**Assignment Front Cover Sheet**

**TITLE PAGE**

**Programme of Study: Foundation Degree in Applied Computing**

**ASSIGNMENT**

**NAME OF STUDENT: YEAR OF STUDY 2**

**College Email Address:**

**Unit code: LP20552A1 Unit Title Mobile Technologies**

**Unit Tutor Danielle Vass** [**vassd@citybathcoll.ac.uk**](mailto:vassd@citybathcoll.ac.uk)

**ASSIGNMENT TITLE:**

**LP20539A1: App Development**

**WORD COUNT n/a DATE SUBMITTED 12/05/2015**

**(May not exceed +/- 10% of limit) (Late submissions may be penalised)**

**CHEATING AND PLAGIARISM DECLARATION**

**I confirm the following**

*I have read and understood the following sources that explain cheating and plagiarism;*

*the University of Bath website at* [*http://www.bath.ac.uk/library/help/infoguides/plagiarism.html*](http://www.bath.ac.uk/library/help/infoguides/plagiarism.html)

*and my programme handbook*

*To the best of my knowledge, my work does not contain plagiarised material.*

**SIGNATURE: Joshua Wright**

Ensure that you have completed your work as specified by the deadline date and time (**Thursdays 4pm**)

You must submit one electronic copy of your work to the relevant location as detailed in the assignment brief and/or the Regulations for Submitting Assignments document.

You must keep a copy (electronic and paper) of this assignment for your own records.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| bath college MONO copy | | Assessment feedback form Students must attach this form and the assessment brief to work submitted for assessment | | | | UoB_logo-blu-xs |
| Hand out date: | | *(as per assessment plan)* | Hand in date: | | | *(as per assessment plan)* |
| Assessor: | | Danielle Vass | Date received: | | |  |
| Assessor’s comments | | | | | | |
| Percentage mark awarded |  | | | Contribution to Unit Marks | | 60% |
| Unit Outcomes | * Analyse and recommend an appropriate mobile solution for the workplace. * Demonstrate an understanding of a variety of mobile technologies (e.g. Mobile-device based languages, operating systems, internet browsers and environments). * Produce a mobile application for a given specification. * Research current developments in emerging mobile device techniques. | | | | | |
| Assessor’s signature |  | | | | Date |  |
| Moderator’s signature |  | | | | Date |  |

# Aims

This assignment aims to provide evidence for the learning outcomes of the unit. (See above).

It will demonstrate your ability to do the following:

* Use GUI design and visual programming skills in a given language.
* Show good problem solving skills, Time management and Planning and prioritisation of tasks.
* Prepare high quality reports and documentation to support applications.
* Present information appropriately.
* Perform user demonstrations and prepare questionnaires to aid critical evaluation of products.

# Scenario

You are tasked with creating an Android app for a travel agency to demonstrate their travel destinations.

A requirement of the app will be to display photographs of travel destinations using a popular web API Flickr (different web API you must email a request to the lecturer to get agreement).

You must also come up with at least one additional feature e.g. allowing users to favourite photographs, or displaying other additional information on locations such as the current weather.

Finally, you must demonstrate a good HCI and incorporate some Material Design aspects into your app.

Your app is required to run on Android 5.0 (SDK 21) and above. It is not necessary to have a real Android device yourself, as Android Studio will provide an emulator to use.

# Tasks

1. Working Android App

- Marked in a student viva - students demonstrate and defend their work one-on-one

2. App Report

a. A mock app store listing

b. What you learned

c. What your proud of

d. What you could improve (programming wise)

e. Features you’d like to add to your app if you had more time

f. Differences you see between building desktop and mobile apps

3. Presentation on the past / present / future of mobile technologies

# SubMISSION

You should submit a folder containing:

1. Android app project folder (all source code)
2. Presentation exported as a folder of images (PNG preferable)
3. Report as a word document

