iPDC

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In the Name of Allah, the Most Gracious, & the Most Merciful.

Certificate of Approval

Certified that the work contained in this report entitled

iPDC

was carried out by Mr. Mohammad Shabaz, Mr. Muhammad Sohail Ismail, and Mr. Usman Akram under my supervision and that in my opinion, it is fully adequate, in scope and quality, for the project of Emerging Software Engineering Platforms (CS-561).

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(Course Instructor)

This Project is dedicated to

Our loving families,
& To all those who live for others.

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Abstract

The basic purpose of the project is to provide a better solution for viewing Pepsi Dining Center (PDC) menu on the go. Besides showing the menu to the user, the idea is to make the dininig experience at PDC more interactive and full on fun.

Due to the smartphone boom observed in the last few years, the number of smartphone users has been increased tremendously, and more and more cellphone users are switching from traditional mobile phones to touch enabled large screen devices. Hence in order to cope with the modern embedded devices transformation, there has now been a need for every business and identity to create an essential impression on it's clients. iPDC is one such app which provides a full featured interactive menu being acquired from the web based menu controlled by the PDC Admins. Though, iPDC is in no way endorsed by any authority, and the development of this app is solely for educational purposes, we have made sure that the students, faculty members, staff and all other visitors to PDC enjoy the dining experience and are able to make the best of the meal time.

At the beginning of the project the advanced study of literature was done, relating to the project scope. Further research was done to develop understanding about various classes and frameworks. Registration of the project at the Gogole App Engine was made in order to provide cloud based integrity. Investigation and implementation of different techniques in acquiring data from external sources was done, and finally an efficient way to achieve the initial objective of the project was devised by creating a separate code based on python and XML parsing schemes. The other features of the app demanded thorough revision of the lecture slides, labs and assignments of the course.

Chapter 1
Introduction

Over the past few years, with the explosive growth of the smartphone users, the need for business or personal identity as a smartphone app has increased tremendously. More and more wesbites and services are moving towards app developmet, and thus meeting growing demands.

Similarly, iPDC is one of the app, that serves smartphone users in provding up-to-date menu from the Pepsi Dining Center (PDC) at Lahore University of Management Sciences (LUMS). It should be noted that iPDC is in no way endorsed by PDC or LUMS, and this app is developed solely for educational purposes.

Besides feature like displaying a latest dine-in menu, iPDC is also packed with various features which makes the dining experience at PDC very entertaining. The report is broken down in to two major sections. The first part basically covers the major features embedded in the app and the classes used in constructing the app architecture and functionalities, and the last part conveys the effort of team members and the problems faced in fulfilling the requirements of the project.

Chapter 2
Architecture Discussion

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2.1 Required Features

Before discussing about the main features of the project, following are the main requirements listed:

1. Application Lifecycle and Navigation
2. Specialized Views
3. Animation & Drawing
4. Interaction
5. Persistence
6. Cloud-based Services
7. Audio and Video
8. Google App Engine

2.2 Implemented Features

2.2.1 Full Menu

Loaded from Internet with real-time updates and categorized under dine-in with timings:

- Breakfast
- Snacks
- Lunch
- Dinner

Besid displaying menu, follwing extra features were also implemented:

- Prices of each item (Standard and Full Portion)
- 1-Click recipe search on Google for every menu item
- Automatic update of new menu on every launch

- Manual update of menu via refresh button
- Network absence alert, when not connected to the Internet
- Easy to scroll sections of daily menus

2.2.2 Dining Guide

Detailed Dining Guide about how to enter, select foodm pay, and put everything in place after eating. Dining Timings were displayed for:

- Breakfast
- Morning Snacks
- Lunch
- Evening Snacks
- Dinner
- Late Night Snacks

2.2.3 Event Capture

The Event Capture feature allowes to get images from camera directly, or photo Library. The user can also share Images on social media like facebook, twitter and tumblr or can also save in photo library for a later use. Emailing functionality of images were also embedded. Furthermore users are able to record videos, play them and upload on Youtube.

2.2.4 Health Watch

Body Mass Indicator (BMI) inquires about user's Gender, Height (in cm), Weight (in kg) and Age. Calculations are then performed, and results are being displayed as Ideal Weight, difference in current weight and Ideal range, and BMI.

2.2.5 Guide Me

This feature loads the current location and the PDC location in Latitude and longitude for Google Maps and the user get directions for travelling via car, train (tram), on foot, or bike. One can also add intermediate destinations between origin

and PDC for a quick stop-by. Directions to other origin and destinations is also possible.

The feature covers detailed layers such as directions, satelite, labels ,and terrain.

2.2.6 Restaurants

This feature provides a list of alternate choice of dining experience with restaurants nearby PDC. Following detailed info is mentioned under each restaurant name being displayed:

- Cuisine Type
- Delivery possibility to LUMS
- Contact No. (clickable to launch iPhone's caller)
- Location (clickable for a Map between user and the restaurant)
- Opening Timings
- Specialty Dishes
- Expenditure Range
- Dress Code
- Seating Area Capacity
- Average Serving Time

2.2.7 About Us

This displays names of team members, instructor, and TAs as credits, just like credits at the end of a movie. User may view credits again by clicking a button.

