COMP 520 Project - Milestone #3

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Implementation Summary

For this milestone we implemented the following:

1. SQL event queries and their instantiation in header & class files "events.h" and "events.c"
2. SQL queries for doctors, patients and diagnosis (used sqllite3 lib in python)
3. code generation infrastructure as defined per header file "codegen.h" to output python code
4. the following computations implemented in "codegen.c": *if, foreach loop, complex foreach loop and declaration statements*
5. integration with "main.c" to output foo.py script in same path directory as input foo.onc program
6. 2 benchmark programs

Design Decisions

For this milestone we decided to define our event queries, written in SQL syntax in a separate module to be called upon at code generation time. In the WHERE clause of these queries is where the filter information must be applied. For this, at the beginning of code generation, a method was implemented for translating the final filter fields to their appropriate SQL comparator substring. For example, "birthYear: 1992 to 2010" would result in the SQL WHERE clause: "WHERE birthYear >= 1992 AND birthYear <= 2010".

As for the events themselves, they are created by joining the required fields as specified in the events document. The full query is then created by appending the event query to the WHERE clause as specified by the filter section.

For our computation section we implemented the outermost for loop python code corresponding to looping on the results of an SQL query. These SQL queries, for the meantime, appear above the method declaration in python as the results are likely to be accessed multiple times in the computation section. This section can likely be optimized so that unused queries are removed and never added to the python code.