PRACTICAL NO. 2

STATEMENT

THE TIME (IN MINUTES) SPENT BY 10 RANDOMLY SELECTED CUSTOMERS USING THE INTERNET IN A CYBER CAFÉ IS AS FOLLOWS; 35, 20, 30, 45, 60, 40, 65, 40, 25, 50. CAN YOU SAY THAT THE AVERAGE TIME SPENT BY CUSTOMERS IS MORE THAN 30 MINUTES AT 5% LEVEL OF SIGNIFICANCE?

WORKING EXPRESSION

Hypothesis Setup:

1. Null Hypothesis H_0

   $\mu = 30$

   i.e. the average time spent by customers is 30 minutes, indicating no significant difference between the population mean and the sample mean

2. Alternative Hypothesis H_1:

   $\mu > 30$

   This means the average time spent by customers is greater than 30 minutes.

Test Statistics under H_0

$t = \frac{\bar{x} - \mu}{S.E(X)}, \sim t_{(n-1)}$

Where $\bar{x}$ = Sample mean

μ = population mean

$S.E(x) = \frac{s}{\sqrt{n}}$

Level of significance

The level of significance is $\alpha=0.05$.

Critical Region

Using p-value approach

If $p <$ level of significance, we reject H_0

If $p \geq$ level of significance, we failed to reject H_0

CALCULATION

T-Test

[DataSet3]

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
VAR00001	10	41.0000	14.49138	4.58258

One-Sample Test

Test Value = 30

	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
VAR00001	2.400	9	.040	11.00000	.6335	21.3665

DECISION

Since **p < 0.05**, we **reject** H0H_0H0. This means that the average time spent by customers is significantly more than 30 minutes at the 5% level of significance.

RESULT

Hence the value of p is 0.02 which is less than the value of level of significance. So we reject Null Hypothesis and accept Alternative Hypothesis.

CONCLUSION

So, by this way, we can resolve the hypothesis using SPSS.