**A picture containing shape, arrow

Description automatically generatedModule – 1**

**Problem 1:** Use R to compute the following values.

1. **27(38-17) A**ns- >>>567
2. **(147­) \* (39)**

Ans- ((147)^7)\*39 >>> 5.784768e+16

options(scipen = 999)

((147)^7)\*39 >>> **57847680552509760**

1. **** Ans:- sqrt(436/12) >>> 6.027714
2. **54%3** Ans:- 54%%3 >>> 0
3. **54/3** Ans:- 54/3 >>> 18
4. **Find cube of 999** Ans:- 999^3 >>> 997002999

**Problem 2:** Construct 2 lists containing mentioned data types (Numeric, Character, Complex, Logical, Vector) and do the following…

* 1. Create another list which has a vector as an input inside it.
  2. Find the length and class of the above created list.

**Ans:-**  vect\_1 <- list(25,24L,67.87,"Data Science",6+49i,TRUE,c(4,8,26))

vect\_2 <- list(FALSE,c(9.8,2,7,56),85.0, 67L,"Avishek Verma",65+2i)

another\_list <- list(c(5,6,7,9),c("avi","Ram","India"),c(45.3,67.2,9.8))

length(vect\_1) >>> 7

class(vect\_1) >>> “list”

length(vect\_2) >>> 6

class(vect\_2) >>> “list”

length(another\_list) >>> 3

class(another\_list) >>> “list”

**Problem 3:** Create a list of two vectors containing integers (numbers from 1 to 10 in one and 5 to 15 in other)

* Index the 8th element of the first list and 8th element of second list
* Unlist the second back to atomic vectors
* Subset the new list from 6th element to 14th element

**Ans:-** l <- list(c(1L:10L),c(5L:15L))

l[[1]][8] >>> 8

l[[2]][8] >>> 12

x <- unlist(l[2])

x >>> 5 6 7 8 9 10 11 12 13 14 15

class(x) >>> "integer"

u <- x[c(6:14)]

u >>> 10 11 12 13 14 15 NA NA NA

class(u) >>> "integer"

**Problem 4:** Create a list of 5 states having state name as variable name and number of covid-19 cases as its values.

1. Access a few values through its variable name use $ to do so.
2. Find the class and length of the list
3. Subset the third state and its value.

**Ans:-**

covid <- list(state=c("Delhi","Andhra Pradesh","Maharashtra","Karnataka","Madhya Pradesh"), Total\_cases = c(634773,887591,2021184,938401,254667))

covid$state >>>"Delhi" "Andhra Pradesh" "Maharashtra" "Karnataka" "Madhya Pradesh"

covid$Total\_cases >>>634773 887591 2021184 938401 254667

class(covid) >>> "list"

length(covid) >>> 2

covid[[1]][3] >>> "Maharashtra"

covid[[2:3]] >>> 2021184

**Note:** Use R to solve the given problems in the above. After you do so, cut and paste your input and output from R to Word, else you can submit your code file along with the question and the question number. If you are sending it in a word file add numbering in Word to identify each part of each problem. (Do this for every problem from now on.)