

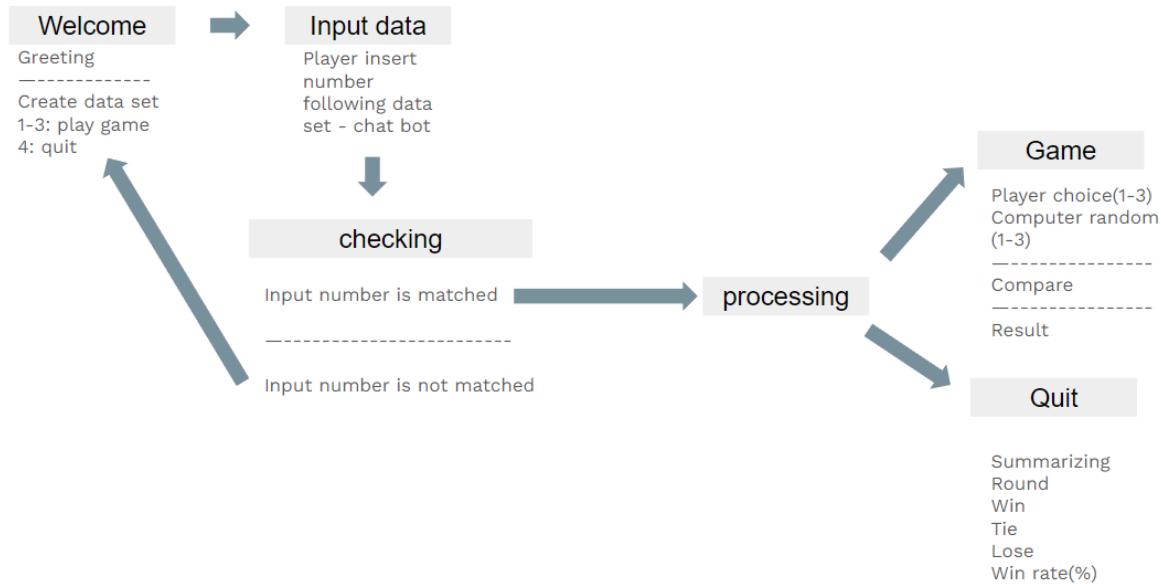


PYC - Rock Paper Scissor Game - Chatbot

Introduction

Create a “rock paper scissor game” by using R language. Use chatbot lesson from last project to create a game between player(human) and computer(random sampling). Then, summarize the result of each game as win, loss, tie when player would like to quit of a program.

1. Design data layout



2. Create a data set

```
#input data
number <- c(1:4)
choice <- c("Rock", "Paper", "Scissor", "Exit")
round <- 0
win <- 0
lose <- 0
draw <- 0
```

create a variable (round, win, lose, draw) = 0 for counting a game result

3. Welcome Section

```
#Welcome
cat("Welcome to Rock Paper Scissor Game !")
cat("\nChoose your weapon by typing the number following\n")
#cat("\n[ 1 ] : Rock // [ 2 ] : Paper // [ 3 ] : Scissor //
names(number) <- choice
print(number)
```

dataset : 1- rock / 2-paper / 3-scissor / 4-exit

```

~/pizza$ Rscript PYC.r
Welcome to Rock Paper Scissor Game !
Choose your weapon by typing the number following
Rock    Paper   Scissor    Exit
1        2        3        4

```

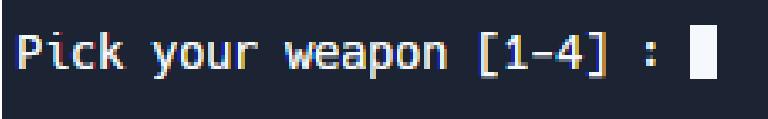
4. Input Section

```

#Checking incorrect input
while (TRUE) {
  cat("\nPick your weapon [1-4] : ")
  user <- readLines("stdin", n=1)

```

a main loop that can reuse



Pick your weapon [1-4] :

