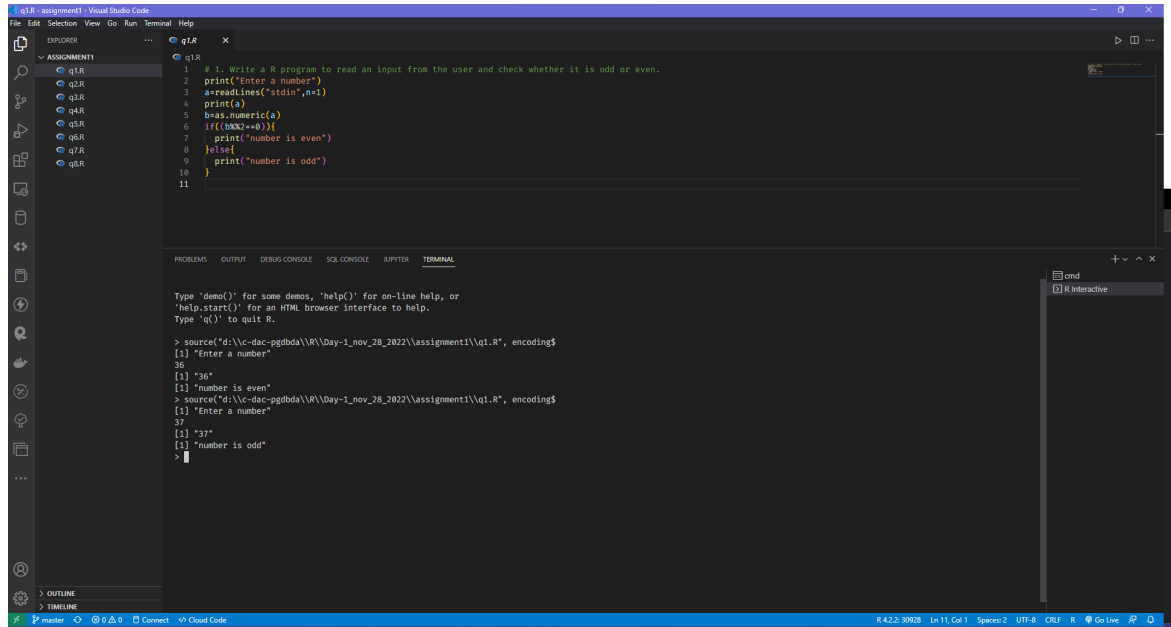


## R Assignment 1

1. Write a R program to read an input from the user and check whether it is odd or even.

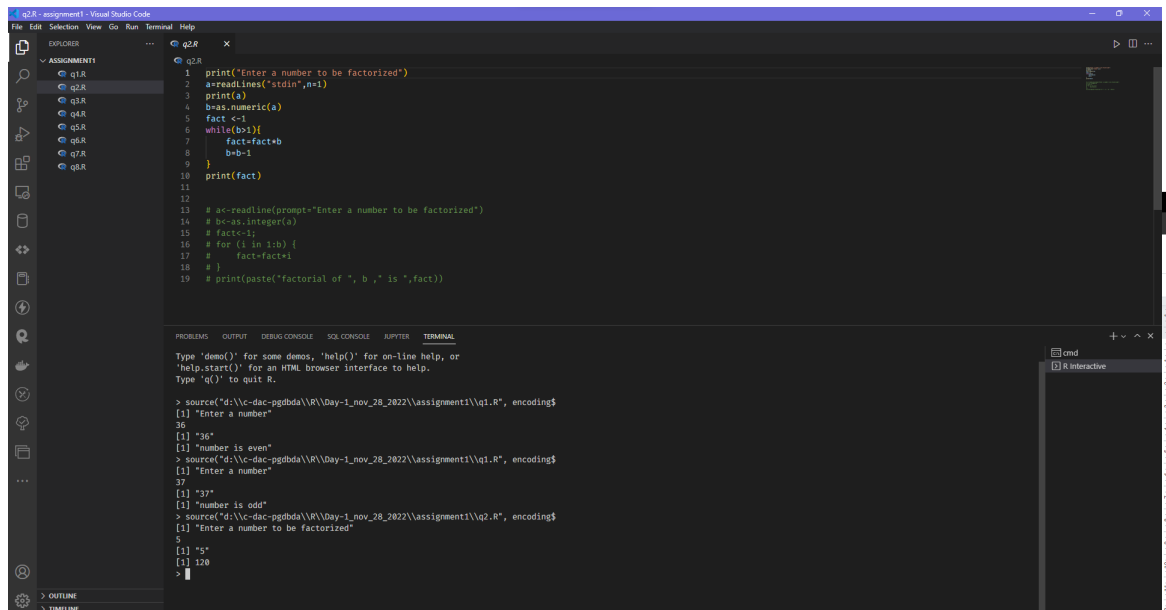


The screenshot shows the Visual Studio Code interface with a file named `q1.R` open. The script in the editor is as follows:

```
1 # 1. Write a R program to read an input from the user and check whether it is odd or even.
2 print("Enter a number")
3 a=readlines("stdin",n=1)
4 print(a)
5 b=as.numeric(a)
6 if((b%%2==0)){
7   print("number is even")
8 }else{
9   print("number is odd")
10 }
11
```

The terminal window at the bottom shows the execution of the script. It starts with the R prompt `>`, followed by the command `source('d:\c-dac-pgdbda\R\Day-1_nov_28_2022\assignment1\q1.R', encoding$`. The