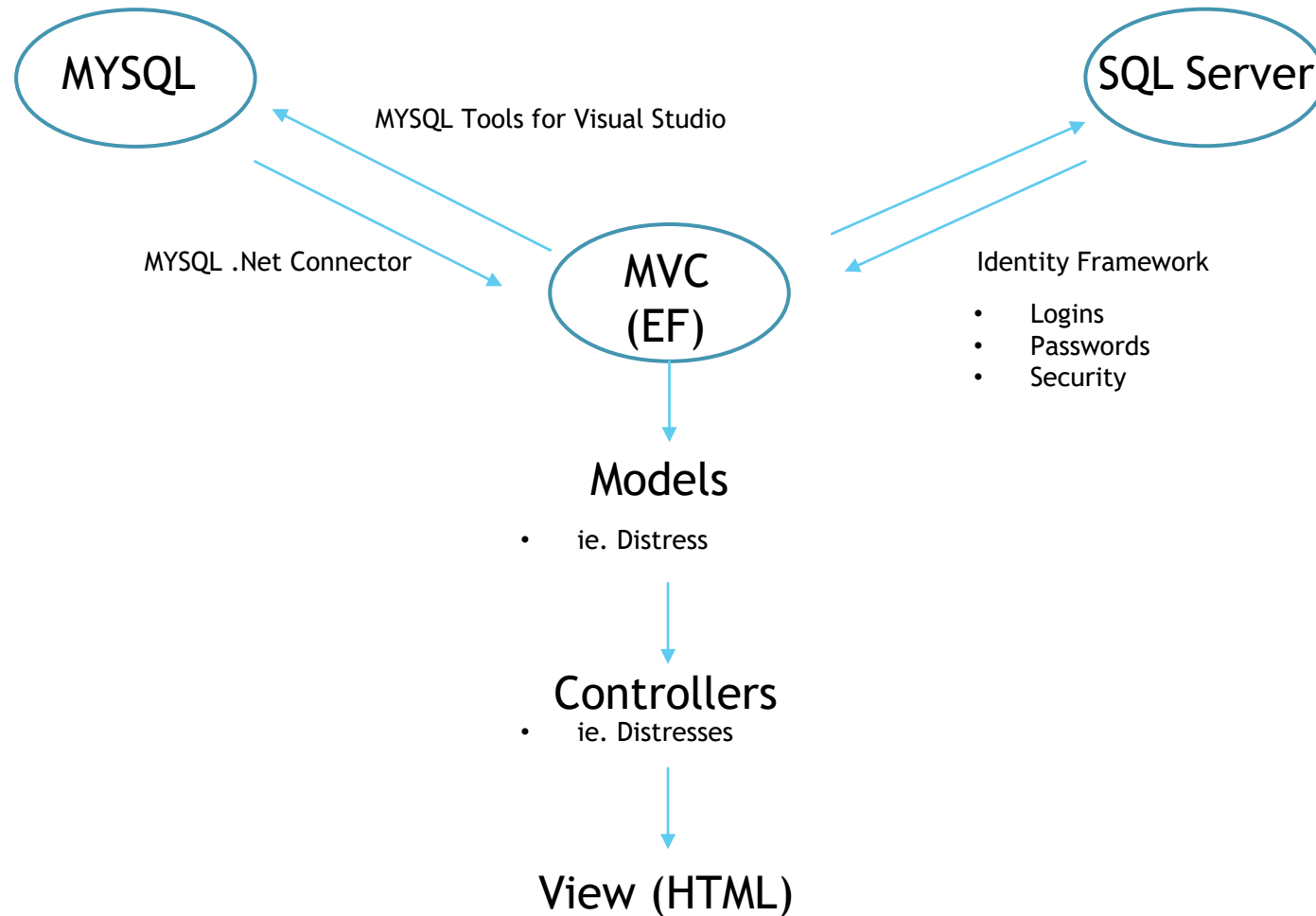
How it Works



The Web Interface

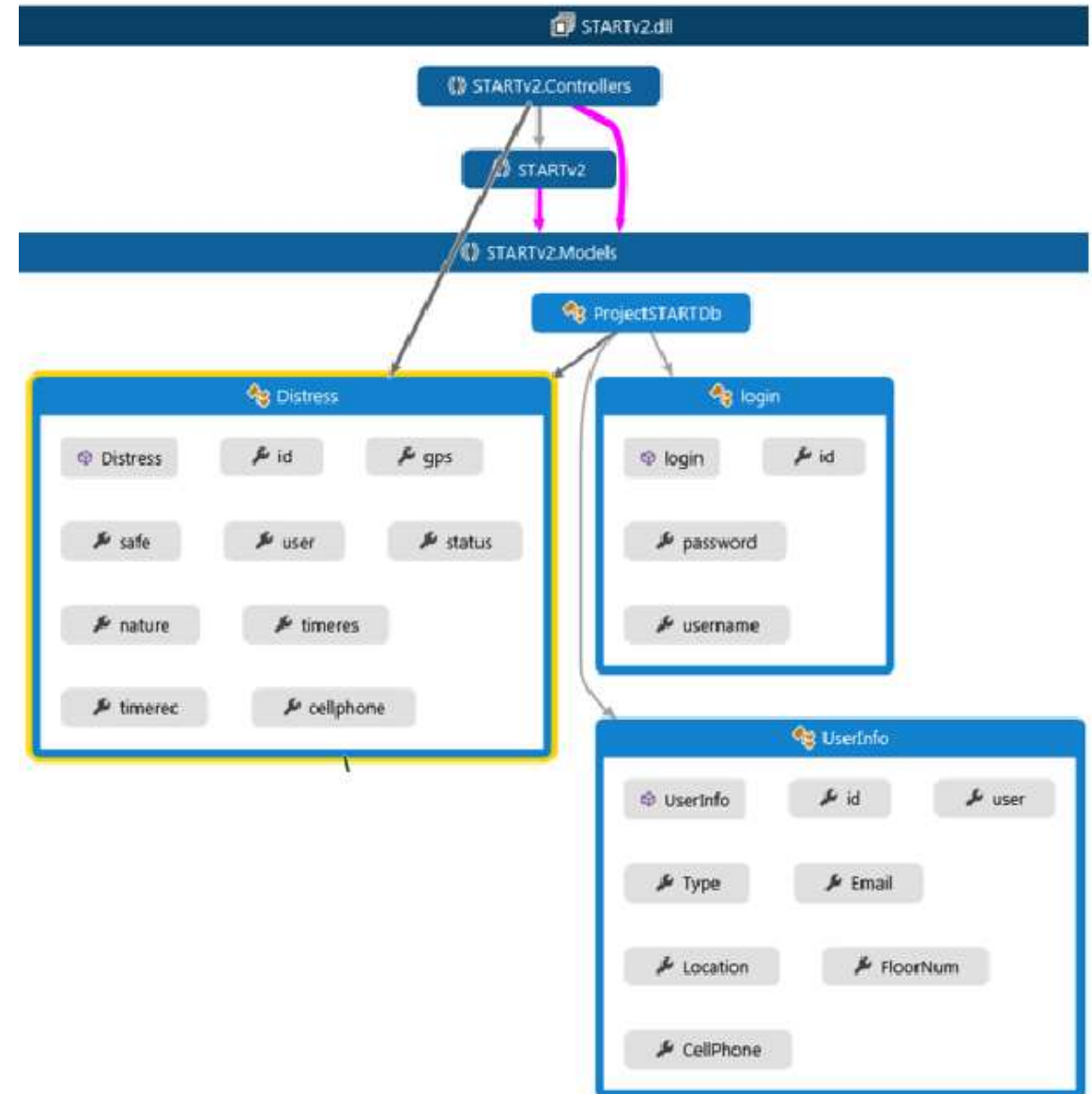
- ▶ Implemented using Model View Controller 5 (MVC)
- ▶ A front end for modifying the database information such as
 - ▶ The distresses in progress
 - ▶ The users and their roles
 - ▶ Changing Passwords
- ▶ Built to be a universal platform for all devices
 - ▶ Can be accessed by any modern browser