Also there is an integrated Disclaimer embedded in a flip view animation under "*i*" button.

All features mentioned above in the section 2.1 were implemented. To breakdown the required features into categories of implemented features is quite impossible, as the app altogether covers more than 3 features in a single component integration. Howsoever, following are a few implemented ones listed against every required one.

1. Application Lifecycle and Navigation ✓
2. Specialized Views ✓
3. Animation & Drawing ✓
4. Interaction ✓
5. Persistence (plists only) ✓
6. Cloud-based Services ✓
7. Audio and Video ✓
8. Google App Engine ✓

2.3 Classes Used

- API's Used
    - GData (Google API used for Youtube Video uploading)
    - ShareKit (For accessing social media)
    - Frameworks
        - AddressBook
        - MapKit
        - CoreGraphics
        - SystemConfigration
        - CoreLocation
        - MobileCoreServices
        - MessageUI
        - Security
        - MediaPlayer

- Delegate MBProgressHUDDelegate <NSObject>
    - provides interface for callback fuction for calling after progress completes
- Class MBRoundProgressView : UIProgressView
    - View for round progress indicator (animated)
- Class MBProgressHUD : UIView
    - Progress activity indication containing MBRoundProgressView
- Class SectionHeader : UIView
    - Class providing custom view for section headers for table views, showing Arcadion display
- Class NetworkWrapper : NSObject
    - wraper for common needed network functions
- Category NSObject (SoapRequestDelegate)
    - to providing callbacks for activity indicator , connection & parsing results
- Class SoapRequest : NSObject
    - Object for connection and getting data from a url
- Class xmlElmnt : NSObject
    - defination of XML element contating URI, Tag and Array of child elements
- Class XMLReader : NSObject <NSXMLParserDelegate>
    - XML Sax Parser, returns dictionary for given tags
- Class SharedInstance : NSObject
    - Provides Shared Instance to keep Application Level Data
- Class Constants : NSObject
    - Defines constants
- Class BMIinfoCalculator : UIViewController <UIPickerViewDelegate, UITextFieldDelegate>
    - Provides Controller for BMI Calculations, delegates: UIPickerViewDelegate, UITextFieldDelegate
- Class BMIVC : UIViewController
    - Provide Controller for more BMI Calculator views

- Class EventCapture : UIViewController <UIActionSheetDelegate, UIImagePickerControllerDelegate, UINavigationControllerDelegate>
    - Provides controller for event video/ image capture & share view, delegates: UIActionSheetDelegate, UIImagePickerControllerDelegate, UINavigationControllerDelegate
- Class YouTubeUploading : UIViewController <UITextFieldDelegate, UIPickerViewDelegate, UIPickerViewDataSource>
    - Provides functionality to upload video's to youtube, delegates: UITextFieldDelegate, UIPickerViewDelegate, UIPickerViewDataSource
- Class AboutUsVC : UIViewController
    - Provides view controller for credits & desclaimer views
- Class DiningGuideVC : UIViewController
- Class PDCMenus : UITableViewController
- Class TakeMeThereVC : UIViewController <UIWebViewDelegate, CLLocationManagerDelegate>
- Class ResturantsVC : UITableViewController
- Class HealthWatchVC : UIViewController
- Class MoreTabBarItems : UIViewController <UITableViewDelegate, UITableViewDataSource>
- Class WebVC : UIViewController
- Class MyAnnotation : NSObject <MKAnnotation>

- Class MapVC : UIViewController <MKMapViewDelegate>
- Class iPDCAppDelegate : NSObject <UIApplicationDelegate, UITabBarControllerDelegate>

Chapter 3
Effort & Hinderances

3.1 Project Efforts

Though, the app was majorly based on a all-in-one coding platform, and each team member interacted with almost all of the features, but we were able to identify the tasks performed by every member once we brokedown the project in to smaller modules. Following chart identifies the work efforts

Deliverables	Owner	Duration	Task Id
Planning phase		**4**	**Planning**
Defining Idea	Shabaz	2	P1
Proposal	Shabaz	4	P2
Team phase		**2**	**Team**
Application Skeleton (App Life Cycle)	Team	2	T1
Implementation phase		**7 w**	**Implementa**
PDC Menu (Table View + Web View, Google App scrapper for pdc menu in python)	Usman	1 w	I1
Guide Me (routing to PDC from user's current location), (Location Manager + Web View)	Sohail	2 w	I2
BMI (Body Mass Index) Calculator, (Customized Keyboard, Slide-up views, Picker View)	Shabaz	2 w	I3
Restaurants (List of famous restaurants, list is on web & can be updated anytime), (Table View, dialing contact and map location of restaurant & user)	Usman	2 w	I4
More (Containing rest modules) (Table View)	Shabaz		I5
Dining Guide (Notes & Timings) (Image View & Text View)	Shabaz		I6
Event Capture (Capture/Select Vedio/Image and share on social media/email) (Image View, Image Picker Controller, ShareKit, Google API for Youtube video uploading)	Sohail		I7
About Us (Image View, Animated Credits, Flip View, scrollable disclaimer)	Shabaz		I8
Closure phase		**5**	**Closure**
Integration	Team	5	C1
Testing	Team	5	C2
Presentation	Shabaz	1	C3
Demo/Video	Shabaz	1	C4
Project Timeline	Usman	1	C5
UML Class Diagram	Sohail	1	C6
Project Report	Shabaz	2	C7

Figure 1 Project Efforts w.r.t. Tasks

3.2 Project Timeline

For Task ID identification, please look in to the picture above of tasks breakdown.