output shows the program prompting for input, receiving `"36"`, and printing `"number is even"`. The process is then repeated with input `"37"`, resulting in the output `"number is odd"`.

## 2. Write a R program to find factorial of a number



The image shows a Visual Studio Code editor with a file named 'q2.R' open. The code in the editor is as follows:

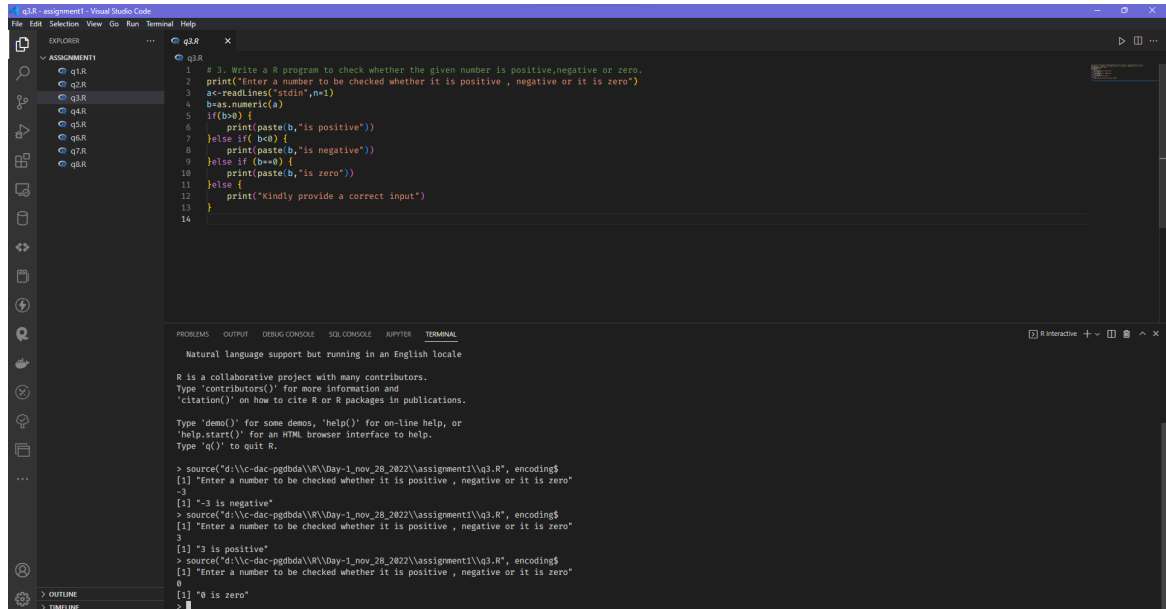
```
1 print("Enter a number to be factorized")
2 a<-readlines("stdin",n=1)
3 print(a)
4 b<-as.numeric(a)
5 fact <-1
6 while(b>=1){
7   fact=fact*b
8   b=b-1
9 }
10 print(fact)
11
12
13 # ac-readline(prompt="Enter a number to be factorized")
14 # bc<-as.integer(a)
15 # fact<-1;
16 # for (i in 1:b) {
17 #   fact=fact*i
18 # }
19 # print(paste("factorial of ", b , " is ",fact))
```

