**Program :1**

fahrenheit\_to\_celsius <- function(fahrenheit) {

celsius <- (fahrenheit - 32) \* 5/9

return(celsius)

}

celsius\_to\_fahrenheit <- function(celsius) {

fahrenheit <- (celsius \* 9/5) + 32

return(fahrenheit)

}

cat("Choose conversion type:\n")

cat("1. Fahrenheit to Celsius\n")

cat("2. Celsius to Fahrenheit\n")

choice <- readline(prompt="Enter your choice (1 or 2): ")

if(choice == "1"){

fahrenheit <- as.numeric(readlin1e(prompt="Enter temperature in Fahrenheit: "))

celsius <- fahrenheit\_to\_celsius(fahrenheit)

cat(paste(fahrenheit, "degrees Fahrenheit is equal to", celsius, "degrees Celsius.\n"))

} else if(choice == "2"){

celsius <- as.numeric(readline(prompt="Enter temperature in Celsius: "))

fahrenheit <- celsius\_to\_fahrenheit(celsius)

cat(paste(celsius, "degrees Celsius is equal to", fahrenheit, "degrees Fahrenheit.\n"))

} else{

cat("Invalid choice. Please enter 1 or 2.\n")

}

OUTPUT :

Choose conversion type:

1. Fahrenheit to Celsius

2. Celsius to Fahrenheit

Enter your choice (1 or 2): 1

Enter temperature in Fahrenheit: 59

59 degrees Fahrenheit is equal to 15 degrees Celsius.

**Program :2**

calculate\_rectangle\_area <- function(length, width) {

area <- length \* width

return(area)

}

calculate\_triangle\_area <- function(base, height) {

area <- 0.5 \* base \* height

return(area)

}

calculate\_square\_area <- function(side\_length) {

area <- side\_length^2

return(area)

}

calculate\_circle\_area <- function(radius) {

area <- pi \* radius^2

return(area)

}

main <- function() {

cat("Choose a shape to calculate its area:\n")

cat("1. Rectangle\n")

cat("2. Triangle\n")

cat("3. Square\n")

cat("4. Circle\n")

choice <- as.integer(readline("Enter your choice (1 to 4): "))

if (choice == 1) {

length <- as.numeric(readline("Enter the length of the rectangle: "))

width <- as.numeric(readline("Enter the width of the rectangle: "))

area <- calculate\_rectangle\_area(length, width)

cat("The area of the rectangle with length", length, "and width", width, "is", area, "\n")

} else if (choice == 2) {

base <- as.numeric(readline("Enter the base length of the triangle: "))

height <- as.numeric(readline("Enter the height of the triangle: "))

area <- calculate\_triangle\_area(base, height)

cat("The area of the triangle with base", base, "and height", height, "is", area, "\n")

} else if (choice == 3) {

side\_length <- as.numeric(readline("Enter the side length of the square: "))

area <- calculate\_square\_area(side\_length)

cat("The area of the square with side length", side\_length, "is", area, "\n")

} else if (choice == 4) {

radius <- as.numeric(readline("Enter the radius of the circle: "))

area <- calculate\_circle\_area(radius)

cat("The area of the circle with radius", radius, "is", area, "\n")

} else {

cat("Invalid choice. Please enter a number from 1 to 4.\n")

}

}

main()

OUTPUT :

Choose a shape to calculate its area:

1. Rectangle

2. Triangle

3. Square

4. Circle

Enter your choice (1 to 4): 2

Enter the base length of the triangle: 23

Enter the height of the triangle: 25

The area of the triangle with base 23 and height 25 is 287.5

**program :3**

find\_even\_odd <- function(n) {

even\_numbers <- c()

odd\_numbers <- c()

for (i in 1:n) {

if (i %% 2 == 0) {

even\_numbers <- c(even\_numbers, i)

} else {

odd\_numbers <- c(odd\_numbers, i)

}

}

return(list(even\_numbers = even\_numbers, odd\_numbers = odd\_numbers))

}

n <- as.integer(readline(prompt = "Enter a number (n): "))

result <- find\_even\_odd(n)

cat("Even numbers from 1 to", n, ": ", result$even\_numbers, "\n")

cat("Odd numbers from 1 to", n, ": ", result$odd\_numbers, "\n")

**OUTPUT :**

Enter a number (n): 3

Even numbers from 1 to 3 : 2

Odd numbers from 1 to 3 : 1 3

**program :4**

print\_squares <- function(n) {

for (i in 1:n) {

square <- i^2

cat("Square of", i, "is", square, "\n")

}

}

n <- as.integer(readline(prompt = "Enter a number (n): "))

print\_squares(n)

**OUTPUT :**

Enter a number (n): 3

Square of 1 is 1

Square of 2 is 4

Square of 3 is 9

**prorgram :5**

df1<- data.frame(

name = c("alice","bob"),

age = c(25,30)

)

df2 <- data.frame(

name = c("david","emily"),

age = c(28,32)

)

combined\_col <- cbind(df1,df2)

print(combined\_col)

combined\_row <- rbind(df1,df2)

print(combined\_row)

OUTPUT :

|  |  |  |
| --- | --- | --- |
|  | Name | Age |
| 1 | ALice | 25 |
| 2 | Bob | 20 |
| 3 | David | 28 |
| 4 | Emily | 32 |

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Age | Name | Age |
| Alice | 25 | David | 28 |
| bob | 30 | emily | 32 |