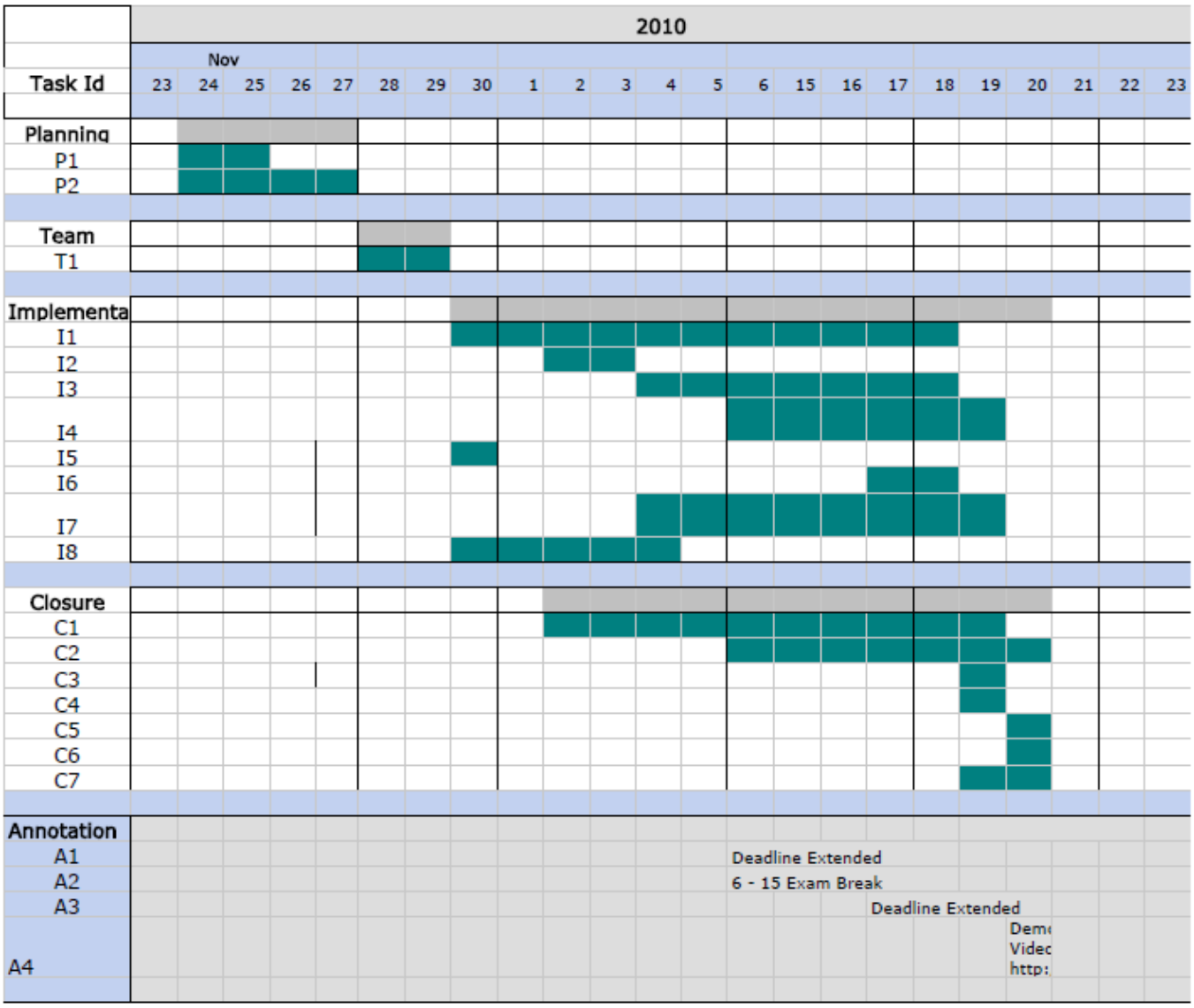

Figure 2 Project Timeline

3.3 Project Hinderances

Though the learning material was well coveered in the class, but there were some topics that required practiced implementation before working on the project. Some of the project hinderances includes:

- Google API
- Gdata Framework
- ShareKit
- Social Media API
- Python
- Customizable table views
- Customizable keyboards
- MAC acquirements and lab share PC policies
- Xcode SDK version conflicts
- Device porting

Chapter 4

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