The terminal window at the bottom shows the execution of the R script. It displays the prompts and the results of the calculations for three different inputs: 36, 37, and 5.

```
Type 'demo()' for some demos, 'help()' for on-line help, or
'help.start()' for an HTML browser interface to help.
Type 'q()' to quit R.

> source("d:\\c-dac-pgdbda\\R\\Day-1_nov_28_2022\\assignment1\\q1.R", encoding$
[1] "Enter a number"
36
[1] "36"
[1] "number is even"
> source("d:\\c-dac-pgdbda\\R\\Day-1_nov_28_2022\\assignment1\\q1.R", encoding$
[1] "Enter a number"
37
[1] "37"
[1] "number is odd"
> source("d:\\c-dac-pgdbda\\R\\Day-1_nov_28_2022\\assignment1\\q2.R", encoding$
[1] "Enter a number to be factorized"
5
[1] "5"
[1] 120
```

3. Write a R program to check whether the given number is positive, negative or zero.



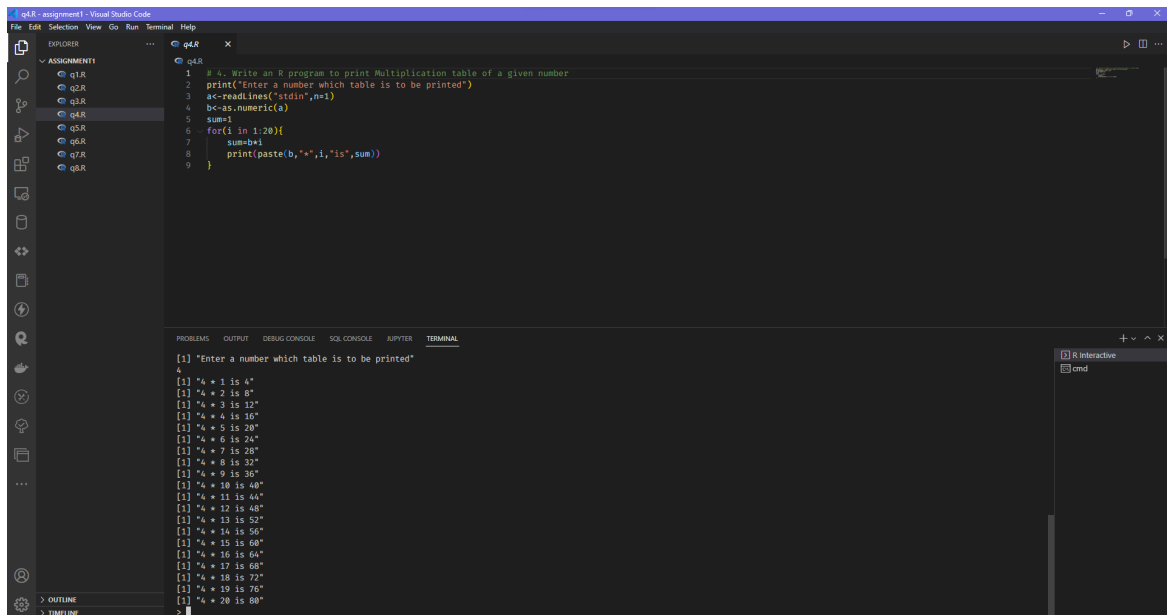
The screenshot shows a Visual Studio Code window with a file explorer on the left containing a folder named 'ASSIGNMENT1' with files q1.R through q8.R. The main editor displays a script named 'q3.R' with the following R code:

```
1 # 3. Write a R program to check whether the given number is positive,negative or zero.
2 print("Enter a number to be checked whether it is positive , negative or it is zero")
3 ac=readlines("stdin",n=1)
4 b=as.numeric(a)
5 if(b>0) {
6   print(paste(b,"is positive"))
7 }else if( b<0) {
8   print(paste(b,"is negative"))
9 }else if (b==0) {
10  print(paste(b,"is zero"))
11 }else {
12  print("Kindly provide a correct input")
13 }
14
```

