Code Transformation and Optimization - Notes

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March 2024

Preface

Every theory section in these notes has been taken from two sources:

- None

About:

 GitHub repository

Contents

1 Introduction

1.1 Why, When, What, Where?

The introduction to this course begins with some basic questions.

Why compiling?

Although it's a trivial question, the reason is not so clear. You could choose interpreters in spite of compilers. Well, actually the **goal of an interpreter is to read one statement/line of code at a time and perform the specified actions**.

⚠ Disadvantage

There is a **short delay before execution starts**.

✔ Advantages

We can do **interactive execution** (in other words, we can execute partially written code). Also, the interpreter **avoids compilation overhead if the code is not executed**.

In contrast, the **goal of a compiler is to translate a compilation unit into machine code**.

✔ Advantages

Optimizes across different statements; **faster execution** once the code is compiled; finally, the **compilation needs to be performed only once**.

References

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