Learning Guide Unit 8

Reading Assignment

As you read through the resources and watch the videos, consider the following:

1. Why is symbol resolution a critical aspect of digital systems?
2. How does symbol resolution influence microprocessor architecture, particularly in terms of instruction execution and addressing?

Read:

1. *Arun. (2016, July 1). Symbol resolution during link-editing.* Binary Dodo.

   - This article talks about the symbol resolution during the link-editing phase.

2. Bhargav, N. (2023, March 20). *Compile. Linker, Assembler and Loader*. Baeldung.

   - This article explores the roles of four essential components in executable program generation: the compiler, assembler, linker, and loader.

3. *Fernando, J. (2023, July 7). Assembly language.* Investopedia.

   - This article talks about what assembly language is and how assembly languages work.

4. Juikar, S. (2020, April 20). Types of compilers. *LinkedIn.*

   - This blog will help you to explore the types of compilers and elaborate on each one in detail.

5. Lithmee. (2018, November 20). *What is the difference between single pass and multipass compiler?* Pediaa.Com.

   - This article delineates the fundamental disparity between single-pass and multipass compilers in their approach to translating high-level programming languages into machine code.

6. Papa, K. (n.d.). *Delving into assembly linking and its functions.* MarketSplash.

   - This article explores assembly linking, a vital step in software development.
   - It covers fundamental aspects such as assembly linking basics, the role of linkers in programming, static vs. dynamic linking, and the benefits of using linkers.
   - It emphasizes the importance of organized object files, descriptive symbols, and avoiding global variables.

7. Preston, R. 2023, March 11). *What is assembly language? (With Components and Example)*. Indeed.

   - This article talks about assembly language with the components and by providing examples.

8. Thakkar, M. (2022, May 3). *What is assembly language? A Quick Overview*. Infosec Insights.

   - This article talks about the meaning of assembly language and gives a brief overview on assembly language.

9. WatElectronics. (2020, April 27). *What is a microprocessor: Architecture, Types and its Applications*. WatElectronics.com.

   - This article gives a detailed description of the Microprocessor Architecture and its applications.

Videos:

1. Kanich, C. (2020, September 2). *How do linkers resolve symbols? Systems Programming CS Lecture* [Video]. YouTube.
   - In this video, you will gain an understanding of symbol resolution in systems programming through linkers. You will also see an illustration of symbol binding and learn how to resolve symbols.