The bottom panel shows the 'TERMINAL' output, which includes the R help text for the 'demo()' function and the execution results of the script:

```
> source("d:\\c-dac-pgdbda\\R\\Day-1_nov_28_2022\\assignment1\\q3.R", encoding$
[1] "Enter a number to be checked whether it is positive , negative or it is zero"
-3
[1] "-3 is negative"
> source("d:\\c-dac-pgdbda\\R\\Day-1_nov_28_2022\\assignment1\\q3.R", encoding$
[1] "Enter a number to be checked whether it is positive , negative or it is zero"
3
[1] "3 is positive"
> source("d:\\c-dac-pgdbda\\R\\Day-1_nov_28_2022\\assignment1\\q3.R", encoding$
[1] "Enter a number to be checked whether it is positive , negative or it is zero"
0
[1] "0 is zero"
>
```

#### 4. Write an R program to print Multiplication table of a given number



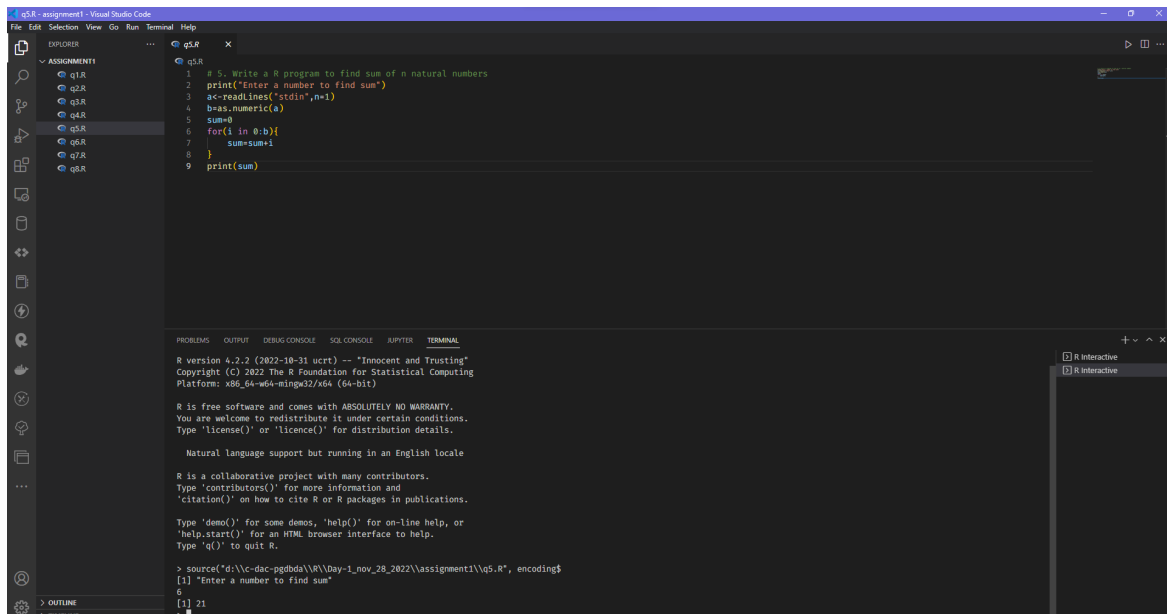
The screenshot shows the Visual Studio Code interface with an R script editor and a terminal window. The script defines a function to read a number from the user and prints a multiplication table for that number. The terminal output shows the execution of the program with the input '4' and the resulting multiplication table.

```
# 4. Write an R program to print Multiplication table of a given number
print("Enter a number which table is to be printed")
a<-readlines("stdin",n=1)
b<-as.numeric(a)
sum=1
for(i in 1:20){
  sum=b*i
  print(paste(b,"*",i,"is",sum))
}
```

