

Program :-

```
fact1<- function(n) {  
  if (n == 0) {  
    return(1)  
  } else {  
    return(n * fact1(n - 1))  
  }  
}
```

```
fact2 <- function(x) {  
  val = 1  
  
  for (i in x:1) {  
    val = val * i  
  }  
  
  return (val)  
}
```

Output :-

```
> fact1(4)  
[1] 24  
> fact2(4)  
[1] 24
```

Program :-

```
palindromestr<- function() {  
  s <- readline("Please enter a string: ")  
  x <- strsplit(s, "")[[1]]  
  
  if (all(x == rev(x))) {  
    print(paste(s, "is a palindrome."))  
  } else {  
    print(paste(s, "is not a palindrome."))  
  }  
}
```

Output :-

```
> palindromestr()  
Please enter a string: malayalam  
[1] "malayalam is a palindrome."  
> palindromestr()  
Please enter a string: sinan  
[1] "sinan is not a palindrome."
```

Program :-

```
palindromenum<- function() {  
  num <- as.integer(readline("Please enter a number: "))  
  n <- num  
  rev <- 0  
  
  while (n > 0) {  
    rem <- n %% 10  
    rev <- rem + (rev * 10)  
    n <- as.integer(n / 10)  
  }  
  
  if (rev == num) {  
    cat(num, "is a palindrome\n")  
  } else {  
    cat(num, "is not a palindrome\n")  
  }  
}
```

Output :-

```
> palindromenum()  
Please enter a number: 121  
121 is a palindrome  
> palindromenum()  
Please enter a number: 123  
123 is not a palindrome
```