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output:
  pdf_document: default
  html_document: default
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> # ================================================= #
> # Data Types and Operators
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> # Date: Class 02 | 28 Dec 2024
> # ================================================= #
>
>
>
> # Common data types ----------------------------------------------------
>
> typeof(6)
[1] "double"
> typeof(6L)
[1] "integer"
> typeof(TRUE)
[1] "logical"
> typeof(T)
[1] "logical"
> typeof("cat")
[1] "character"
> typeof(3i+5)
[1] "complex"
>
> mode(6)
[1] "numeric"
> mode(6L)
[1] "numeric"
> mode(TRUE)
[1] "logical"
> mode(T)
[1] "logical"
> mode("cat")
[1] "character"
> mode(3i+5)
[1] "complex"
>
>
> # Combining elements ---------------------------------------------------
>
```

```
> c(6, 7, 10)
[1]  6  7 10
> typeof(c(6, 7, 10))
[1] "double"
> typeof(c(6L, 7L, 10L))
[1] "integer"
>
>
> # Assignment operator ---------------------------------------------------
>
> x1 <- c(6, 7, 10)
> c(6, 7, 10) -> x1
> x1 = c(6, 7, 10)
>
>
> # Relational operators --------------------------------------------------
>
> x2 <- c("Apple", "Dhk", "Dhaka", "dhaka")
> x2
[1] "Apple" "Dhk"   "Dhaka" "dhaka"
>
> "dhk" %in% x2
[1] FALSE
>
> x3 <- c(23, NA, 45, NA, 30)
> x3
[1] 23 NA 45 NA 30
> x3 <- c(x3[1:3],0,x3[4:length(x3)])
> x3
[1] 23 NA 45  0 NA 30
>
> is.na(x3)
[1] FALSE  TRUE FALSE FALSE  TRUE FALSE
> sum(is.na(3))
[1] 0
> which(is.na(x3))
[1] 2 5
>
> any(c(F,F,F))  # at least ekta True ase kina
[1] FALSE
> all(c(T,T,T))  # sobgula true kina
[1] TRUE
>
> any(is.na(x3))
```

```
[1] TRUE
>
>
> # Common functions ----------------------------------------------------
>
> x4 <- c(23, 23, 45, 56, 30)
>
> mean(x4)
[1] 35.4
> min(x4)
[1] 23
> summary(x4)
   Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
   23.0    23.0    30.0    35.4    45.0    56.0
>
> summary(mtcars)
      mpg             cyl             disp             hp             drat             wt
 Min.   :10.40   Min.   :4.000   Min.   : 71.1   Min.   : 52.0   Min.   :2.760   Min.   :1.513
 1st Qu.:15.43   1st Qu.:4.000   1st Qu.:120.8   1st Qu.: 96.5   1st Qu.:3.080   1st Qu.:2.581
 Median :19.20   Median :6.000   Median :196.3   Median :123.0   Median :3.695   Median :3.325
 Mean   :20.09   Mean   :6.188   Mean   :230.7   Mean   :146.7   Mean   :3.597   Mean   :3.217
 3rd Qu.:22.80   3rd Qu.:8.000   3rd Qu.:326.0   3rd Qu.:180.0   3rd Qu.:3.920   3rd Qu.:3.610
 Max.   :33.90   Max.   :8.000   Max.   :472.0   Max.   :335.0   Max.   :4.930   Max.   :5.424
      qsec             vs              am              gear            carb
 Min.   :14.50   Min.   :0.0000   Min.   :0.0000   Min.   :3.000   Min.   :1.000
 1st Qu.:16.89   1st Qu.:0.0000   1st Qu.:0.0000   1st Qu.:3.000   1st Qu.:2.000
 Median :17.71   Median :0.0000   Median :0.0000   Median :4.000   Median :2.000
 Mean   :17.85   Mean   :0.4375   Mean   :0.4062   Mean   :3.688   Mean   :2.812
 3rd Qu.:18.90   3rd Qu.:1.0000   3rd Qu.:1.0000   3rd Qu.:4.000   3rd Qu.:4.000
 Max.   :22.90   Max.   :1.0000   Max.   :1.0000   Max.   :5.000   Max.   :8.000
>
> num1 <- c(23.1344, 34.5554450)
>
> round(num1, digits = 1)
[1] 23.1 34.6
> floor(num1)
[1] 23 34
> ceiling(num1)
[1] 24 35
>
> help(any)
```