BASIC VISU IN PYTHON
SOURCE CODE

```
import seaborn as sns
import matplotlib.pyplot as plt

# Load dataset
iris = sns.load_dataset("iris")


# Scatter plot
plt.figure(figsize=(8, 5))
sns.scatterplot(x=iris["petal_length"], y=iris["petal_width"],
hue=iris["species"], palette="viridis")
plt.xlabel("Petal Length")
plt.ylabel("Petal Width")
plt.title("Iris Petal Length vs Width")
plt.legend(title="Species")
plt.show()


# Load dataset
flights = sns.load_dataset("flights")
# Line chart
plt.figure(figsize=(8, 5))
sns.lineplot(x="year", y="passengers", hue="month", data=flights,
palette="tab10")
plt.xlabel("Year")
plt.ylabel("Number of Passengers")
plt.title("Number of Airline Passengers Over Time")
plt.legend(title="Month", bbox_to_anchor=(1,1))
plt.show()


# Load dataset
tips = sns.load_dataset("tips")
```

```
# Bar chart
plt.figure(figsize=(8, 5))
sns.barplot(x="day", y="tip", data=tips, palette="coolwarm")
plt.xlabel("Day of the Week")
plt.ylabel("Average Tip ($)")
plt.title("Average Tip Amount per Day")
plt.show()

# Load dataset
diamonds = sns.load_dataset("diamonds")
# Histogram
plt.figure(figsize=(8, 5))
sns.histplot(diamonds["price"], bins=30, kde=True, color="purple")
plt.xlabel("Price ($)")
plt.ylabel("Count")
plt.title("Distribution of Diamond Prices")
plt.show()

# Load dataset
titanic = sns.load_dataset("titanic")
# Count of survivors
survival_counts = titanic["survived"].value_counts()
# Pie chart
plt.figure(figsize=(6, 6))
plt.pie(survival_counts, autopct="%1.1f%%", colors=["red", "green"])
plt.title("Survival Rate on Titanic")
plt.legend(labels=["Did not Survive", "Survived"])
plt.show()
```

BASIC VIS IN R

CSOURCE CODE

```
install.packages("ggplot2")
library(ggplot2)

1 team <-c(2,4,6,8,10)
2 tram <-c(10,20,30,40,50)

ggplot(data=NULL,aes(1 team =1 team,2 team= 2 team))+geom_point()
ggplot(data=NULL, aes(x=x,y=y))+geom_line()

# Bar chart
ggplot(iris, aes(x=Species, y=Petal.Length, fill=Species)) +
  geom_bar(stat="summary", fun="mean") +
  labs(title="Average Petal Length per Species",
       x="Flower Species",
       y="Average Petal Length",
       fill="Species")

# Box plot
ggplot(ChickWeight, aes(x=factor(Diet), y=weight, fill=factor(Diet))) +
  geom_boxplot() +
  labs(title="Weight Distribution by Diet Type",
       x="Diet Type",
       y="Chick Weight",
       fill="Diet")
```

 # Line chart

```
ggplot(airquality, aes(x=Day, y=Ozone, group=Month, color=factor(Month))) +
  geom_line(size=1) +
  labs(title="Ozone Levels Over Time",
       x="Day of the Month",
       y="Ozone Level",
       color="Month")
```

 # Scatter plot

```
ggplot(mtcars, aes(x=hp, y=mpg, color=factor(cyl))) +
  geom_point(size=3) +
  labs(title="Horsepower vs Miles per Gallon",
       x="Horsepower",
       y="Miles per Gallon",
       color="Cylinders")
```

 # Violin plot

```
ggplot(mtcars, aes(x=factor(cyl), y=mpg, fill=factor(cyl))) +
  geom_violin(alpha=0.7) +
  labs(title="Miles per Gallon by Cylinder Type",
       x="Number of Cylinders",
       y="Miles per Gallon",
       fill="Cylinders")
```

BUILDING R SHINY DASHBOARD APP

```
install.packages("shiny")
install.packages("ggplot2")
install.packages("dplyr")
install.packages("shinydashboard")

library(shiny)
library(ggplot2)
library(dplyr)
library(shinydashboard)

# Define UI
ui <- dashboardPage(
  dashboardHeader(title = "Sales Dashboard"),
  dashboardSidebar(
    sidebarMenu(
      menuItem("Overview", tabName = "overview", icon = icon("dashboard"))
    )
  ),
  dashboardBody(
    tabItems(
      tabItem(tabName = "overview",
              fluidRow(
                box(title = "Sales Summary", status = "primary",
                            solidHeader =   TRUE, width = 6,
                             "Total Sales: $500,000"),
                box(title = "Top Region", status = "info", solidHeader = TRUE,
                            width = 6, "Region: North America")     ),
```

```
            fluidRow(
              box(title = "Sales by Product (Bar Chart)", status = "info", solidHeader = TRUE, width = 6,
                  plotOutput("barChart")),
              box(title = "Sales Distribution by Region (Pie Chart)", status = "danger", solidHeader = TRUE, width = 6,
                  plotOutput("pieChart"))
            )
      )
    )
  )
)

# Define Server
server <- function(input, output) {
  # Render the bar chart
  output$barChart <- renderPlot({
    sales_data <- data.frame(
      Product = c("Product A", "Product B", "Product C", "Product D"),
      Sales = c(120000, 90000, 60000, 75000)
    )
    ggplot(sales_data, aes(x = Product, y = Sales, fill = Product)) +
      geom_bar(stat = "identity") +
      labs(title = "Sales by Product", x = "Product", y = "Sales") +
      theme_minimal()
  })



# Render the pie chart
```

```
  output$pieChart <- renderPlot({
    sales_data <- data.frame(
      Region = c("North America", "Europe", "Asia", "South America"),
      Sales = c(120000, 90000, 60000, 75000)
    )
    sales_data <- sales_data %>%
      mutate(Percentage = Sales / sum(Sales) * 100)

    ggplot(sales_data, aes(x = "", y = Percentage, fill = Region)) +
      geom_bar(stat = "identity", width = 1) +
      coord_polar("y") +
      labs(title = "Sales Distribution by Region", x = NULL, y = NULL) +
      theme_void() +
      theme(legend.position = "right")
  })
}

# Run the App
shinyApp(ui, server)
```