MHC Dining Services Android Application

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Abstract
We are creating an Android application that allows users to access and interact with the Mount Holyoke Dining Services Menu through a clean user interface and interactive widgets. Students can view meals in different dining halls by date, and invite a friend by email or text message for their selected meal. Students can also choose to receive pop-up notifications for special menus. We are currently developing the app further to provide functionality for storing individual food choices, and a rating feature where students can rate a particular meal and see others' ratings.

Introduction
At Mount Holyoke, all residential students are required to be on the 21-meal board plan and need to choose from daily updated menus of seven dining centers. With the wide array of available options, students regularly access the Dining Services website. This can be a long time-consuming process especially when accessed through their mobiles. Since students are often on the go, a convenient and easy option to access these menus using mobile technology is the *MHC Dining Services Android Application*.

Implementation
Android is a free open-source mobile platform. We created an Android application using Eclipse IDE and Android SDK, that allows the users to access and interact with the Dining Services Menu.

In Android, layouts often created in *XML*, show the user interface, including screen elements with their properties (Fig. 1). An *Activity* is an application component that provides a screen for user interaction. In the app, we use five different activities, which have their own windows to show user interface. Through *Intents* that perform late runtime binding between the code in different applications, we bind activities and services together, as shown in Fig 2.

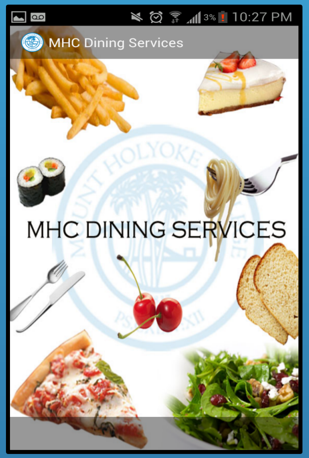
We use the Android architecture that allows sharing of activities, services and data between applications, to connect our application to the phone's email and text messaging applications. The app is built for versions Android 2.1 to Android 4.2.

```
// An intent to start a new activity called Location Activity from the
context (i.e. the current activity)
Intent intent = new Intent(this, LocationActivity.class);

// The intent can carry a bundle of data to the new activity
intent.putExtra("year", year);

//The intent calls the new activity
this.startActivity(intent);
```

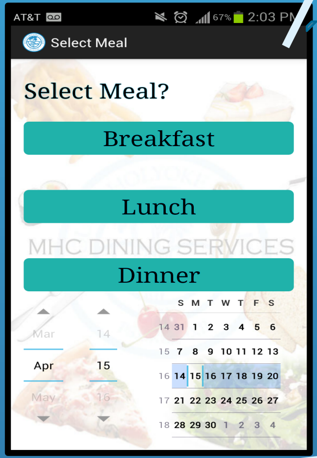
Fig 2. Use of Intents (in Java)

Fig 1. Hierarchy of User Interface Elements in XML

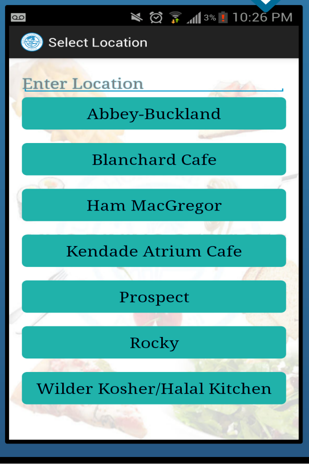
```
<LinearLayout . . . />

  <TextView
     style="@style/ButtonFont" . . . />

  <RelativeLayout>

     <Button
        android:id="@+id/lunchbutton"
        style="@style/ButtonFont"
        android:background="@drawable/button"
        android:clickable="true"
        android:text="@string/lunch" />

     <Button . . . />

     <Button . . . />

  </RelativeLayout>

  <DatePicker
     android:id="@+id/dpResult" . . . />

</LinearLayout>
```



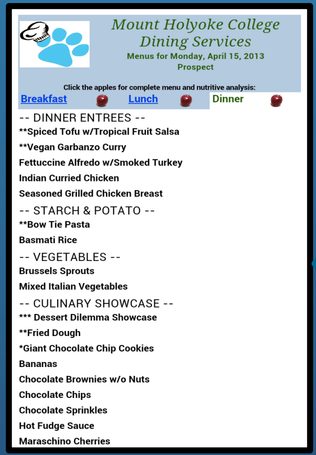
App Launcher



Select Meal



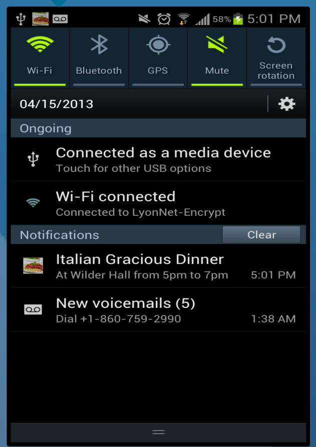
Choose Dining Hall


Mount Holyoke College
Dining Services
Menus for Monday, April 15, 2013
Prospect

Click the apples for complete menu and nutritive analysis:
Breakfast Lunch Dinner

-- DINNER ENTREES --
**Spiced Tofu w/Tropical Fruit Salsa
**Vegan Garbanzo Curry
Fettuccine Alfredo w/Smoked Turkey
Indian Curried Chicken
Seasoned Grilled Chicken Breast
-- STARCH & POTATO --
**Bow Tie Pasta
Basmati Rice
-- VEGETABLES --
Brussels Sprouts
Mixed Italian Vegetables
-- CULINARY SHOWCASE --
*** Dessert Dilemma Showcase
**Fried Dough
*Giant Chocolate Chip Cookies
Bananas
Chocolate Brownies w/o Nuts
Chocolate Chips
Chocolate Sprinkles
Hot Fudge Sauce
Maraschino Cherries

View Menus



04/15/2013
Ongoing
Connected as a media device
Touch for other USB options
Wi-Fi connected
Connected to LyonNet-Encrypt
Notifications Clear
Italian Gracious Dinner
At Wilder Hall from 5pm to 7pm 5:01 PM
New voicemails (5)
Dial +1-860-759-2990 1:38 AM

Get Notifications

Fig 3. Android Application Lifecycle

Conclusion
In the next stage of the application, we plan to add features to store individual food preferences by storing the data in an SQL database, and add a feature to search for preferred food. We also want to provide a feature where students can see the current traffic in a dining hall, and rate a particular meal.

Acknowledgement
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