SOC 4015/5050: Lecture 07 Functions

Christopher Prener, Ph.D.

Fall 2018

Packages

- `base`

- `stats`

Writing a Function

```
functionName <- base::function(param1, param2){
  # function body
}
```

Calculating Absolute Value

```
stats::abs(x)
```

t Distribution

For the t distribution, let:
$t =$ score
$df =$ degrees of freedom

Basic Function

```
stats::pt(q = t, df = df)
```

Full Equation

```
2*stats::pt(q = -stats::abs(t), df = df)
```

The Full Probability Under t Function

```
#' Two-tailed Probabilities Under the t Distribution
#'
#' @description This function calculates the probability of observing a t score
#'     at least as extreme as the given t value.
#'
#' @param t A given t score
#' @param n The sample size associated with t
#'
#' @return A probability value
#'
probt <- function(t, n){

  # calculate the degrees of freedom given n
  df <- n-1

  # calculate the p value
  out <- 2*pt(q = -abs(t), df = df)

  # return output
  return(out)

}
```