5. Checking Section

```

if ((user %in% number) & user != 4) {
  bot <- sample(c(1:3), 1)
  user <- as.numeric(user)
} else if (!(user %in% number) & user != 4) {
  cat("Incorrect number, Please try again !")
} else {
  break
}

```

while loop conditions :

1. user input number 1,2,3 > play game
2. user input either 1,2,3,4 > not matched with data set > back to main loop
3. user unput number 4 > exit > out of main loop

6. Processing Section

1st condition : input number = dataset (1-3)

```
if ((user %in% number) & user != 4) {  
    bot <- sample(c(1:3), 1)  
    user <- as.numeric(user)  
  
    if ( user == 1 & bot == 3 ) {  
        cat("You :", choice[user], " // Bot :", choice[bot])  
        win <- win + 1  
        round <- round + 1  
    } else if ( user == 2 & bot == 1 ) {  
        cat("You :", choice[user], " // Bot :", choice[bot])  
        win <- win + 1  
        round <- round + 1  
    } else if ( user == 3 & bot == 2 ) {  
        cat("You :", choice[user], " // Bot :", choice[bot])  
        win <- win + 1  
        round <- round + 1  
    } else if ( user == bot ) {  
        cat("You :", choice[user], " // Bot :", choice[bot])  
        draw <- draw + 1  
        round <- round + 1  
    } else {  
        cat("You :", choice[user], " // Bot :", choice[bot])  
        lose <- lose + 1  
        round <- round + 1  
    } }  
}
```

use if condition to compare a choice between player and computer
player :

`user <- as.numeric(user)` : input number

computer :

`bot <- sample(c(1:3), 1)` : random sampling from dataset (1-3)

counting a result of each game to variable that created in dataset section

```
Pick your weapon [1-4] : 1
You : Rock // Bot : Scissor >> You Win !

Pick your weapon [1-4] : 2
You : Paper // Bot : Scissor >> You lose !

Pick your weapon [1-4] : 3
You : Scissor // Bot : Paper >> You Win !

Pick your weapon [1-4] : 1
You : Rock // Bot : Scissor >> You Win !

Pick your weapon [1-4] : 2
You : Paper // Bot : Paper >> You Draw !

Pick your weapon [1-4] : 3
You : Scissor // Bot : Scissor >> You Draw !

Pick your weapon [1-4] : 1
You : Rock // Bot : Rock >> You Draw !

Pick your weapon [1-4] : 2
You : Paper // Bot : Rock >> You Win !

Pick your weapon [1-4] : 3
You : Scissor // Bot : Paper >> You Win !
```

2nd condition : input number ≠ dataset

```
else if (!(user %in% number) & user != 4) {
  cat("Incorrect number, Please try again !") }
```

either player input number or alphabet that can not matched with dataset >> return to the main while loop > asking to input a new number

```
Pick your weapon [1-4] : 5  
Incorrect number, Please try again !
```

```
Pick your weapon [1-4] : 6  
Incorrect number, Please try again !
```

```
Pick your weapon [1-4] : n  
Incorrect number, Please try again !
```

```
Pick your weapon [1-4] : 7  
Incorrect number, Please try again !
```

```
Pick your weapon [1-4] : -1  
Incorrect number, Please try again !
```

```
Pick your weapon [1-4] : 0  
Incorrect number, Please try again !
```

3rd condition : input number = dataset (4)

```
else {  
    break  
}
```

out of the main loop to the next command line (summarizing section)

```
Pick your weapon [1-4] : 4
```

7. Summarizing Section

```
#Summarize
  cat("\n-----")
  win_rate <- (win / (win+round)) * 100
  sum <- data.frame (Round = round, Win = win,
                      Lose = lose, Draw = draw,
                      Win_Rate = win_rate)
  print(sum, row.names = F)

}
```

use all a variable that collected from the main while loop > calculating a result

```
-----
  Round Win Lose Draw Win_Rate
    9     5     1     3 35.71429
```