

Submit Program Sequence Diagram
Team: Sizzling Syntax

BASIC COURSE:

The User clicks the submit button on the Program Page.

The System compiles and executes the source code.

The System then verifies the output with the Database Management System.

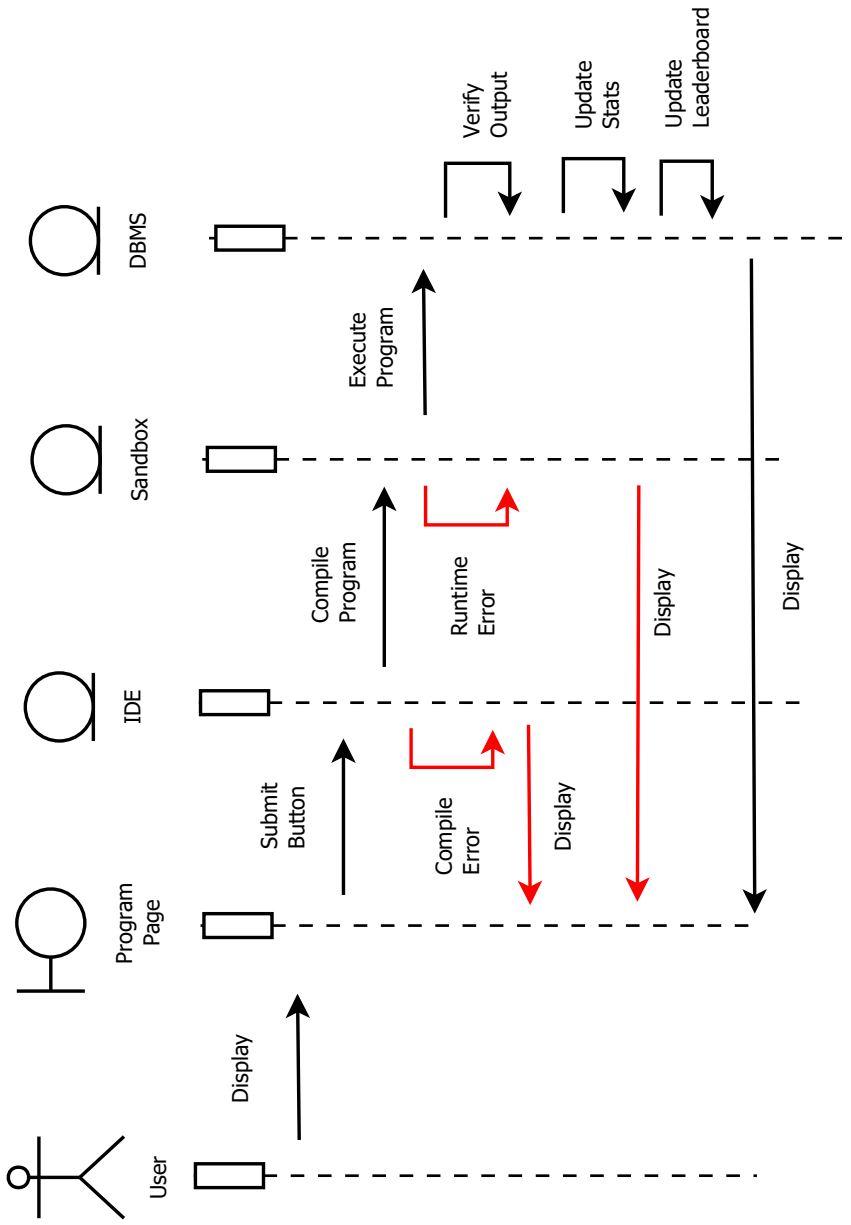
The System then updates the stats and leaderboards.

The System then displays a message to the user indicating the result of their submission.

ALTERNATE COURSES:

Compilation/Run Time Error:

The System displays a screen with the errors from the compiler and keeps the User on the page for the problem.



```
sequenceDiagram
    actor User
    participant ProgramPage as Program Page
    participant IDE
    participant Sandbox
    participant DBMS

    User->>ProgramPage: Display
    activate ProgramPage
    ProgramPage->>IDE: Submit Button
    deactivate ProgramPage
    activate IDE
    IDE->>Sandbox: Compile Program
    deactivate IDE
    activate Sandbox
    Sandbox->>DBMS: Execute Program
    deactivate Sandbox
    activate DBMS
    DBMS-->>DBMS: Verify Output
    DBMS-->>DBMS: Update Stats
    DBMS-->>DBMS: Update Leaderboard
    deactivate DBMS
    DBMS-->>Sandbox: Runtime Error
    deactivate DBMS
    activate Sandbox
    Sandbox-->>IDE: Display
    deactivate Sandbox
    activate IDE
    IDE-->>ProgramPage: Display
    deactivate IDE
    activate ProgramPage
    ProgramPage-->>User: Display
    deactivate ProgramPage
```

The diagram illustrates the sequence of interactions for submitting a program. It involves five lifelines: User, Program Page, IDE, Sandbox, and DBMS. The process begins with the User displaying the Program Page. The Program Page then triggers the IDE to click the Submit Button. The IDE sends a Compile Program message to the Sandbox. The Sandbox then sends an Execute Program message to the DBMS. The DBMS performs self-actions for Verify Output, Update Stats, and Update Leaderboard. It then returns a Runtime Error to the Sandbox. The Sandbox sends a Display message to the IDE, which in turn sends a Display message to the Program Page. Finally, the Program Page sends a Display message to the User.

