UNIVERSITY OF SARGODHA
DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

Capstone Project 2019-20 *BSCS 7th Regular*

PROJECT IMPLEMENTATION PLAN

Sr.	Milestone Detail	Outcome	Project %	Roll #	Member's Contribution	Learning Outcome	Viva
1	It consists the following major stages: 1.Binarization 2.Noise Removal	After preprocessing an preprocessed image is acquired for further processing.	5	BSCSF16E005	Perform all searches related to the project	Understanding about project	
				BSCSF16E061	Setup all necessary tools to done the project.	To embed the libraries in the system	
2	The input image is initially processed to improve its quality and prepare it to next stages of the system	After binarization image is converted into white and black format.	10	BCSF16E061	Search for the algorithm for binarization and understand it for implementation in python.	Learn basics of python	
				BCSF16E005	Search for the algorithm for binarization and understand it for implementation in python.	Learn basics of python	
3	In this noise removal stage we are going to remove the noise of the image i.e., while preserving the sharpness of the image	After this processing the edges in the picture become more efficient than then the median filter.	15	BSCSF16E061	Search for noise removal algorithm and understand it.	Implementation of algorithms	
				BSCSF16E005	Search for noise removal algorithm understand it.	Implementation of algorithms	
4	This process is followed by increasing saturation of the image to increase the separation between colors. The captured input image is RGB	The image is converted into grayscale from its original color.	20	BSCSF16E005	Searching for algorithm to convert RGB to grayscale.	Learned about images types and their extension transformation	
				BSCSF16E061	Searching for algorithm to convert RGB to grayscale.	Learned about images types and their extension transformation	

Team

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	format. The first step of pre-processing is to convert RGB image into gray-scale image.						
5	The frame involves ample of features which needs to be carefully selected for accuracy purpose. These features are provided to classifier for classification purpose.	This work is to analyze the features which are extracted from characters for the identification purpose.	25	BCSF16E005	Understand what is feature extraction.	Learn the extraction of features	
				BCSF16E061	Understand what is feature extraction.	Learn the extraction of features	
6	Edge Detection is simply a case of trying to find the regions in an image where we have a sharp change in intensity or a sharp change in color, a high value indicates a steep change and a low value indicates a shallow change.	Find the regions in an image where we have a sharp change in intensity or a sharp change in color.	30	BCSF16E005	Detail about edge detection.	Deals with the boundaries of images	
				BCSF16E061	Searching for edge detection algorithm and understand equally.	Deals with the boundaries of images	
7			40	BSCSF16E061	Perform morphological operations	Learn mathematical morphological operations	

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	Dilation is one of the two basic operators in the area of mathematical morphology, the other being erosion.	Image is improved by filling holes in an image, sharp the edges of objects		BSCSF16E005	Perform morphological operations	Learn mathematical morphological operations	
8	Erosion is one of the two basic operators in the area of mathematical morphology, the other being dilation.	The basic effect of the operator on a binary image is to erode away the boundaries of regions of foreground pixels.	45	BSCSF16E005	Understand the dilation process and implement in python.	Implementation of algorithms in python	
				BSCSF16E061	Understand the dilation process and implement in python.	Implementation of algorithms in python	
9	The Hough transform is a feature extraction technique used in image analysis, computer vision, and digital image processing	The purpose of the technique is to find imperfect instances of objects within a certain class of shapes by a voting procedure.	55	BSCSF16E061	Detail about feature extraction technique.	Learn the features in an image	
				BSCSF16E005	Implement Hough transformation.	Learn the features in an image	
10	Histogram of Oriented Gradients has many advantages in number plate detection because it is relatively invariant to local geometric	the image is divided into cells of fixed size.	50	BSCSF16E005	Design of histogram.	Learn to deal with histogramical tools	
				BSCSF16E061	Implementation of histogram.	Learn to deal with tools of histrogram	

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	and photometric transformations.						
11	Image thresholding is a simple, yet effective, way of partitioning an image into a foreground and background	of partitioning an image into a foreground and background	70	BCSF16E005	Understand the partitioning about image.	Learn segmentation of images	
				BCSF16E061	Implement Image thresholding.	Learn segmentation of images	
12	Segmentation is one of the most important elements in automated analysis.	the objects or other entities of interest are extracted from an image for recognition process	80	BCSF16E061	Analysis of image for segmentation	Learn to extract image into segmentation	
				BCSF16E005	Implement segmentation process.	Learn to deal with tools used in segmentation	
1	After segmentation steps, character recognition is very important stage in number plate recognition system to check for validation of character the characters and numbers were cut into blocks.	Number is extracted.	100	BSCSF16E005	Perform necessary database operations for validations.	Learn to deal with database	
				BSCSF16E061	Perform necessary database operations for validations.	Learn to deal with database	

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