A HEURISTIC APPROACH FOR BLUE COLLARED JOB SCHEDULING USING WEIGHTED PRIORITIES

A PROJECT REPORT

Submitted by

MUKUNDARAM P. SRIDHAR AMIRNENI SUJITH PRABHU

In partial fulfillment for the award of the degree

of

BACHELOR OF TECHNOLOGY

in

INFORMATION TECHNOLOGY

EASWARI ENGINEERING COLLEGE, RAMAPURAM

ANNA UNIVERSITY: CHENNAI 600 025

APRIL 2017

ANNA UNIVERSITY: CHENNAI 600 025

BONAFIDE CERTIFICATE

Certified that this project report titled "A HEURISTIC APPROACH FOR BLUE COLLARED JOB SCHEDULING USING WEIGHTED PRIORITIES" is the bonafide work of "MUKUNDARAM P. (310613205050), SRIDHAR AMIRNENI (310613205076) and SUJITH PRABHU (310613205080)" who carried out the project work under my supervision.

SIGNATURE

SIGNATURE

Dr.K.Kathiravan, M.Tech., Ph.D.,

HEAD OF THE DEPARTMENT

Dept. of Information Technology Easwari Engineering College, Bharathi salai, Ramapuram,

Chennai-600 089

Mrs. R.Priyatharshini, M.E., (Ph.D.),

SUPERVISOR

Assistant Professor

Dept. of Information Technology

Easwari Engineering College,

Bharathi salai, Ramapuram,

Chennai-600 089

VIVA VOCE EXAMINATION

The viva voce examination of the project work, submitted by MUKUNDARAM P., Register Number: 310613205050, SRIDHAR AMIRNENI, Register Number: 310613205076 and SUJITH PRABHU, Register Number: 310613205080 is held on

INTERNAL EXAMINER

EXTERNAL EXAMINER

ACKNOWLEDGEMENT

We express our sincere thanks and gratitude to our Founder Chairman **Dr.T.R.PARIVENDHAR**, and our beloved Chairman **Dr.R.SHIVAKUMAR**, for their support and inspiration. We would like to convey our due respect and regards to our Principal and Head **Dr.K.KATHIRAVAN**, for his constant encouragement and guidance.

With a deep sense of gratitude, we would like to thank **Prof.G.RAMAKRISHNAN**, for his motivation, timely help and valuable suggestions. We would also like to thank our beloved professors **Prof.A.K.MARIAPPAN** and **Dr.D.SIVAKUMAR**, for their profound advice.

We owe our profound gratitude to our project supervisor Mrs.R.PRIYATHARSHINI, Assistant Professor, who took keen interest in our project work and guided us all along in bringing out this project in complete shape by providing all the necessary information for developing a good system.

We would like to sincerely thank our project coordinators **Dr.R.RADHA**, Assistant Professor and **Mrs.K.KAUSALYA**, Assistant Professor for their valuable assistance and support.

Finally, we would like to extend our token of appreciation to all the teaching and non-teaching staff of Department of Information Technology for their kind co-operation throughout the project.

ABSTRACT

The number of individuals within the unorganized sector has increased exponentially. It becomes more important with each passing day to provide them employment. The proposed system aims to overcome the difficulties faced by this stratum of society principally migration, variable pay scales, infrequent job opportunities, lack of proper information by using a heuristic approach for job scheduling. Though there is lot of approaches to job scheduling, our system when compared to the existing systems has been found to be efficient in terms of computation, complexity and output. A onetime input which will be collected from various workers through a registration form serves as the database with which various parameters shall be evaluated in order to filter and schedule various jobs pertaining to various requests from time to time. The heuristic algorithm has been developed keeping in mind the various constraints for evaluating the various parameters which ensure that scheduling is optimized to maximum efficiency. This will help in creating an automated system through which incoming job requests can be directed to the most suitable job worker.

