

Research plan

Docker & Unit Testing



Name: Victoria C. A. Fong

Student number: 4576993

Class: S-A-RB-CMK 4

1 INTRODUCTION

This research is focused on learning about Code Testing in C# (Unit testing, System testing, end-to-end testing) and working with Docker. The main driver to conduct this research is that I want to gather knowledge on these topics I have never worked on before to be able to use this information to improve future projects. By learning how to test, I can verify and validate my work of its functionalities.

Furthermore, Docker has a lot of benefits, and a lot of people work with the tool nowadays. By getting the acquired experience from this research of working with docker, I can as well take this skill and use it for future projects.

2 RESEARCH QUESTIONS

This research plan is based on a main research question broken down into sub research questions. By answering these sub questions can the main question be answered.

2.1 MAIN QUESTION

How can I create a mineable viable product during the first half of the current software semester that uses Docker and code testing which includes unit, system and end-to-end testing in C# to learn how to improve the quality of future projects?

2.2 SUB QUESTIONS

- ❖ What is Docker?
- ❖ What is Unit Testing?
- ❖ What is System Testing?
- ❖ What is End-to-End Testing?
- ❖ What materials and sources benefitted fellow pierce in learning how to use Docker and Code testing for their projects?
- ❖ What minimal viable product can be made using Docker and Code Testing?

3 DOT FRAMEWORK

3.1.1 What is Docker?

Method	Strategy	approach	expectation
Library	Literature study	Finding general information online with relevant keywords to the question.	Information to answer the research question which also gives understanding to the topic.
Field	Problem Analysis	Making sure the problem is clear to what I would like to find out from answering this research question.	By making sure the question is clear to what problem I want to solve, I can make sure that I don't lose track in the research I am doing.

3.1.2 What is Unit Testing?

Method	Strategy	approach	expectation
Library	Literature study	Finding general information online with relevant keywords to the question.	Information to answer the research question which also gives understanding to the topic.
Field	Problem Analysis	Making sure the problem is clear to what I would like to find out from answering this research question.	By making sure the question is clear to what problem I want to solve, I can make sure that I don't lose track in the research I am doing.

3.1.3 What is System Testing?

Method	Strategy	approach	expectation
Library	Literature study	Finding general information online with relevant keywords to the question.	Information to answer the research question which also gives understanding to the topic.
Field	Problem Analysis	Making sure the problem is clear to what I would like to find out from answering this research question.	By making sure the question is clear to what problem I want to solve, I can make sure that I don't lose track in the research I am doing.

3.1.4 What is End-to-End Testing?

Method	Strategy	approach	expectation
--------	----------	----------	-------------

Library	Literature study	Finding general information online with relevant keywords to the question.	Information to answer the research question which also gives understanding to the topic.
Field	Problem Analysis	Making sure the problem is clear to what I would like to find out from answering this research question.	By making sure the question is clear to what problem I want to solve, I can make sure that I don't lose track in the research I am doing.

3.1.5 What materials and sources benefitted fellow pierce in learning how to use Docker and Code testing for their projects and how it can aid me?

Method	Strategy	approach	expectation
Library	Community Research	Searching up what other people online used by using for instance Stack Overflow.	Sources recommended by the online community that worked for them.
Library	Expert Interview	Asking Software teachers at Fontys for advice on the best sources to use.	To receive materials used from previous semesters for teaching students to work with docker and unit testing.
Field	Document Analysis	Asking for materials and sources that fellow pierce have used.	To receive helpful sources that can help me learn to use Docker and create unit tests.
Field	Interview	By asking fellow pierce questions based on sources that can help me.	To receive advice and source that I can use from their experience that have worked for them.

3.1.6 What minimal viable product can be made using Docker and Code Testing?

Method	Strategy	approach	expectation
Library	Literature study	Finding general information online with relevant keywords to the question.	By looking at online sources to other projects will it give me ideas to how the minimal viable product will be made.
Library	Expert Interview	Asking my teachers at Fontys for advice on the minimal viable product I will be making for feedback.	With the advice and feedback from my teachers, it will help me give a clear picture that the to be made product is obtainable.
Workshop	Prototyping	By determining what kind of prototype suits my needs best.	A clear view of what I would like to learn from my prototype.
Showroom	Peer Review	Organizing time for my teachers to look at my prototype during and at the end of creation for feedback.	To make sure I am on the right track with creating the prototype.