# SWEN902 – Lab 3

## Introduction:

This lab is focuses on implementing a continuous integration pipeline that when code is committed to a version control system it will build, test, package and deploy the code. It will describe the use of a continuous integration tool and any supporting software required to aid this tool to meet the objectives. The chosen tool for the solution and one other tool will be contrasted in the conclusion. The tools used will be utilized in practice for the lab and the conclusion will be a high level overview of the system with personal reflections on the value it delivers in terms of a DevOps solution as well as a reflection on continuous integration as part of the DevOps process.

## Aims/Objectives:

* Research and explore available solutions for continuous integration in a DevOps pipeline
* Choosing a suitable tool to achieve the objectives of this lab
* Demonstrate in practice how the tool achieves this
* Exploring the concept of continuous integration as a development tool and process in the DevOps culture.
* Gain a better understanding of continuous integration and the tools available and the part they play in delivering high quality software.
* Draw a conclusion of this lab and reflect on the value of the tools and any learnings achieved during the research
* Gain a better personal understanding of the tools and a deeper knowledge of how it integrates into the software development lifecycle

## Method:

* Researched continuous integration tools that can be used in a pipeline and how they can achieve the objectives.
* Decided on a language and framework that will be used to provide a solution that can be used to demonstrate the CICD pipeline.
* Chose one tool that will be implemented to demonstrate continuous integration and another tool that can be used as a comparison throughout the process.
* Created a repository to host the solution.
* Created a C# ASP.Net Web App using the default Visual Studio 2022 template targeting .Net 7
* Followed Microsoft Learn tutorial cited in conclusion to build up a working minimal API to be used to demonstrate continuous integration.
* Downloaded Postman desktop app to use for testing API.

## Results:

* State results here

## Conclusion:

State conclusion here.

## References:

[Building and testing .NET - GitHub Docs](https://docs.github.com/en/actions/automating-builds-and-tests/building-and-testing-net)

[Tutorial: Create a minimal web API with ASP.NET Core | Microsoft Learn](https://learn.microsoft.com/en-us/aspnet/core/tutorials/min-web-api?view=aspnetcore-7.0&tabs=visual-studio)

[Environment variables - GitHub Docs](https://docs.github.com/en/actions/learn-github-actions/environment-variables)

Reference one (2022) Reference one. Available at: https://referenceone.com (Accessed 19 November 2022)

## Appendices: