

SHETH L.U.J AND SIR M.V. COLLEGE

SUBJECT :- DATA ANALYSIS WITH SAS/SPSS/R

MODULE 2 - PRACTICAL – 3

AIM:- Performing one-sample t-tests using t.test() (R)

OUTPUT:-

```
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Source
Console Terminal Background Jobs
R - R 4.1.2 - ~/rajji/
[1] "Cross-tabulation shows how cryptocurrencies are distributed across different return categories. Proportions help compare return performance across symbols."
> library(dplyr)
> # 1. Load Dataset
> df <- read.csv("C:\\Users\\IT\\Downloads\\crypto_yearly_performance.csv")
> print("Dataset Loaded Successfully")
[1] "Dataset Loaded Successfully"
> head(df)
  coin_id coin_name symbol start_price end_price total_return
1 memecore Memecore M 0.06 1.32 2179.51
2 zcash zcash ZEC 73.81 369.82 401.04
3 hyperliquid Hyperliquid HYPE 11.17 34.17 205.97
4 rain Rain RAIN 0.00 0.01 202.06
5 whitebit whiteBIT coin WBT 23.44 62.38 166.16
6 bitget-token Bitget Token BGB 1.60 3.59 123.80
> str(df)
'data.frame': 100 obs. of 6 variables:
 $ coin_id : chr "memecore" "zcash" "hyperliquid" "rain" ...
 $ coin_name : chr "memecore" "zcash" "hyperliquid" "Rain" ...
 $ symbol : chr "M" "ZEC" "HYPE" "RAIN" ...
 $ start_price : num 0.06 73.81 11.17 0 23.44 ...
 $ end_price : num 1.32 369.82 34.17 0.01 62.38 ...
 $ total_return : num 2180 401 206 202 166 ...
> dim(df)
[1] 100 6
> # 3. Create a Categorical Variable (IMPORTANT)
> df$return_group <- cut(
+ df$total_return,
+ breaks = c(-Inf, 50, 100, 500, Inf),
+ labels = c("Low Return", "Moderate Return", "High Return", "Very High Return")
+ )
> print("Return Group Distribution:")
[1] "Return Group Distribution:"
> table(df$return_group)
Low Return Moderate Return High Return Very High Return
90 3 6 1
> # 4. Cross Tabulation using table()
> print("Cross Tabulation: Symbol vs Return Group")
```

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Low Return Moderate Return High Return Very High Return
90 3 6 1
> # 4. Cross Tabulation using table()
> print("Cross Tabulation: Symbol vs Return Group")
[1] "Cross Tabulation: Symbol vs Return Group"
> cross_tab <- table(df$symbol, df$return_group)
> print(cross_tab)
Low Return Moderate Return High Return Very High Return
AAVE 1 0 0 0
ADA 1 0 0 0
ALGO 1 0 0 0
APT 1 0 0 0
ARB 1 0 0 0
ASTER 1 0 0 0
ATOM 1 0 0 0
AVAX 1 0 0 0
BCH 1 0 0 0
BFUSD 1 0 0 0
BGB 0 0 1 0
BNB 1 0 0 0
BNSOL 1 0 0 0
BSC-USDT 1 0 0 0
BTC 1 0 0 0
BUIDL 1 0 0 0
CBBTC 1 0 0 0
CC 1 0 0 0
CRO 1 0 0 0
DAI 1 0 0 0
DOGE 1 0 0 0
DOT 1 0 0 0
ENA 1 0 0 0
ETC 1 0 0 0
ETH 1 0 0 0
FBTC 1 0 0 0
FIGOR_MELOC 1 0 0 0
FIL 1 0 0 0
FLR 1 0 0 0
GT 1 0 0 0
HASH 1 0 0 0
```

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XMR      0      0      1      0
XRP      1      0      0      0
ZEC      0      0      1      0
>
> # 5. Row-wise Proportions
> print("Row-wise Proportions:")
[1] "Row-wise Proportions:"
> prop.table(cross_tab, margin = 1)

      Low Return Moderate Return High Return very High Return
AAVE      1      0      0      0
ADA      1      0      0      0
ALGO      1      0      0      0
APT      1      0      0      0
ARB      1      0      0      0
ASTER      1      0      0      0
ATOM      1      0      0      0
AVAX      1      0      0      0
BCN      1      0      0      0
BFUSD      1      0      0      0
BGB      0      0      1      0
BNB      1      0      0      0
BNSOL      1      0      0      0
BSC-USD      1      0      0      0
BTC      1      0      0      0
BUIDL      1      0      0      0
CBBTC      1      0      0      0
CC      1      0      0      0
CRO      1      0      0      0
DAI      1      0      0      0
DOGE      1      0      0      0
DOT      1      0      0      0
ENA      1      0      0      0
ETC      1      0      0      0
ETH      1      0      0      0
FBTC      1      0      0      0
FIGR_HELOC      1      0      0      0
FIL      1      0      0      0
FLR      1      0      0      0
GT      1      0      0      0
HASH      1      0      0      0
HBAR      1      0      0      0
HTX      1      0      0      0
```

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>
> # 6. Column-wise Proportions
> print("Column-wise Proportions:")
[1] "Column-wise Proportions:"
> prop.table(cross_tab, margin = 2)

