

# IEEE CSDA Practice Exam

## Proposal

**Submitted to:**

Professor Francis T. Marchese

**Submitted by:**

J. Doe  
S. Adams  
G. Wash

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## Introduction & Background

This document provides an overview of our project, which is a web-based practice test system based on the IEEE CSDA Exam. The Certified Software Development Associate (CSDA) credential is intended for graduating software engineers and entry-level software professionals, and it serves to bridge the gap between educational experience and real-world work requirements. The concepts and knowledge areas of the examination were derived from a job analysis study, and cover knowledge areas contained within the Software Engineering Body of Knowledge (SWEBOK).

## About the CSDA Exam

The 4-hour test is comprised of 180 weighted questions and is intended to evaluate comprehension of the SWEBOK. The topic areas are grouped into the following knowledge areas from the SWEBOK, with each area provided a different weight:

- Software Requirements
- Software Design
- Software Construction
- Software Testing
- Software Maintenance
- Software Configuration Management
- Software Engineering Management
- Software Engineering Process
- Software Engineering Tools and Methods
- Software Quality
- Business Practices and Engineering Economics

The following test areas not in the SWEBOK:

- Computing Foundations
- Mathematical Foundations
- Engineering Foundations

## Problem We Are Solving

In studying for the exam, it proved difficult to find resources that tested knowledge before the exam, and available resources were either costly or only available in paper form. However, students need a quick and easy way to assess their progress before the test, which is also costly and only offered in two windows during the year.

## Our Solution

We will create an online practice test that will allow potential test takers to test their grasp of the knowledge areas by answering a subset of questions ( $\approx 20$ ). To do this, we will create a database of  $\approx 140$

potential questions, and each time a user takes the practice test the will be shown a new combination of questions. Practice test takers will be provided a weighted score based on knowledge area weights, as well as a report of correctly/incorrectly answered questions. Suggested reference materials for each question will be provided to the practice test taker so they can study further if needed, and a practice test taker will be able to take the test as many times as he likes.

The solution aims to be extendable, and we will incorporate the ability to add new questions to the already existing database and thus keep it up to date as the CSDA test evolves over time. The system can be used in conjunction with any other database of questions, allowing it to be a versatile tool for test takers studying for exams other than the CSDA as well.

## **Database of Questions**

We will base our questions on “IEEE Computer Society Real-World Software Engineering Problems: A Self-Study Guide for Today's Software Professional” and any other questions we find. These are not verbatim questions from the CSDA exam, but do provide a view into the types of questions asked.