

SG400 Compiler & Interpreter Design

KGA #2: Compilers and Interpreters in Games Research

This assignment supports the following course outcomes:

- Distinguish between a compiler and interpreter and how computers execute the programs differently.
- Explain how compilers and interpreters convert a high-level programming language to the machine language that a computer is able to execute.
- Evaluate the role of compilers and interpreters in the development of a game product.

Assignment Overview

In this assignment you will use library resources, the internet, or other legitimate sources of information to research compilers and interpreters and the role that they play in the game development process. You will discuss in general how compilers and interpreters convert a high-level programming language to the machine language that a computer is able to execute. Be sure to cite all sources.

You will then choose an area of game development to research and relate it back to compilers and interpreters. Utilizing library resources, the internet, or other legitimate sources of information write a report and present it to the class.

Some of the possible topics include:

1. 3D Game Engines
2. Virtual Machines
3. DirectX 9.0
4. Vector Mathematics
5. AI programming
6. Engine Programming
7. Programming Languages
8. Audio Programming
9. Net Play
10. OpenGL

Deliverables

Generate a written report at least 4 pages in length and should include the following elements:

- Compare and contrast compilers and interpreters and discuss how each are used.
- Briefly explain how compilers and interpreters work.
- Briefly describe the chosen topic and its role in the overall game development process.
- Discuss the role that compilers and interpreters play with the chosen topic.

Grading

The following grading rubrics will be used to evaluate your assignment. Your instructor will provide you with these rubrics along with this assignment handout.

Content Grading Rubric - 80% of assignment grade
Written Report Grading Rubric - 20% of assignment grade

Resources

Library Resources

Mak, Ronald. Writing Compilers and Interpreters – An Applied Approach Using C++ - Second Edition. John Wiley & Sons, Inc., 1996.

Lex and Flex lexical analyzer compiler compilers

(<http://dinosaur.compilertools.net/>)

Bison and YACC parser compiler compilers (<http://dinosaur.compilertools.net/>)