      Low Return Moderate Return High Return very High Return
AAVE 0.01111111 0.00000000 0.00000000 0.00000000
ADA 0.01111111 0.00000000 0.00000000 0.00000000
ALGO 0.01111111 0.00000000 0.00000000 0.00000000
APT 0.01111111 0.00000000 0.00000000 0.00000000
ARB 0.01111111 0.00000000 0.00000000 0.00000000
ASTER 0.01111111 0.00000000 0.00000000 0.00000000
ATOM 0.01111111 0.00000000 0.00000000 0.00000000
AVAX 0.01111111 0.00000000 0.00000000 0.00000000
BCN 0.01111111 0.00000000 0.00000000 0.00000000
BFUSD 0.01111111 0.00000000 0.00000000 0.00000000
BGB 0.00000000 0.00000000 0.16666667 0.00000000
BNB 0.01111111 0.00000000 0.00000000 0.00000000
BNSOL 0.01111111 0.00000000 0.00000000 0.00000000
BSC-USD 0.01111111 0.00000000 0.00000000 0.00000000
BTC 0.01111111 0.00000000 0.00000000 0.00000000
BUIDL 0.01111111 0.00000000 0.00000000 0.00000000
CBBTC 0.01111111 0.00000000 0.00000000 0.00000000
CC 0.01111111 0.00000000 0.00000000 0.00000000
CRO 0.01111111 0.00000000 0.00000000 0.00000000
DAI 0.01111111 0.00000000 0.00000000 0.00000000
DOGE 0.01111111 0.00000000 0.00000000 0.00000000
DOT 0.01111111 0.00000000 0.00000000 0.00000000
ENA 0.01111111 0.00000000 0.00000000 0.00000000
ETC 0.01111111 0.00000000 0.00000000 0.00000000
ETH 0.01111111 0.00000000 0.00000000 0.00000000
FBTC 0.01111111 0.00000000 0.00000000 0.00000000
FIGR_HELOC 0.01111111 0.00000000 0.00000000 0.00000000
FIL 0.01111111 0.00000000 0.00000000 0.00000000
FLR 0.01111111 0.00000000 0.00000000 0.00000000
GT 0.01111111 0.00000000 0.00000000 0.00000000
HASH 0.01111111 0.00000000 0.00000000 0.00000000
HBAR 0.01111111 0.00000000 0.00000000 0.00000000
HTX 0.01111111 0.00000000 0.00000000 0.00000000
HYPE 0.00000000 0.00000000 0.16666667 0.00000000
ICP 0.01111111 0.00000000 0.00000000 0.00000000
```

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Source
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XLM 0.01111111 0.00000000 0.00000000 0.00000000
XMR 0.00000000 0.00000000 0.16666667 0.00000000
XRP 0.01111111 0.00000000 0.00000000 0.00000000
ZEC 0.00000000 0.00000000 0.16666667 0.00000000

> # 7. Cross Tabulation using dplyr
> print("Cross Tabulation using dplyr::count():")
[1] "Cross Tabulation using dplyr::count():"
> df %>%
+ count(symbol, return_group)
  symbol return_group n
1 AAVE Low Return 1
2 ADA Low Return 1
3 ALGO Low Return 1
4 APT Low Return 1
5 ARB Low Return 1
6 ASTER Low Return 1
7 ATOM Low Return 1
8 AVAX Low Return 1
9 BCH Low Return 1
10 BFUSD Low Return 1
11 BGB High Return 1
12 BNB Low Return 1
13 BNSOL Low Return 1
14 BSC-USDT Low Return 1
15 BTC Low Return 1
16 BUIDL Low Return 1
17 CBBTC Low Return 1
18 CC Low Return 1
19 CRO Low Return 1
20 DAI Low Return 1
21 DOGE Low Return 1
22 DOT Low Return 1
23 ENA Low Return 1
24 ETC Low Return 1
25 ETH Low Return 1
26 FBT Low Return 1
27 FIGR_HELOC Low Return 1
28 FIL Low Return 1
29 FLR Low Return 1
30 GT Low Return 1
>>
```

```
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Source
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57 RUSD Low Return 1
58 RSETH Low Return 1
59 SHIB Low Return 1
60 SKY Low Return 1
61 SOL Low Return 2
62 STETH Low Return 1
63 SUI Low Return 1
64 SUSDE Low Return 1
65 SUSDS Low Return 1
66 SYRUPUSDC Low Return 1
67 SYRUPUSD Low Return 1
68 TAO Low Return 1
69 TON Low Return 1
70 TRUMP Low Return 1
71 TRX Low Return 1
72 UNI Low Return 1
73 USDT Low Return 1
74 USDC Low Return 2
75 USDE Low Return 1
76 USDF Low Return 1
77 USDG Low Return 1
78 USDS Low Return 1
79 USDT Low Return 1
80 USDT0 Low Return 1
81 USDTB Low Return 1
82 USYC Low Return 1
83 VET Low Return 1
84 WBETH Low Return 1
85 WBNB Low Return 1
86 WBT High Return 1
87 WBTC Low Return 1
88 WEETH Low Return 1
89 WETH Low Return 2
90 WLD Low Return 1
91 WLFI Low Return 1
92 WSTETH Low Return 1
93 XAUT Moderate Return 1
94 XLM Low Return 1
95 XMR High Return 1
96 XRP High Return 1
97 ZEC High Return 1
> library(dplyr)
```