

Institute of Technology, Carlow

B.Sc. Hons. in Software Engineering

CW228

Project Plan

Project Title: Number Plate

Recognition

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1. Introduction

1.1. Document Overview

The purpose of this document is to give a plan for the whole project, indicate the tasks in each develop phases and allocate appropriate time each task.

1.2. Software & Hardware Requirement

Hardware: There are no specifications detailing hardware requirements.

Software: Windows XP or higher operating system with Java running environment.

2. Project Plan

2.1. Gantt Chart for Project Plan

The whole project is divided into many small parts, and each part is given a certain amount of time to finish. All the details are listed in a Gantt chart in next page.

ID	Task Name	Duration	Start	Finish	Number	01 December	01 January	01 February	01 March	01 April						
					16/11	30/11	14/12	28/12	11/01	25/01	08/02	22/02	08/03	22/03	05/04	19/04
1	Improve GUI Design	2 days	Sat 12/12/09	Sun 13/12/09												
2	Import Image and Convert to grayscale	4 days	Mon 14/12/09	Thu 17/12/09												
3	Gaussian Smoothing	2 days	Fri 18/12/09	Mon 21/12/09												
4	Stage Testing	3 days	Tue 22/12/09	Thu 24/12/09												
5	Differentiation	3 days	Fri 25/12/09	Tue 29/12/09												
6	Non-maximum Suppression	4 days	Wed 30/12/09	Sun 03/01/10												
7	Edge Thresholding	6 days	Mon 04/01/10	Sun 10/01/10												
8	Stage Testing	4 days	Mon 11/01/10	Thu 14/01/10												
9	Number Plate Isolation	4 days	Fri 15/01/10	Wed 20/01/10												
10	Number Plate Resizing	5 days	Fri 15/01/10	Thu 21/01/10												
11	Stage Testing	2 days	Fri 22/01/10	Mon 25/01/10												
12	Image Binarization	4 days	Tue 26/01/10	Fri 29/01/10												
13	Vertical Projection	7 days	Fri 29/01/10	Sun 07/02/10												
14	Character Segmentation	9 days	Mon 08/02/10	Thu 18/02/10												
15	Stage Testing	5 days	Fri 19/02/10	Thu 25/02/10												
16	Character Feature Extraction	10 days	Fri 26/02/10	Thu 11/03/10												
17	Compare Character Feature with Templates	10 days	Fri 12/03/10	Thu 25/03/10												
18	Stage Testing	5 days	Fri 26/03/10	Thu 01/04/10												
19	System Testing	11 days	Fri 02/04/10	Fri 16/04/10												

Task

Split

Milestone

Summary

Project Summary

External Tasks

External Milestone

Inactive Task

Inactive Milestone

Manual Summary

Manual Task

Duration-only

Manual Summary Rollup

Manual Summary

Start-only

Finish-only

Deadline

Progress

Project: NPR Project Plan.m
Date: Thu 10/12/09

2.2. Task Explanations

Task ID	Task Name	Task Content
1	Improve GUI Design	Improve the design of user interface
2	Import Image and Convert to grayscale	Import image, display it in the Original Image Panel. Finish grayscale convention algorithm.
3	Gaussian Smoothing	Implement Gaussian smoothing algorithm
4	Stage Testing	Test all the implemented functions in image pre-processing part.
5	Differentiations	Take the gradient of the image, store them into an gradient array.
6	Non-maximum Suppression	Implement non-maximum suppression algorithm and apply it to the gradient array.
7	Edge Thresholding	Implement edge thresholding algorithm and display the edge detected image.
8	Stage Testing	Test all the implemented functions in edge detection part.
9	Number Plate Isolation	Search the number plate area by using a slid-window move around in the edge detected image.
10	Number Plate Resizing	Remove the border of the number plate
11	Stage Testing	Test all the implemented algorithm in number plate localization part.
12	Image Binarization	Convert the isolated number plate sub-image into black and white.
13	Vertical Projection	Apply vertical projection onto the binary sub-image.
14	Character Segmentation	Separate the character in the binary sub-image by using the vertical projection data.
15	Stage Testing	Test all the implemented functions in segmentation part.
16	Character Feature Extraction	Extract the features from each character by using character feature extraction algorithm, store the feature into a character feature array.
17	Compare Character Feature with Templates	Compare the character feature array with the templates to find the most similar template.
18	Stage Testing	Test all the implemented functions in character recognition part.
19	System Testing	Test the entire system, fix bugs.