Terminal Output:

```
[1] "Enter a number which table is to be printed"
4
[1] "4 * 1 is 4"
[1] "4 * 2 is 8"
[1] "4 * 3 is 12"
[1] "4 * 4 is 16"
[1] "4 * 5 is 20"
[1] "4 * 6 is 24"
[1] "4 * 7 is 28"
[1] "4 * 8 is 32"
[1] "4 * 9 is 36"
[1] "4 * 10 is 40"
[1] "4 * 11 is 44"
[1] "4 * 12 is 48"
[1] "4 * 13 is 52"
[1] "4 * 14 is 56"
[1] "4 * 15 is 60"
[1] "4 * 16 is 64"
[1] "4 * 17 is 68"
[1] "4 * 18 is 72"
[1] "4 * 19 is 76"
[1] "4 * 20 is 80"
```

## 5. Write a R program to find sum of n natural numbers



The screenshot shows the Visual Studio Code interface with a file named 'q5.R' open. The code in the editor is as follows:

```
1 # 5. Write a R program to find sum of n natural numbers
2 print("Enter a number to find sum")
3 a<-readlines("stdin",n=1)
4 b=as.numeric(a)
5 sum=0
6 for(i in 0:b){
7   sum=sum+i
8 }
9 print(sum)
```

The Explorer sidebar on the left shows a folder named 'ASSIGNMENT1' containing files 'q1.R', 'q2.R', 'q3.R', 'q4.R', 'q5.R' (selected), 'q6.R', 'q7.R', and 'q8.R'. The bottom panel displays the R terminal output, which includes the R version (4.2.2), copyright information, and the execution of the source command. The terminal output shows the prompt '[1] 21'.

```
R version 4.2.2 (2022-10-31 ucrt) -- "Innocent and Trusting"
Copyright (C) 2022 The R Foundation for Statistical Computing
Platform: x86_64-w64-mingw32/x64 (64-bit)

R is free software and comes with ABSOLUTELY NO WARRANTY.
You are welcome to redistribute it under certain conditions.
Type 'license()' or 'licence()' for distribution details.

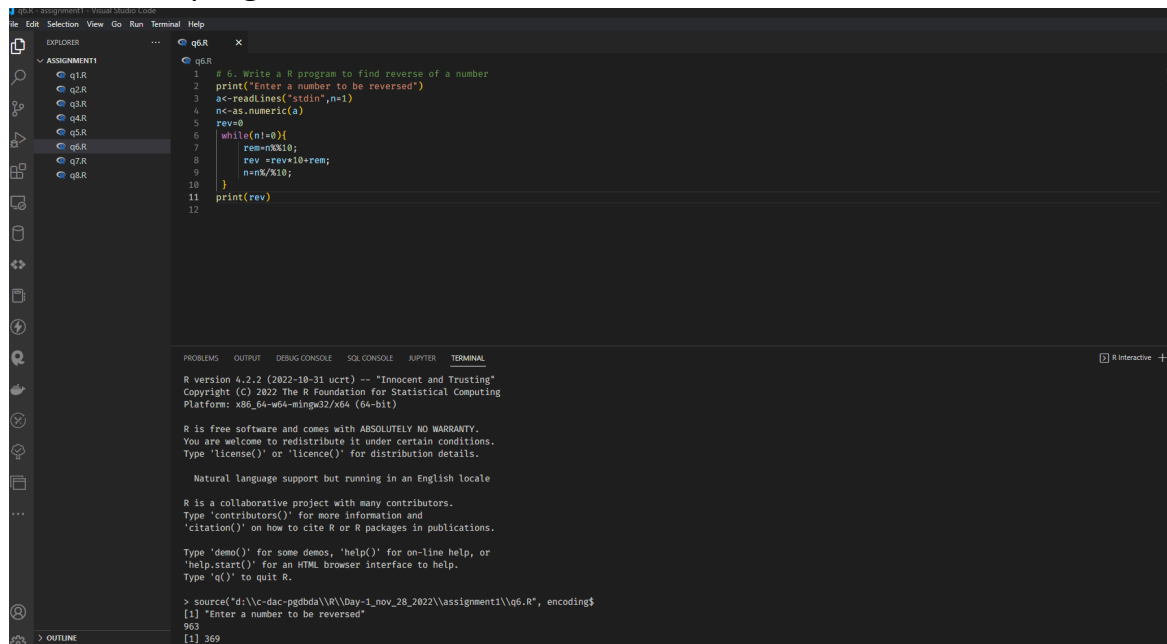
Natural language support but running in an English locale

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Type 'demo()' for some demos, 'help()' for on-line help, or
'help.start()' for an HTML browser interface to help.
Type 'q()' to quit R.

> source("d:\\c-dac-pgdbda\\R\\Day-1_nov_28_2022\\assignment1\\q5.R", encoding$
[1] "Enter a number to find sum"
[1] 21
```

