

**Compiler Theory and Practice**

**Course Assignment**

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\*B.Sc. It (Hons) Artificial Intelligence (Second Year)

Study-unit: **Object Oriented Programming**

Code: **CPS2000**

Lecturer: **Dr Sandro Spina**

Table of Contents

[Task 1 - Table-driven lexer 3](#_Toc133218455)

[Task 2 - Hand-crafted LL(k) parser 4](#_Toc133218456)

[Task 3 - AST XML Generation Pass 4](#_Toc133218457)

[Task 4 - Semantic Analysis Pass 4](#_Toc133218458)

[Task 5 - PixIR Code Generation Pass 4](#_Toc133218459)

[Evaluation and Testing 4](#_Toc133218460)

# Implementation

Please note that the required **PixArDis Compiler** was programmed in the **C++ programming language**. Furthermore, the implementation has the following hierarchy of files:

The following are the source code files used:

1. ASTNodes.cpp
2. Lexer.cpp
3. Token.cpp
4. Parser.cpp
5. CodeGeneratorVisitorNodes.cpp
6. SemanticVisitorNodes.cpp
7. XMLVisitorNodes.cpp
8. SymbolTable.cpp
9. MainClass.cpp

The following are the header files used:

1. ASTNodes.h
2. HeaderFile.h
3. VisitorNodes.h
4. SymbolTable.h

The following are the csv table files used:

1. IdentifierTable.csv
2. CAT.csv
3. TokenTable.csv
4. TransTable.csv

1. CMakeLists.txt
2. PixArLang.txt - Text file which holds the PixArLang code to compile.

# Task 1 - Table-driven lexer

# Task 2 - Hand-crafted LL(k) parser

# Task 3 - AST XML Generation Pass

# Task 4 - Semantic Analysis Pass

# Task 5 - PixIR Code Generation Pass

# Evaluation and Testing

Chart, diagram

Description automatically generated

Table

Description automatically generated with low confidenceGraphical user interface, application

Description automatically generatedA screenshot of a computer

Description automatically generated with low confidence

Table

Description automatically generated

Text

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Plagiarism Declaration Form