# Grading Criteria

|  |  |  |  |
| --- | --- | --- | --- |
| Element | Wt. | Criteria | Marks |
| Task 1: Android App | 70% | Splash Screen | 0 – 10 |
| List of Destinations Screen | 0 – 10 |
| Specific Destination Screen | 0 – 10 |
| Pictures from API | 0 – 10 |
| Bonus Feature(s) | 0 – 10 |
| HCI (Material Design) | 0 – 10 |
| Quality of the viva defence | 0 – 10 |
| Task 2: Presentation (Past, Present, Future of mobile) | 20% | Standard of English | 0 – 5 |
| Multiple Operating Systems mentioned (Android, iOS, Blackberry, Windows Mobile) | 0 – 8 |
| Future tech | 0 – 7 |
| Task 3: Report | 10% | App Store Listing | 0 – 2 |
| What you Learned | 0 – 1 |
| What your Proud of | 0 – 1 |
| Improvements | 0 – 1 |
| Additional Features | 0 – 2 |
| Differences between Mobile and Desktop | 0 - 3 |

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# Abstract

# Introduction

This report includes a number of points that will cover programming skills and other skills that were learnt during this unit. Some skills will be singled out that I am proud of now knowing. Other points will look at how the apps programming could have been improved and also other features that could have been added if the time allowed it. The final inclusion will be a mock app listing for the google play store.

# What you learned

During the app development unit I learnt server things about interfacing with other APIs and also learning that libraries have been built to ease the use of these APIs, for example using the Flickr API in combination with the Picasso library to display images in an easy simple quick way.

I have done development work on the Android platform in the past. However this was before Android Studio existed, I was using the Android developer kit which used Eclipse. This software at times was buggy and included a lot of features not usable by Android. Even though Android Studio is still buggy it has fewer that I have come across than Eclipse. It has been a good experience using this new tool and has kept me up to date with the latest Android developer tool.

# What your proud of

I am proud of being able to have made this app and modifying it to add some new features of my own. Also proud of that it was my first app that I have actually made that wasn’t a proof of concept. All the other apps I have made were just proof of concept for using mobile devices and wireless data loggers. Nice to have built and finished an app even though there are possibilities to expand it.

# What you could improve (programming wise)

Some of the IDs that I used during the development of the app are not consistent because the same image controls are used over again so each image view is named similarly however they do not follow a pattern. This made it a bit confusing when selecting the controls id.

# Features you’d like to add to your app if you had more time

One of the features that I was in the middle of implementing but ran out of time was a way to bring up Google Maps with the images location. This would enable the user to see the location of the image so they could go see it themselves. I had already edited the query and the object used to get and set the information.

Another feature that I would have liked to been able to add would be a way for the user to build a list of custom locations and keep this saved on the phone. This would enable them to plan a site seeing holiday because they would have the locations in a list with images that have a GPS coordinate.

# Differences you see between building desktop and mobile apps

One of the main differences between building apps for mobile and desktop is the available screen size. This effects how much information or controls are able to fit onto a screen. This is one of the reasons why Android use activities that can pass information on.

Each activity will have a different feature or function that that the user can interact with, compared to an desktop app where all these features and functions could be on one screen.

Mobiles and desktops have different user interactions because one uses touchscreen and the other uses a mouse. The differences here can be quite different because of the available interactions for example there is no right or left click on a touchscreen compared to a mouse. This is a change in the amount of interactions. Another difference is a desktop only has one pointer where as a touch screen can have numerous touches. This enables multiple controls to be used simultaneously.

Another huge difference is the hardware and sensors that a mobile has. GPS, Camera, Bluetooth, Gyroscopes, Magnetometer, performance specs etc. this enables apps to be built that on a desktop PC wouldn’t work or would be pointless because the majority wouldn’t have access to these sensors or hardware.

The performance of a desktop to a mobile device still has a huge gap however with recent development mobile devices are becoming more powerful. This limits what the app can physically do. This is why game apps do not have as good graphics compared to PC games. Because of the hardware limitations high end apps need to be careful on the resources they are using because the device can become slow and to hot, this will discourage users form using the app. Whereas a PC can handle a resource heavy app, this is why you don’t get programs like Photoshop running on mobile devices. However lightweight versions on computer apps have been made for mobiles.

# A mock app store listing