## 6. Write a R program to find reverse of a number



The screenshot shows the RStudio IDE interface. The left sidebar contains the 'EXPLORER' pane with a file list under 'ASSIGNMENT1' including q1.R, q2.R, q3.R, q4.R, q5.R, q6.R (selected), q7.R, and q8.R. The main editor window displays the R script for q6.R, which is a program to find the reverse of a number. The script includes comments and code for reading input, calculating the reverse, and printing the result. The bottom pane shows the 'TERMINAL' output, which includes the R version (4.2.2), copyright information, and the execution of the script, resulting in the prompt '[1] 369'.

```
1 # 6. Write a R program to find reverse of a number
2 print("Enter a number to be reversed")
3 a<-readlines("stdin",n=1)
4 n<-as.numeric(a)
5 rev=0
6 while(n!=0){
7   rem=n%10;
8   rev=rev*10+rem;
9   n=n%/10;
10 }
11 print(rev)
12
```

R version 4.2.2 (2022-10-31 ucrt) -- "Innocent and Trusting"  
Copyright (C) 2022 The R Foundation for Statistical Computing  
Platform: x86\_64-w64-mingw32/x64 (64-bit)

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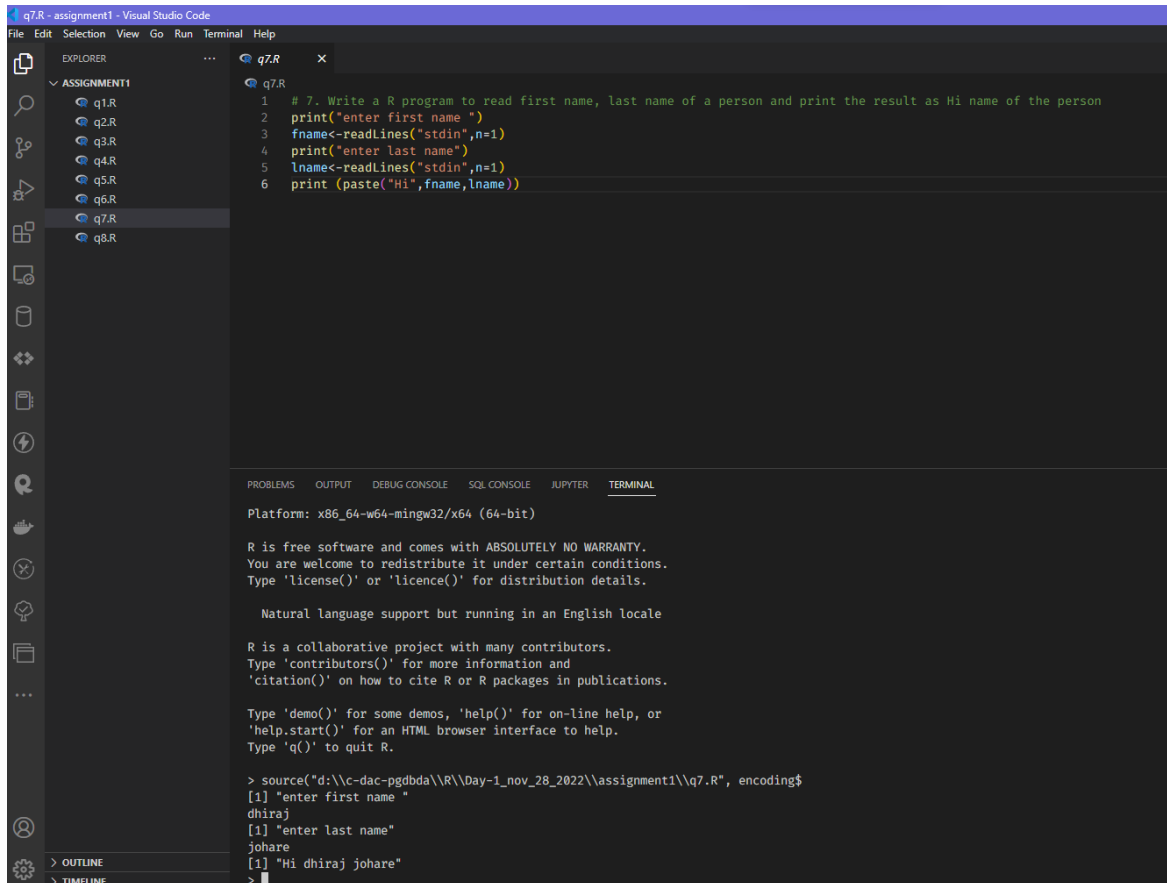
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Type 'demo()' for some demos, 'help()' for on-line help, or  
'help.start()' for an HTML browser interface to help.  
Type 'q()' to quit R.

> source("d:\\c-dac-pgdbda\\R\\day-1\_nov\_28\_2022\\assignment1\\q6.R", encoding\$  
[1] "Enter a number to be reversed"  
963  
[1] 369

7. Write a R program to read first name, last name of a person and print the result as Hi name of the person



The screenshot shows the Visual Studio Code interface with a file named 'q7.R' open. The Explorer sidebar on the left shows a folder named 'ASSIGNMENT1' containing files 'q1.R' through 'q8.R', with 'q7.R' selected. The main editor displays the following R code:

```
1 # 7. Write a R program to read first name, last name of a person and print the result as Hi name of the person
2 print("enter first name ")
3 fname<-readlines("stdin",n=1)
4 print("enter last name")
5 lname<-readlines("stdin",n=1)
6 print (paste("Hi",fname,lname))
```

