Capgemini

Defect Programmer Assignment

Software Requirement Specification (SRS) Document

Group 3rd

Batch: E2E-Manipal-Systems C CPP Linux Programming PT Aug 4th Batch 2

SPRINT 1

Implementation

Project Timeline

September 7th, 2022 to September 14th, 2022

//github.com/sreeharipavvatta/CGSprint1

Contents

1. INTRODUCTION

The introduction of the software requirement specification provides an overview of the entire software. The entire SRS with overview description purpose, scope, tools used and basic description. The aim of this document is to gather, analyze and give an in-depth insight into the complete **Defect Programmer Assignments** application by defining the problem statement in detail. The detailed requirements of the **Defect Programmer Assignments** application are provided in this document.

1.1 Purpose:The purpose of this document is to show the requirements for the Defect **Programmer Assignments** application, in which Defects are assigned to programmers depending on the functional area they are handling.

1.2 Intended Audience: This document is intended to be read by Client.

1.3Intended Use:

- Development Team
- Maintenance Team
- Clients

1.4Scope: This project aims to create the development of a Defect Programmer Assignments application where Clients of software development companies report defects in software they purchased. These defects are assigned to programmers depending on the functional area they are handling.

2. OVERALL DESCRIPTION

It is a**Defect ProgrammerAssignment** is used to find the defects in a program and to overcome them.This assigns the defects to programmer and change the status of defect from “open” to “assigned”. When the clients of a software development company report defects in software that they purchased, then these defects are assigned to programmers.The information on defects is available in multiple files then the filenames should pass command line arguments. The defects are assigned to programmers depending on the functional area they are handling.The defects are assigned to programmers to display along with the defect description,functional area, filed –on data type, Emp ID and Emp Name. The solution is built as a multi-file multi-directory solution. All codes are documented well, and the coding standards are to be followed (Usability, Reliability and Availability, Performance).Technical requirements are having to use dynamic memory allocation, suitable data structure to store defects, use multithreading& use POSIX- thread to create threads to

process multiple input files.The main purpose of this project is toovercome the defects in a program.

2.1 Assumptions and Dependency:

- System should have Ubuntu Linux installed.
- System should have either 4GB or more RAM.

3. SYSTEM FEATURES AND REQUIREMENTS

3.1 Functionality

3.1.1 DP01 |Assign_Defect: These defects are assigned to programmers depending on functional area they are handling. If more than one programmer is found, assigned to the first one.It calls **Validate_Defect_entries** function for each entry.

3.12DP02 |Defect_status_change: All "open" defects from defects files should be processed as follows - For every defect find programmer who is expert in defect's "functional area". Assign the defect to programmer and change status of defect from "open" to "assigned". If more than one programmer is found, assigned the first one.

3.1.3 DP03 |Display_Assigned_defectInfo:Defects assigned to programmers to be displayed along with defect description, module name, functional area, filed-on date type, Emp ID and EMP Name.

3.1.4DP04|Validate_Defect_entries: It will check whether the entry is valid or not. If not, it will callDisplay_Detected_InvalidEntry and Move_InvalidDefect and Discard_Defect_entries functions in the respected order.

3.1.5DP05 |Discard_Defect_entries: Therequested entrywill be detected and discarded from input file.

3.1.6DP06 |Display_Detected_InvalidEntry: For every invalid entry detected, this function will be called, and this will Display error messages for invalid entries.

3.1.7DP07 |Move_InvalidDefect: Requested defects entry from input files is detected and copiedto invalidDefect.txt file.

3.1.8DP08 |Copy_UnassignedDefects: It willCopy all the Unassigned Defects from input file to unassignedDefects.txt file.

3.1.9DP09 |Display_UnassignedDefects: It willDisplay all the unassigned Defects present in unassigned.

3.2 System Requirements

3.2.1. Tools to be used

i. C language

ii. POSIX Library is used for multithreading. Also, one Mutex should be used per programmer

iii. File Handling is used to read “defects” file, and “Employee” data and also to write assignments, invalid defects, and unassigned defects.

iv. Dynamic memory allocation is used for programming

v. CUnit, Valgrind, Make, and GDB are also used for making, analyzing and debugging the program

vi. System Programming

3.3 System Features:

i. **Supportability** - The system is built using C language.

ii. **Design Constraints** - The solution is built as a multi-file multi-directory solution. All codes are documented well and the coding standards are followed

iii. **Usability** – This program can be used for assigning work to Engineers as per the requirements and the domain of knowledge. The system can read any number of defect files given in the format and assign the work to the employees as per the requirement.

iv. **Reliability and Availability** – The system is available 24/7 and the user can use the system whenever he/she needs it. The user can avail of the functionalities of the program by providing the necessary files and also giving permission to read the employee data.

v. **Performance** – The system will work on the user’s terminal

4. DATA FLOW DIAGRAMS