TABLE OF CONTENTS

CHAPTER			PAGE NO	
	ABS	V		
	LIS	ix		
	LIS	T OF I	X	
	LIS	T OF A	xi	
1.	INT	1		
	1.1	GENE	ERAL	1
	1.2	OBJE	CTIVE	2
	1.3	ORGA REPC	ANISATION OF THE PROJECT PRT	3
	1.4	SUM	MARY	3
2.	LIT	ERAT	4	
	2.1	INTR	ODUCTION	4
	2.2	RELA	ATED WORKS	4
	2.3	SUMI	MARY	6
3.	PRO	OPOSE	7	
	3.1	INTR	ODUCTION	7
	3.2	PROP	OSED SYSTEM	7
	3.3	SYST	EM ARCHITECTURE	8
		3.3.1	User Authentication	9
		3.3.2	Skill Set Acquisition	9
		3.3.3	Heuristic Approach for Job Scheduling	11
			3.3.3.1 Current Status	12

			3.3.3.2	Skill Set	12	
			3.3.3.3	Expected Pay	12	
			3.3.3.4	Locality	12	
			3.3.3.5	Preference	13	
			3.3.3.6	Latest Assignment	13	
			3.3.3.7	Employee Review	13	
		3.3.4	DATAI	BASE SCHEMA DESIGN	14	
			3.3.4.1	Worker Table	14	
			3.3.4.1	Skill Table	14	
			3.3.4.1	Allocated Table	14	
			3.3.4.1	Employer Table	15	
			3.3.4.1	Job Table	15	
			3.3.4.1	Shift Table	15	
			3.3.4.1	E-shift Table	15	
	3.4	SUM	MARY		15	
4.	SYSTEM IMPLEMENTATION					
	4.1	INTRODUCTION 2 HARDWARE AND SOFTWARE SPECIFICATIONS				
	4.2					
		4.2.1	Hardwa	are Requirements	16	
		4.2.2	Softwar	re Requirements	16	
	4.3	TECH	INOLOG	HES USED	16	
		4.3.1	MySQI	٠	16	
		4.3.2	JavaScr	ript	18	
		4.3.3	phpMy	Admin	19	
		4.3.4	HTML		20	

	4.4	MOD	ULE IMP	LEMENTATION	21
		4.4.1	User Au	thentication	21
		4.4.2	Skill Set	Acquisition	22
		4.4.3	Heuristi Schedul	c Approach for Job ing	22
			4.4.3.1	Current Status	22
			4.4.3.2	Skill Set	22
			4.4.3.3	Expected Pay	23
			4.4.3.4	Locality	23
			4.4.3.5	Preference	23
			4.4.3.6	Latest Assignment	23
			4.4.3.7	Employee Review	23
	4.5	SNAF	PSHOTS		26
	4.6	SUM	MARY		30
5.]	PEF	PERFORMANCE ANALYSIS			
	5.1	INTRODUCTION			31
	5.2	TESTING			31
		5.2.1	System	Testing	31
		5.2.2	Function	nal Testing	32
	5.3	EXPE	ERIMENT	AL RESULTS	32
	5.4	SUM	MARY		34
6.	CO	NCLU	SION AN	D FUTURE WORK	35
	6.1	CON	CLUSION		35
	6.2	FUTU	JRE WOR	K.K.	35
	API	APPENDIX			
	REI	REFERENCES			

LIST OF TABLES

TABLE NO.	TITLE	PAGE NO.
4.1	Parameter Values	25
5.1	Performance Comparison	33

LIST OF FIGURES

FIGURE NO.	TITLE	PAGE NO.
3.1	System Architecture of Job Scheduling	8
3.2	Database Schema Design	14
4.1	Worker Registration (Personal Details)	26
4.2	Worker Registration (Shift Details)	27
4.3	Worker Registration (Skills Details)	27
4.4	Worker Login	28
4.5	Employer Registration (Personal Details)	28
4.6	Employer Login	29
4.7	Job Request Interface	29
4.8	Allocated Job Interface	30
4.9	Review System	30
5.1	Performance Comparison Graph	34

LIST OF ABBREVIATIONS

HTML Hypertext Markup Language

SA Simulated Annealing

GA Genetic Algorithm

AHP Analytic hierarchy process

NP Nondeterministic Polynomial

RAM Random Access Memory

CPU Central Processing Unit

SQL Structured Query Language

RDBMS Relational Database Management System

CSS Cascading Style Sheet