Program Report for CSC 3110 Project #1:
Rock-Paper-Scissors-Lizard-Spock

Language Selection:

I selected Scheme to implement this project because it is the language I have the most practice with. Scheme's functional programming paradigm aligns well with the modular and abstract design required for the project. IThe ability to define recursive functions also made it easier to handle game loops and repeated rounds when needed.

Challenges in Implementing the Program:

Despite being comfortable with Scheme, there were some challenges in the implementation:

1. **Input Handling**: Scheme's `read` function returns symbols by default, while string operations like `string-append` expect string inputs. I had to use `symbol->string` to convert user input to strings. Handling these type conversions was more cumbersome than in some other languages where string handling is more straightforward.
2. **Error Handling and Input Validation**: Scheme has less built-in support for user-friendly error messages compared to languages with more structured exception handling (e.g., Python or Java). I had to carefully design loops to handle invalid inputs and recursively prompt users until they entered valid gestures or points.
3. **Game Flow Control**: Managing the game loop and keeping track of rounds, scores, and re-throwing on ties required recursive function calls. Scheme's functional nature means there is less focus on traditional loops found in other languages (e.g., `while` or `for` loops), so recursion had to be used to manage game progression.

Instructions for Running the Program:

1. **Setup**:
    - Ensure you have DrRacket installed on your system. DrRacket is a programming environment for Racket and Scheme.
    - Open the `.rkt` file in DrRacket.
2. **Running the Program**:
    - Set the language to **Racket** (or Scheme if you're using a different version).
    - Click **Run** in DrRacket.
3. **Game Interaction**:
    - The game will display a welcome message and print the rules.
    - Enter the names of Player 1 and Player 2 when prompted.
    - Enter the number of points required to win the game.
    - For each round, both players will enter their gestures (using numbers 0-4).
    - The program will determine the winner of the round and update the score.

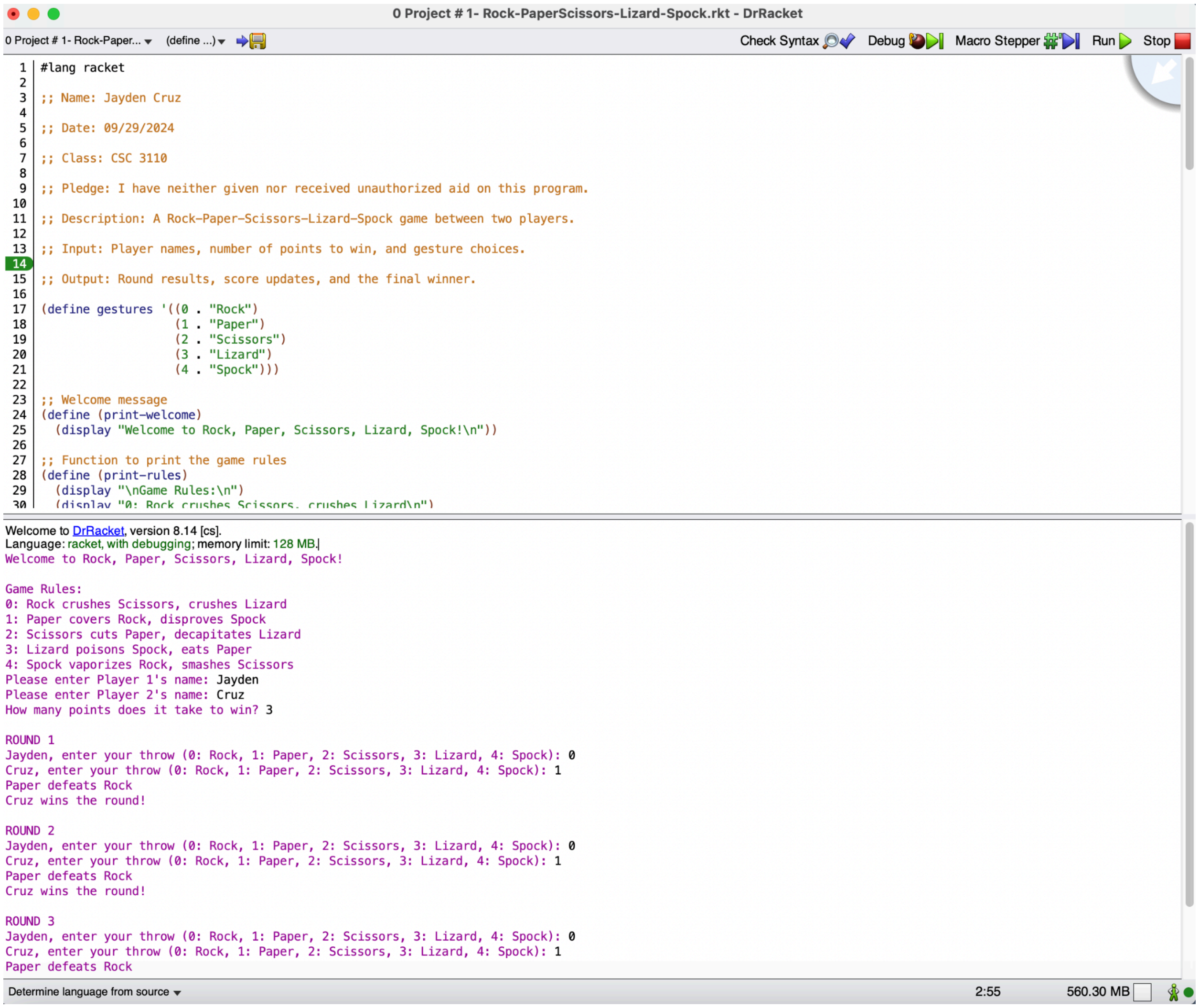
- ○ The game continues until one player reaches the set number of points.
- ○ The final winner is declared, and the game ends.

