EXPT NO : 5	VARIABLES, NUMERIC, CHARACTER AND LOGICAL DATA
DATE: 12.02.25	

AIM:

To perform variables, numeric, character and logical data in R programming.

1. Numeric Variables:

▪ Create three variables:

• An integer variable storing 25

• A floating-point variable storing 36.75

• A numeric variable storing the sum of the above two variables

▪ Print the values of all three variables along with their data types.

Code:

```
a<-25L
b<-36.75
c<-a+b
a
typeof(a)
b
typeof(b)
c
typeof(c)
```

Output:

```
> a
[1] 25
> typeof(a)
[1] "integer"
> b
[1] 36.75
> typeof(b)
[1] "double"
> c
[1] 61.75
> typeof(c)
[1] "double"
```

2. Character Variables:

• Create a character variable to store your full name.

• Concatenate your first and last name using paste() and paste0(), and print the results.

• Convert the full name into uppercase and lowercase.

Code:

```
f_name <- as.character(readline(prompt="enter your first name:"))
l_name <- as.character(readline(prompt="enter your last name:"))
cat(paste("Name:",f_name))
cat(paste("Name:",l_name))
cat(paste("Name:",f_name,l_name))
cat(paste0("Name:",f_name,l_name))
cat(paste("Name:",tolower(f_name),tolower(l_name)))
cat(paste("Name:",toupper(f_name),toupper(l_name)))
```

Output:

```
Name: kalai> cat(paste("Name:",l_name))
Name: selvi> cat(paste("Name:",f_name,l_name))
Name: kalai selvi> cat(paste0("Name:",f_name,l_name))
Name:kalaiselvi> cat(paste("Name:",tolower(f_name),tolower(l_name)))
Name: kalai selvi> cat(paste("Name:",toupper(f_name),toupper(l_name)))
Name: KALAI SELVI
```

3. Logical Variables:

• Create a logical variable status and assign it the result of a comparison operation (e.g., 15 > 10).

• Print the value of status and check its data type.

• Convert the logical variable into a numeric variable and print its value.

Code:

```
status <- 15 > 10
cat("Logical Variable (status):", status, "| Type:", typeof(status), "\n")
numeric_status <- as.numeric(status)
cat("Converted to Numeric:", numeric_status)
```

Output:

```
Logical Variable (status): TRUE | Type: logical
>
> numeric_status <- as.numeric(status)
>
> cat("Converted to Numeric:", numeric_status)
Converted to Numeric: 1
```

4. Type Conversion:

• Create a character variable with a numeric value "1234".
• Convert this character variable into an integer and a double.
• Create a numeric variable with value 0 and convert it into a logical variable.

Code:

```
char_var="1234"
cat(as.integer(char_var))
cat(as.double(char_var))
num_val=0
cat(as.logical(num_val))
```

Output:

```
1234> cat(as.double(char_var))
1234> num_val=0
> cat(as.logical(num_val))
FALSE
```

5. User Input and Dynamic Variable Creation:

• Prompt the user to enter their age and store it in a variable.
• Convert the age into an integer if necessary.
• Check if the age is greater than 18 and print "Major" if true, otherwise print "Minor".

Code:

```
age <- as.numeric(readline(prompt = "Enter your age: "))

if (age > 18) {
  cat("Major")
} else {
  cat("Minor")
}
```

Output:

```
Enter your age: 19
> if (age > 18) {
+     cat("Major")
+ } else {
+     cat("Minor")
+ }
Major
```

RESULT:

Thus, the R programming is implemented and executed successfully.