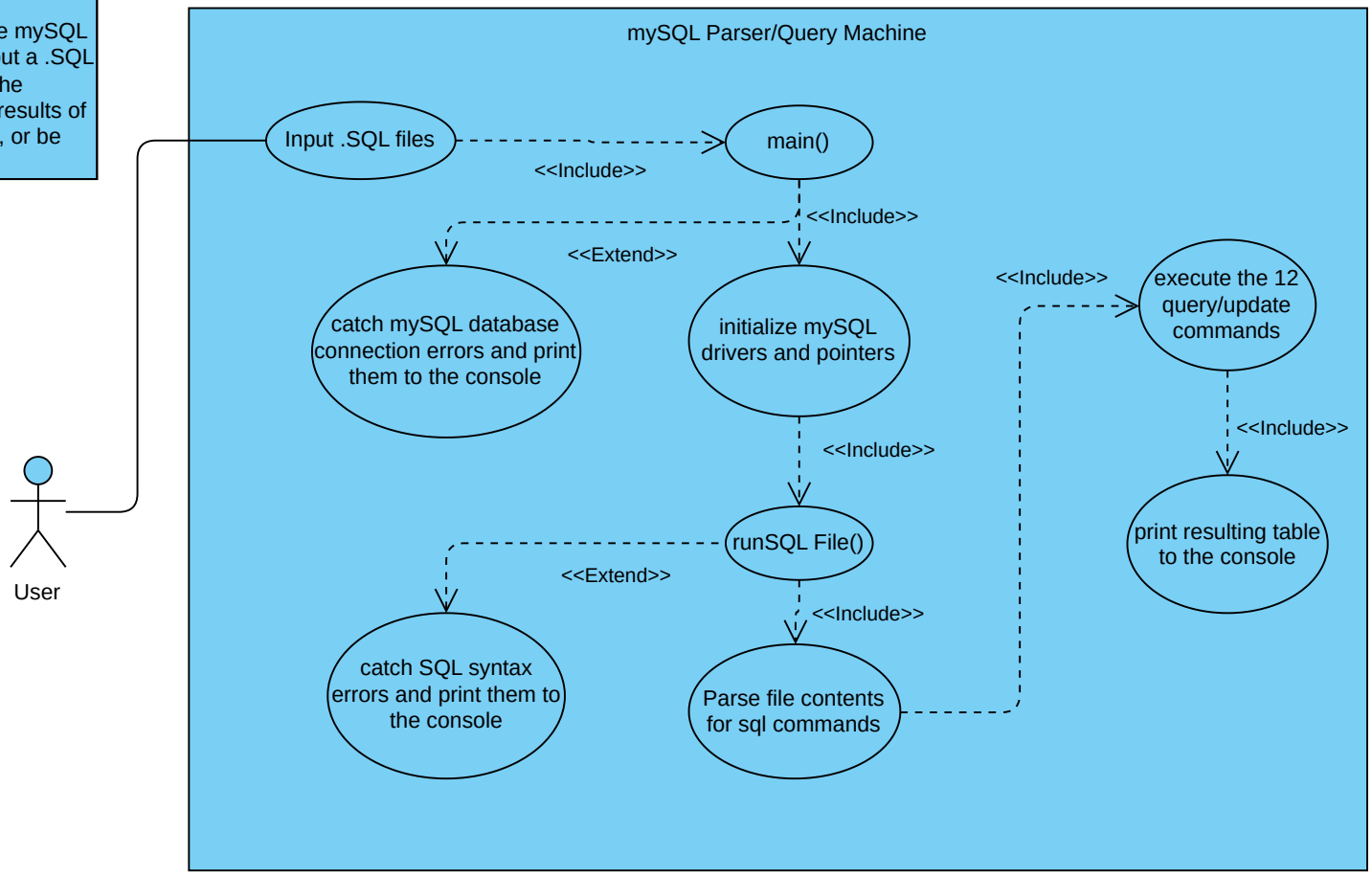
Breif description:

This diagram describes the interaction of the user with the mySQL Parser/Query Machine. The user's only use case is to input a .SQL file containing a table that is in the same format given in the assignment 7 instructions. The user will then recieve the results of 12 queries on those databases printed out to the console, or be greeted with some mySQL syntax errors.

Detailed description:

This use case diagram shows the flow of data and program control that takes places when the user inputs the necessary 5 .SQL files into this C++ program. First, the 5 input files are hard-coded into main, so all the user has to do is move the .SQL files to the same running directory as assignment7.cpp. After that, the mySQL drivers and pointers are initialized using the mySQL imported libraries and then the 5 .SQL files are handed to the runSQLFile function. This function looks through the .SQL files and extracts only the commands it needs that are ';'-terminated. These commands result in 5 tables being added to my mySQL database. Next, main then runs the 12 queries detailed in the assignment description and prints the resulting tables to the console. In both main() and runSQLFile(), there are try-catch blocks that catch any mySQL-related errors and print them to the console using the .what() library function.



Description of the 12 Queries:

1: Retrieve all students majoring in 'IS', 2: Retrieve the student numbers of students who have enrolled in 2+ courses from the Enrollment table, 3: List names of all faculty who were hired more than 15 years ago, 4: Retrieve all course numbers from the Offering table that were offered in Summer 2020, 5: List names of all faculty who live in zip code 98114, 6: Retrieve the second-highest GPA from the Student table, 7: List names individuals who appear in both the Student and Faculty tables, 8: Retrieve the student number, first and last names, and the number of selected courses from the Student and Enrollment tables, 9: Retrieve the first and last names of professors, along with their salaries for the top three highest-paid professors from the Faculty table, 10: Retrieve all student information from the Student table for students who do not have any enrollment records in the Enrollment table, 11: Insert Alice Smith into the Student table and then show all student data, and 12: Update Bob Norbert's City and State and then show all student data.