Development Platform:

- I used **DrRacket** version 8.14 to develop and run the program on my local machine.

Screenshot of Program Running:

This report outlines the selection of the language, challenges faced, and instructions for running the program effectively.


0 Project # 1- Rock-PaperScissors-Lizard-Spock.rkt - DrRacket
0 Project # 1- Rock-Paper...
(define ...)
Check Syntax
Debug
Macro Stepper
Run
Stop
Determine language from source
2:55
560.30 MB

```
#lang racket

;; Name: Jayden Cruz

;; Date: 09/29/2024

;; Class: CSC 3110

;; Pledge: I have neither given nor received unauthorized aid on this program.

;; Description: A Rock-Paper-Scissors-Lizard-Spock game between two players.

;; Input: Player names, number of points to win, and gesture choices.

;; Output: Round results, score updates, and the final winner.

(define gestures '((0 . "Rock")
                   (1 . "Paper")
                   (2 . "Scissors")
                   (3 . "Lizard")
                   (4 . "Spock")))

;; Welcome message
(define (print-welcome)
  (display "Welcome to Rock, Paper, Scissors, Lizard, Spock!\n"))

;; Function to print the game rules
(define (print-rules)
  (display "\nGame Rules:\n")
  (display "0: Rock crushes Scissors, crushes Lizard\n")
```

```
Welcome to DrRacket, version 8.14 [cs].
Language: racket, with debugging; memory limit: 128 MB.
Welcome to Rock, Paper, Scissors, Lizard, Spock!

Game Rules:
0: Rock crushes Scissors, crushes Lizard
1: Paper covers Rock, disproves Spock
2: Scissors cuts Paper, decapitates Lizard
3: Lizard poisons Spock, eats Paper
4: Spock vaporizes Rock, smashes Scissors
Please enter Player 1's name: Jayden
Please enter Player 2's name: Cruz
How many points does it take to win? 3

ROUND 1
Jayden, enter your throw (0: Rock, 1: Paper, 2: Scissors, 3: Lizard, 4: Spock): 0
Cruz, enter your throw (0: Rock, 1: Paper, 2: Scissors, 3: Lizard, 4: Spock): 1
Paper defeats Rock
Cruz wins the round!

ROUND 2
Jayden, enter your throw (0: Rock, 1: Paper, 2: Scissors, 3: Lizard, 4: Spock): 0
Cruz, enter your throw (0: Rock, 1: Paper, 2: Scissors, 3: Lizard, 4: Spock): 1
Paper defeats Rock
Cruz wins the round!

ROUND 3
Jayden, enter your throw (0: Rock, 1: Paper, 2: Scissors, 3: Lizard, 4: Spock): 0
Cruz, enter your throw (0: Rock, 1: Paper, 2: Scissors, 3: Lizard, 4: Spock): 1
Paper defeats Rock
```