Programming the Web Interface



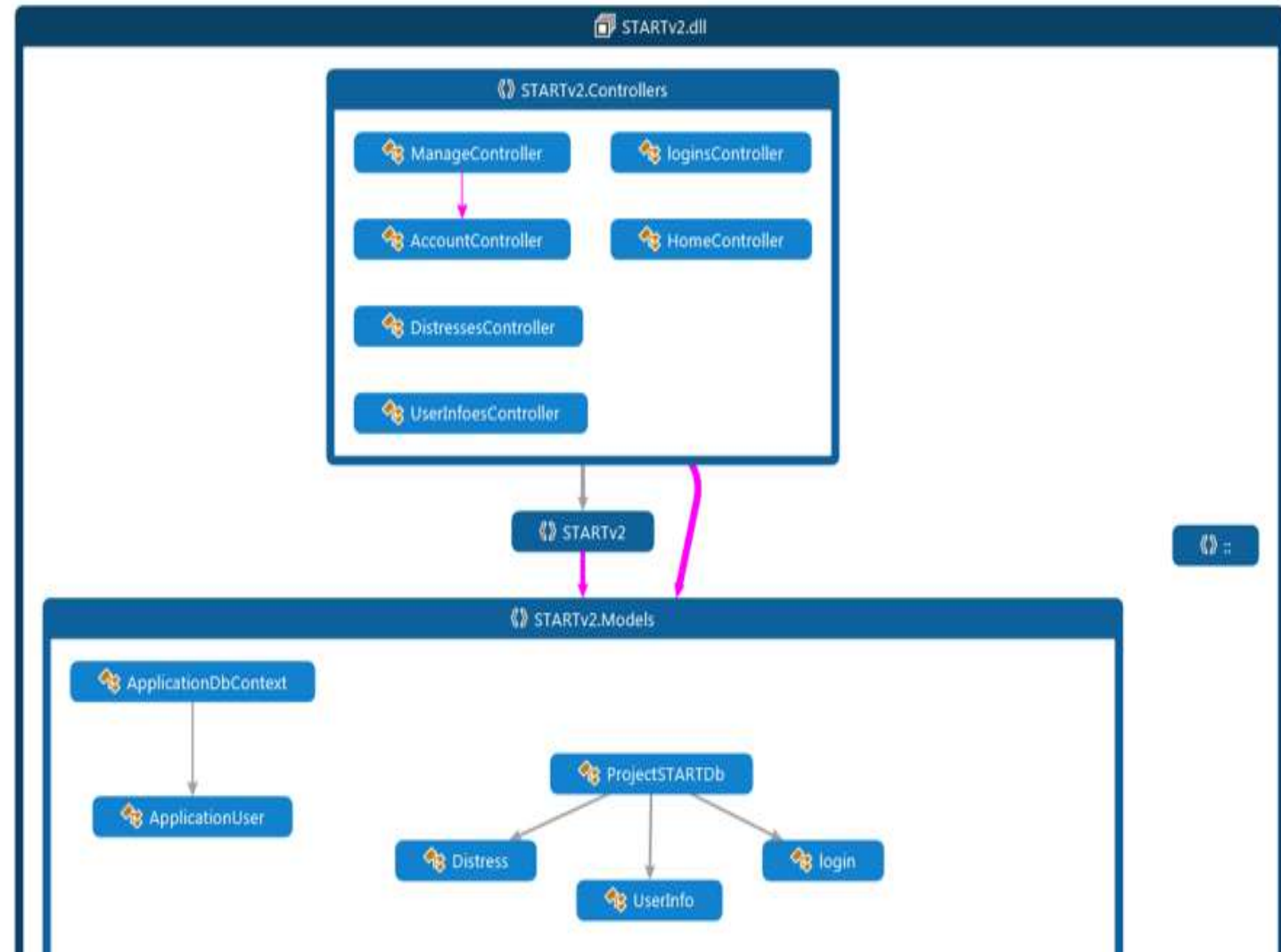
MYSQL in Entity Framework

- ▶ The MYSQL database packages were included
- ▶ Entity framework interfaces with the tables
- ▶ This allows for modification of the MYSQL Data from a web portal.



MVC

- ▶ Implemented the web interface using the Model View Controller Design Pattern.
- ▶ Models hold the data
- ▶ Controllers hold the logic
- ▶ Views are generated by the controller



The End Result

Index

[Create New](#)

safe	status	nature	gps	user	cellphone	timerec	timeres
NO	UNRESOLVED		No location can be found	cmarker1	307-359-2632	2015/04/07 16:45:13	Edit Details Delete
NO	UNRESOLVED	Wild Animal	No location can be found	cmarker1	307-359-2632	2015/03/29 13:37:01	Edit Details Delete
NO	UNRESOLVED		No location can be found	cmarker1	307-359-2632	2015/04/07 16:28:39	Edit Details Delete

Edit

Distress

safe**status****nature****gps****user****cellphone****timerec****timeres**[Back to List](#)

Index

[Create New](#)

safe	status	nature	gps	user	cellphone	timerec	timeres
no	Safe		No location can be found	cmarker	307-359-2632	1959	Edit Details Delete
Yes	UNRESOLVED		No location can be found	jbarella	307-359-2632	2015/04/07 16:45:13	Edit Details Delete
NO	UNRESOLVED	Wild Animal	No location can be found	cmarker1	307-359-2632	2015/03/29 13:37:01	Edit Details Delete
NO	UNRESOLVED		No location can be found	sjohn115	307-359-2632	2015/04/07 16:28:39	Edit Details Delete

Lines of Code

- ▶ Android
 - ▶ 12,006 lines of code
- ▶ Apache PHP Server
 - ▶ 226 lines of PHP code
- ▶ MVC
 - ▶ 570 Lines of Executable Code
- ▶ Total Lines of Code: 12,802 lines of code

Issues

- ▶ Security Issues
- ▶ Interfacing with the Local Emergency Responders
- ▶ Time Constraints and Scope

Future Implementations

- ▶ Further Android Implementations
 - ▶ Estimated Time of Arrival for Local Authorities
- ▶ Emergency Broadcast Messages
 - ▶ Ie. Amber Alerts
- ▶ Apple IOS Devices

Thank you

Questions?