**Programming Language Research Project**

**Phase 2**

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# Introduction

This assignment is in reference to the Course Section Information and the assignment tasks.  
For the Development Environment Changes, IDE changes, such as IDE type and version, will be documented if there are any. Any changes such as using a different programming language or framework can be done.  
For the Research and Learning Resources Task, Research will be performed to find learning resources and examples on N-Layered and/or Model View Controller architectures in order to determine what architecture will be used in the Practical Project.  
For the WBS and Gantt Chart Task, A new WBS will be created to break down Practical Project 2 tasks into smaller sub-tasks. A new Gantt chart will also be created to accommodate the WBS.

All documentation is in IEEE format.

# Development Environment Changes

The following programs for development have changed:

* Windows 11 Home (Version 23H2, Build 22631.4169 🡪 Build 22631.4249)
* Node.js (Version 21.7.2 🡪 Version 22.9.0)

Alternative:

* Visual Studio 2022 Community (Version 17.11.3 🡪 Version 17.11.4)

All other program versions remain the same.

The following programs for development will be added:

* mysql2 npm (Version 3.11.3)
* MySQL Workbench 8.0 CE (Version 8.0.38, Build 4270059 64bits)
* Postman (Version 11.12.0)

# Research and Learning Resources

The following websites have been decided upon for research:

1. <https://ctrly.blog/nodejs-layered-architecture/>. [1]
2. <https://medium.com/@road24mil/the-essential-knowledge-n-tier-architecture-for-full-stack-javascript-node-js-engineers-54cdab0adc7e>. [2]
3. <https://www.geeksforgeeks.org/model-view-controllermvc-architecture-for-node-applications/>. [3]
4. <https://blog.logrocket.com/building-structuring-node-js-mvc-application/>. [4]

The first two sites listed detail N-Layered architecture, and the last two sites listed detail Model View Control Architecture. N-Layered architecture will be used in this case.

The C.R.A.A.P Test is used below for determining website credibility and reputation.

* Ctrl-Y is a blog created by Yari Antonieta that curates mostly to web programming.
  + Ctrl-Y was first published in 2018. The page “Layered Architecture in Node.JS” was published in March 27, 2021. The latest post on Ctrl-Y was published on February 15, 2023. Since it was written manually, the information may be outdated eventually.
  + The page still has relevance, due to the given explanation about Layered Architecture, where the people that mainly look at the page and overall the Ctrl-Y blog are web developers.
  + Yari Antonieta, the author of the blog and page, is a Bachelor of Industrial Engineering who switched to becoming a web developer. Given that a LinkedIn nor other related platform profile does not exist for them, the blog’s “About Me” page is the best source of information about the author [5].
  + The information contains code snippets for use in Node.JS, and the code snippets serve as practical examples to use.
  + The purpose of the blog is to educate people and share knowledge with them about given web development topics and how to use the content presented for various APIs/Softwares. There is bias in the articles, but not too much to be considered non-credible.

Ctrl-Y has some biased information in the articles, including the use of “I” or other personal-referring words, which makes it strike 1 in the strike-system credibility checklist. Other than that, it succeeds in the 2-strike and 3-strike credibility checklist and CRAAP test.

* Medium is an online platform for publishing and promoting stories from worldwide and was first launched in 2012 by Ev Williams.
  + The post itself was made on August 20, 2023. Given that it was written manually, the information may be outdated eventually.
  + The information has the same relevance, purpose and accuracy as the Ctrl-Y blog post, though Medium is more known in the world and Medium’s post is more simple to read so it’s easier for non-developers to understand N-Layered Architecture for JavaScript and Node.JS.
  + The author is simply known as NiK or “@road24mil”, with no last name given. This is an invalid author and takes away the credibility of the blog post.
  + The information is expected to be accurate in order for people to follow along without much issue, especially since Medium is well-known.

The Medium post lacks an author, and also has “.com” in the url, which makes it strikes 1 and 2 in the strike-system credibility checklist. Other than that, it fails in the 2-strike credibility checklist and CRAAP test but succeeds in the 3-strike credibility checklist and CRAAP test.

* Geeks for Geeks is a computer science oriented site made for students and professionals.
  + The page itself was made on June 14, 2018, but has been updated on September 20, 2024. Given the recent update, the information provided supports the latest Node.JS version and documentation.
  + Geeks for Geeks has been relevant among computer programmers and scientists for it’s well-documented and detailed pages, including examples where needed to demonstrate given documented and provided sources of different computer programming languages.
  + Sandeep Jain, the author of Geeks for Geeks, is an educator and software developer who had the passion to teach students to learn about software.   
    Parikshit Hooda is the author of the page and is a software programmer. Hooda and Jain have a LinkedIn account where they can be found there [6] [7].
  + The information on the page, aside from explanation, also shows practical examples on how to achieve a Model View Control for Node.JS.
  + The purpose of the page is the same as the Ctrl-Y blog (see above), to educate people, but in this case for MVC for Node.JS.

GeeksforGeeks is well known in the computers and technology industry. It succeeds in the 2-strike and 3-strike credibility checklist and CRAAP test.

* LogRocket is an analytical service platform that provides developer assistance for software projects and applications in order to improve user experience, such as error tracking and product.
  + The page creation date and update date are both April 23, 2024 somehow, which does not match properly with credibility standards.
  + The information has some of the same relevance, purpose, and accuracy as GeeksforGeeks, though is not updated most recently to provide the steps for the most recent Node.JS framework.
  + Precious Luke, the author of the article, is a Back-End Developer. Shalitha Suranga, the editor of the article, is a computer scientist and programmer. Both people have LinkedIn profiles that can be viewed, so more information about them can be found there [8] [9].
  + The purpose of the page is the same as GeeksforGeeks, where developers get educated on the Model View Controller and are provided practical instructions on how to do it.

LogRocket has “.com” in the URL, which makes it strike 1 in the credibility checklist and CRAAP test, but succeeds in the 2-strike and 3-strike credibility checklist and CRAAP test.

# WBS and Gantt Chart

1. Phase 2: Project Initialization Continued
   1. Research, Learning
      1. Modifying a Simple Program
      2. Language Basics: Architecture
      3. Language Coding Style
      4. Language Commenting Style
   2. Development, Learning
      1. Modifying a Simple Program Based on Architecture
   3. Testing
      1. Verifying Program Output Meets Expectations
   4. Documentation
      1. Program Comments
      2. Screenshots of Program Running
      3. Writing MS Word Document
   5. Delivery
      1. Submission of Practical Project Phase 2

A screenshot of a computer

Description automatically generated

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