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.	Installation of Ubuntu and eclipse IDE	Setup (hardware and software)	5%	BSCSF16E013	Installation of Eclipse	Use of Eclipse	
				BSCSF16E009	Installation of Ubuntu	Using Ubuntu as Operating System	
				BSCSF16E016	Installation of Ubuntu	Using Ubuntu as Operating System	
2.	Understandability and implementation of Ackley & Zakharov	Ackley & Zakharov function implementations	7%	BSCSF16E013	Code Implementation of Functions	Enhancement of coding experience in Mathematical functions approach.	
				BSCSF16E009	Understandability of Function`s Theory	Continuous, Convex, n-dimension Space and the Uni model of function.	
				BSCSF16E016	Understandability of Function`s Theory	Continuous, Convex, n-dimension Space and the Uni model of function.	
3.	Understandability and implementation of Griewank & Rastrigin	Griewank & Rastrigin function implementations	9%	BSCSF16E013	Code Implementation of Functions	Coding Experience in Mathematical Functions Approach.	
				BSCSF16E009	Understandability of Function`s Theory	Continuous, Convex, n-dimension Space and the Uni model of function.	
				BSCSF16E016	Understandability of Function`s Theory	Continuous, Convex, n-dimension Space and the Uni model of function.	
4.	Understandability and implementation of Dexon price function	Sum of different powers, Square sum & Dexon price function implementations	13%	BSCSF16E013	Code Implementation	Code	
				BSCSF16E009	Understandability of Function`s Theory	Continuous, Convex, n-dimension Space and the Uni model of function.	

Team

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				BSCSF16E016	Understandability of Function`s Theory	Continuous, Convex, n-dimension Space and the Uni model of function.	
5.	A Member Class that will be used for a Particle Functions.	Particle class (member functions)	20%	BSCSF16E013	Particle Implementation	Implemented	
				BSCSF16E009	Particle Class Implementation	Implemented	
				BSCSF16E016	Particle Class Implementation	Implemented	
6.	An Object function for to calculate and update the Velocity of Particle.	Function for updation of velocity	25%	BSCSF16E013	Functions for calculations results	Function Implementation	
				BSCSF16E009	Functions for calculations of velocity and its updating results	Velocity Calculating	
				BSCSF16E016	Functions for calculations of velocity and its updating results	Understanding of code	
7.	An Object function for to calculate and update the Position of Particle.	Function for updation of position	30%	BSCSF16E013	Updating of procedure for Particle class	Code Implementation until to updating velocity	
				BSCSF16E009	Understandability	Code Implementation until to updating velocity	
				BSCSF16E016	Understandability	Code Implementation until to updating velocity	
8.	Implementation Serial version of Particle Swarm Optimization.	Serial version of PSO for function optimization	40%	BSCSF16E013	Serial PSO	Algorithm understanding of serial version	
				BSCSF16E009	Serial PSO	Algorithm understanding of serial version	
				BSCSF16E016	Serial PSO	Algorithm understanding of serial version	
9.	Particle Fitness and Global and Local Position Functions.	Function for fitness calculating and finding local & global position		BSCSF16E013	Particle fitness calculations	Fitness Functions	
				BSCSF16E009	Global Position finding (gbest)	Global Position Finding	
				BSCSF16E016	Local (lbest)	Local Position Finding	
10.	Use of Map partition with index for data parallization	Map Partition for Parallization		BSCSF16E013	Map Partitions	Map Partitions	
				BSCSF16E009	Data Parallization	Data Parallization for Particle class	

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				BSCSF16E016	Understandings of Map Portioning	Map Partition	
11.	Implementation Parallel version of Particle Swarm Optimization.	Implementation of parallel PSO for function optimization		BSCSF16E013	Parallel PSO	Implementation of Parallel PSO	
				BSCSF16E009	Understandings of PSO Parallel	Implementation Parallel PSO	
				BSCSF16E016	Parallel PSO	Implementation Parallel PSO	
12.	Testing both versions of PSO Algorithms.	Testing		BSCSF16E013	Test on benchmark functions	Bench mark function	
				BSCSF16E009	Test on benchmark functions	Bench mark function	
				BSCSF16E016	Test on benchmark functions	Bench mark function	
13.	Tuning both versions of PSO Algorithms.	Tuning		BSCSF16E013	Tuning		
				BSCSF16E009	Tuning		
				BSCSF16E016	Tuning		
14.	Different Experiments with both PSO Algorithms.	Experiments		BSCSF16E013	Experiments		
				BSCSF16E009	Experiments		
				BSCSF16E016	Experiments		
15.	Results of Parallel Particle Swarm Optimization.	Results of parallel PSO		BSCSF16E013	Results of parallel PSO		
				BSCSF16E009	Results of parallel PSO		
				BSCSF16E016	Results of parallel PSO		
16.	Results of Comparative analysis of parallel PSO with serial PSO	Comparative Analysis of Parallel PSO with Serial PSO		BSCSF16E013	Comparison between Serial and Parallel PSO		
				BSCSF16E009	Comparison between Serial and Parallel PSO		
				BSCSF16E016	Comparison between Serial and Parallel PSO		

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