**Compiler Design Lab**

**Phase-I Report**



***Language*: SQL**

**Team Members:**

**Ganesh sehsa sai Akhil . K : AP21110010931**

**Lokesh . T : AP21110010956**

**Sai Amruth . D : AP21110010962**

**Sai Dheeraj . J : AP21110011244**

**Under Guidance of :**

**Dr.Jaya Lakshmi Tangirala**

**Introduction:**

A SQL compiler, designed in C, is a software tool that translates SQL (Structured Query Language) queries into executable code for a database system. It parses and optimizes SQL statements, generating efficient query plans for data retrieval and manipulation. This compiler is crucial in enabling seamless communication between applications and relational databases.

**Data Types Available in Language**:

1. Char or CHAR
2. Int or INT
3. Float or FLOAT
4. Bit or BIT
5. Timestamp or TIMESTAMP
6. VARCHAR(size)

**CFG for Creating tables in database**:

database\_name → (table name) | (table name)\*

database\_statement → CREATE DATABASE <database\_name>;

data\_type → int | char | float | bit | float | double | date | timestamp |

varchar(255)table\_name → (table name) | (table name)\*

variable\_name → (variable name) | (variable name)\*

declaration → <row\_name> <data\_type> | (<row\_name>

<data\_type>)\*

create\_table → <database\_statement>

CREATE TABLE <table\_name>(

<declaration>,

)

**Types of CFG:**

1. For Creating Table
2. For Dropping or removing table
3. For Rename Table
4. For Select table
5. For insert values in a column

**Language Used :** Basic Syntax of **C**

**Data Types:**

1. Scalar
2. Secondary or Derived or Structured
3. User defined
4. Void or empty
5. Pointer

**Parser Design :**

Parser is that phase of the compiler which takes token string as input and with the help of existing grammar, converts it into the corresponding parse tree. Parser is also known as Syntax Analyzer.

**Semantic Actions :**

Semantic analysis is the task of ensuring that the declarations and

statements of a program are semantically correct, i.e, that their

meaning is clear and consistent with the way in which control

structures and data types are supposed to be used.

**Syntax of Target Language:**

You'll need to define the syntax and structure of the target language that your compiler will generate. This could be c Programming Language.

.

**Implementation:**

We have implemented Lex Code and Yacc Code…