Below the editor, the TERMINAL panel shows the output of running the R script. It starts with the R platform information and a welcome message. The user has entered 'dhiraj' for the first name and 'johare' for the last name, resulting in the output 'Hi dhiraj johare'.

```
Platform: x86_64-w64-mingw32/x64 (64-bit)

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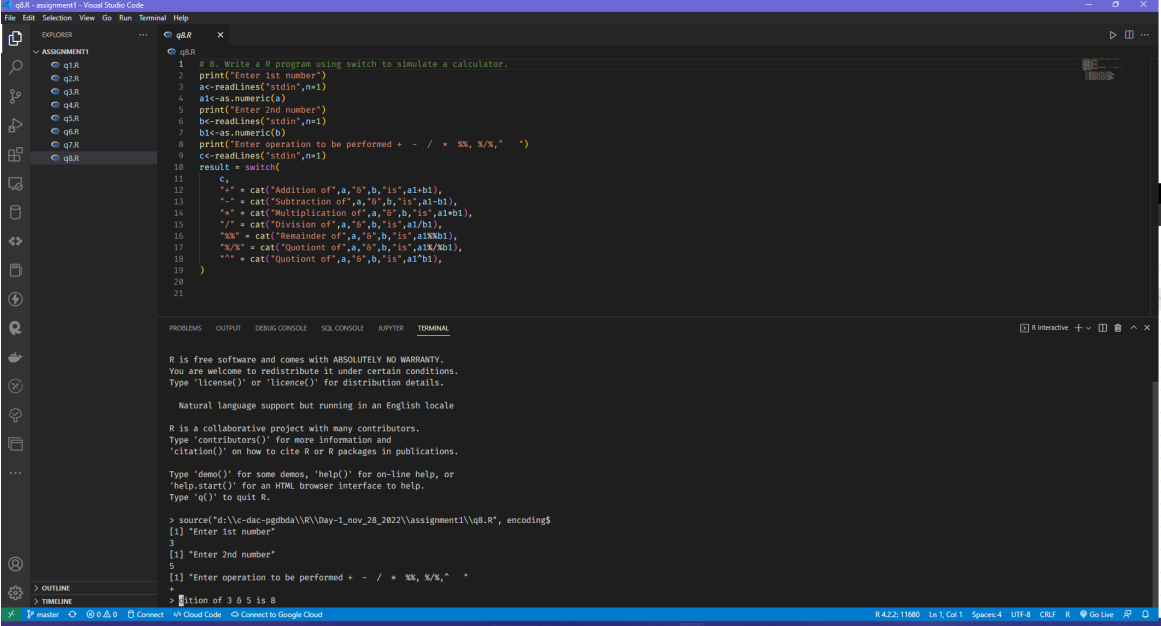
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Type 'demo()' for some demos, 'help()' for on-line help, or
'help.start()' for an HTML browser interface to help.
Type 'q()' to quit R.

> source("d:\\c-dac-pgdbda\\R\\Day-1_nov_28_2022\\assignment1\\q7.R", encoding$
[1] "enter first name "
dhiraj
[1] "enter last name"
johare
[1] "Hi dhiraj johare"
>
```

## 8. Write a R program using switch to simulate a calculator.



```
1 # 8. Write a R program using switch to simulate a calculator.
2 print("Enter 1st number")
3 a<-readlines("stdin",n=1)
4 a<-as.numeric(a)
5 print("Enter 2nd number")
6 b<-readlines("stdin",n=1)
7 b<-as.numeric(b)
8 print("Enter operation to be performed + - / * %/% ^")
9 c<-readlines("stdin",n=1)
10 result = switch(
11   c,
12   "+" = cat("Addition of",a,"&b","is",a+b),
13   "-" = cat("Subtraction of",a,"&b","is",a-b),
14   "*" = cat("Multiplication of",a,"&b","is",a*b),
15   "/" = cat("Division of",a,"&b","is",a/b),
16   "%" = cat("Remainder of",a,"&b","is",a%%b),
17   "%/%" = cat("Quotient of",a,"&b","is",a1k/b1),
18   "" = cat("Quotient of",a,"&b","is",a1b1),
19 )
20
21
```

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'citation()' on how to cite R or R packages in publications.

Type 'demo()' for some demos, 'help()' for on-line help, or  
'help.start()' for an HTML browser interface to help.  
Type 'q()' to quit R.

```
> source("d:\\c-dac-pgdbda\\R\\Day-1_nov_28_2021\\assignment1\\q8.R", encoding$
[1] "Enter 1st number"
3
[1] "Enter 2nd number"
5
[1] "Enter operation to be performed + - / * %/% ^"
+
> cat("Addition of 3 & 5 is 8")
```