if(f<qf(alpha/2, df1=n1-1, df2=n2-1) | f>qf(1-(alpha/2), df1=n1-1, df2=n2-1))

{

keputusan="Reject H0"

} else

{

keputusan="Do not Reject H0"

}

—--------------------------------------------------------------------------------

data=mtcars

head(data)

data1=subset(data$mpg,data$am==1);head(data1)

data2=subset(data$mpg,data$am==0);head(data2)

two\_mean=function(data1, data2, d0, alpha)

{

s12=var(data1)

s22=var(data2)

n1=length(data1)

n2=length(data2)

#####TWO-TAIL VARIANS

f=s12/s22

ftab=c(qf(alpha/2, df1=n1-1, df2=n2-1),qf(1-alpha/2, df1=n1-1, df2=n2-1))

p=2\*(1-pf(f, df1=n1-1, df2=n2-1))

LL=(s12/s22)/qf(1-alpha/2, df1=n1-1, df2=n2-1)

UL=(s12/s22)\*qf(1-alpha/2, df1=n2-1, df2=n1-1)

if(p<alpha)

{

keputusan="Reject H0"

} else

{

keputusan="Do not Reject H0"

}

if(f<qf(alpha/2, df1=n1-1, df2=n2-1) | f>qf(1-(alpha/2), df1=n1-1, df2=n2-1))

{

keputusan="Reject H0"

} else

{

keputusan="Do not Reject H0"

}

cat("Varians 2 Population", "\n")

cat("Ha : var1/var2 = 1","\n")

cat("Statistics : ", f,"\n")

cat("CriVal : ", ftab,"\n")

cat("pval : ", p,"\n")

cat((1-alpha)\*100,"% CI : (",LL,"; ",UL,")","\n")

cat("Decision : ", keputusan, "\n")

######TWO-TAIL MEAN

xbar1=mean(data1)

xbar2=mean(data2)

#####VAR1/VAR2 != 1

if(keputusan=="Reject H0")

{

t=((xbar1-xbar2)-d0)/sqrt((s12/n1)+(s22/n2))

v=(((s12/n1)+(s22/n2))^2)/(((s12/n1)^2)/(n1-1)+((s22/n1)^2)/(n2-1))

ttab=qt(1-alpha/2, df=v) #Critical value

p1=1-pt(t, df=v) #P-value

LL1=(xbar1-xbar2)-(qt(1-alpha/2, df=v))\*sqrt((s12/n1)+(s22/n2)) #Lower limit

UL1=(xbar1-xbar2)+(qt(1-alpha/2, df=v))\*sqrt((s12/n1)+(s22/n2))

if(p1<alpha)

{

keputusan1="Reject H0"

} else

{

keputusan1="Do not Reject H0"

}

}

else

{

v=n1+n2-2

sp2=((n1-1)\*s12+(n2-1)\*s22)/v

sp=sqrt(sp2)

t=((xbar1-xbar2)-d0)/(sp\*sqrt((1/n1)+(1/n2)))

ttab=qt(1-alpha/2, df=v) #Critical value

p1=1-pt(t, df=v) #P-value

LL1=(xbar1-xbar2)-(qt(1-alpha/2, df=v))\*sp\*sqrt((1/n1)+(1/n2)) #Lower limit

UL1=(xbar1-xbar2)+(qt(1-alpha/2, df=v))\*sp\*sqrt((1/n1)+(1/n2))

if(p1<alpha)

{

keputusan1="Reject H0"

} else

{

keputusan1="Do not Reject H0"

}

}

cat("\n")

cat("Mean 2 Population", "\n")

cat("Ha : mu1-mu2 ! = ", d0,"\n")

cat("Statistics : ", t,"\n")

cat("CriVal : ", ttab,"\n")

cat("pval : ", p1,"\n")

cat((1-alpha)\*100,"% CI : (",LL1,"; ",UL1,")","\n")

cat("Decision : ", keputusan1)

}

two\_mean(data1, data2, 0, 0.05)