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| Student Name: Jianyu He | Student Number: D17124591 |
| Mobile Number: 0876070764 | Supervisor: ??? |
| Programme Code: DT228 | |
| Project Title: Image embellish | |
| Summary (approximately 200 words)   This project is to design an application use to modify images it is about image processing; I may decide to design this application in android site.  This application allow user to select image from gallery or use camera to make image, user  can rotate image, change hue of image, tailor image, add some decorates for the image and so on. also user can share the image to other social media. This application will have a database to store all element you want add in the image, for example, animals, plants, weather and so on.  In the database will have different category file to differentiate element. This application will have a search box to allow user easy to find elements.  The goal of this project is to help me learn more knowledge from research and digest the  Knowledge from class, this project is benefit and more helpful in my future. | |
| **Background (and References)**  With the rapid development of human science and technology, most people have a smartphone, human cannot leave without smartphone [1] This article is about why smartphone is be pervasive. This article is help me to analysis which part the application belong to. Eg mobile or web. People would like use smartphone to communication and entertainment [2]. This article is about why people use mobile phone to communication and entertainment. This article is help me to analysis what part people would like use mobile to. Most people would like use social media to communication with each other, they may want to share photo, video or image to each other [3]. This article is about why photo and video is important use in social media. This article help me to analysis what is important in communication of social media. Image Processing [4] will be used in this project, and this book describes the fundamentals of image processing. This book will help me to understand fundamentals of image processing, that I can able to analysis the design of application. So, I want design image embellish software use for smartphone.  References:  [1] A. Oulasvirta, T. Rattenbury, L. Ma, E. Raita, 2012, “Habits make smartphone use more pervasive”, Personal and Ubiquitous Computing, <https://dl.acm.org/citation.cfm?id=2124486>  [2] Ran Wei, 2006, “Motivations for using the mobile phone for mass communications and entertainment” <https://doi.org/10.1016/j.tele.2006.03.001>  [3] Lee Rainie, Joanna Brenner, Kristen Purcell (2012) “Photos and Videos as Social Currency Online” <http://john.do/wp-content/uploads/2013/04/PIP_OnlineLifeinPictures.pdf>  [4] Maria MP Petrou, Costas Petrou, 2010, “Image Processing: The Fundamentals”  <https://books.google.ie/books?hl=zh-CN&lr=&id=w3BpSIxN9ZYC&oi=fnd&pg=PR23&dq=image+modify&ots=3LepeC1C-G&sig=_xA3BDvzVuW-o21yw1uPJTQUeWw&redir_esc=y#v=onepage&q=image%20modify&f=false> | |
| Proposed Approach Image embellish is design by android studio use for mobile phone. It use to design image as user want.  I choose waterfall methodology for my project, I will follow step by requirement, analysis, design, Implementation, testing, development and maintenance. I believe this methodology is more helpful for my project.  Image embellish is 3-tier structure, it have presentation tier, application tier and data tier.  Requirement:  I am going to find what is the good idea for this project, then clear and define the idea.  Analysis:  I will to do a lot of research to think about how this project look like, what function this application will have, what programming language I will use, what area will use for and so on. Then I discuss about my project with teacher in class.  Design:  I will be going to do some paper work to show structure of image embellish to show each function. Then I will create use case diagram, class diagram, sequence diagram and erd for image embellish.  Implementation  I will follow design to design code for image embellish. If I meet error I will to do research from internet to solve problem.  Testing and evaluation:  When I finish implementation the design, first I test code to make sure it is no error, then I will ask somebody to use my application and evaluation to find any error or problem is existing, if it exist then I will fix the error then test again. Also I will get evaluation from user, this will help me to find what is good or bad in this project, that I will know how to improve this application.    Maintenance: I will get advice from user who test image embellish then update it. | |
| Deliverables project dissertation  User manual  Software and Configuration Files  Demo  Final report include every thing I did in the project | |
| Technical Requirements Laptop  Android mobile phone  Android studio  Database | |

## Project Reviews – Please include reviews of two of LAST 2 years projects from either DT228, DT282 or DT211C.

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| **Project 1**  **Title:** Euro Coin Classification Using Image Processing & Machine Learning  **Student:** Yumin Chen  **Description (brief):**  this project is through suitable mathematical model to recognition denomination of euro coin.  The main technologies involved in this project are image processing and machine learning. For Image Processing, computer vision techniques are used to process the image-based sample dataset and extract features. Machine Learning is used for predictive data analytics to build the models of generalized euro coin denominations.  This project allows human easy to calculate a large number of money.  What is complex in this project  Visual object recognition is one of the most challenging computational problems in machine vision. Human can easy to recognition any euro coin but machine can not, so have to create an artificial recognition system.  What technical architecture was used  JSON language, image processing techniques, machine learning techniques, data mining techniques, computer vision techniques, statistical techniques  Explain key strengths and weaknesses of this project, as you see it.  The strength of this project is allowed user easy to calculate money  The weakness of this project is this application have to scan each coin sometime is not necessary. | |
| **Project 2**  **Title:** **Image Selection Based on Optimal Characteristic Analysis**  **Student:** Jameel Briones  **Description (brief):**  This project is through compare Basic image properties such as sharpness, noise level, exposure and contrast will be analyzed to test for the image’s quality to find similar image then category. User can share the image to social media site.  It helps user to tidy up images.  What is complex in this project  This project have to research and implement a good image comparison algorithm can to use to compare image’s quality.  Have to assessment measure for different image properties that can affect image quality    What technical architecture was used  Python language, opencv, image processing technical  Explain key strengths and weaknesses of this project, as you see it.  The strength of this project lies on the image quality assessment. The tests performed has produced a higher success rate than the image comparison, often matching human’s assessment of image quality. The image assessment is also made more efficient due to multithreading. It also provides a share functionality in the application.  project’s weaknesses lies on the image comparison. It may be accurate in a few samples, but it can also have a few outliers resulting from its brute force matching of its descriptors. Because of this, it often leads to an inaccurate matches of the images. It can also be quite slow at times, depending on the image size and quantity to be compared. | |
| Proposal Sign off: | |
| **Student Signature:** | **Date:** |
| **Lecturer Signature:** | **Date:** |

Comment:

Jianyu,

You need to have more detail to explain what your approach is, and how you will do it:

Your text “In the database will have different category file to differentiate element. This application will have a search box to allow user easy to find elements” – I didn’t understand this.. what is an example of category? What is an example of search?

Are you going to custom develop all the image processing? How will you do this? Will you use tools? What code? Algorithms? How will you identify

“ Image embellish is design by android studio use for mobile phone. It use to design image as user want” - is this saying that you are going to develop Image Embellish through android studio...?

What is the main challenge of the project?

Can you get someone to proof read it – as some of the sentences are quite ambiguous.

Susan