T1-P1-R software practical on Correlation & Regression-Instructions, Sample Question and code with output

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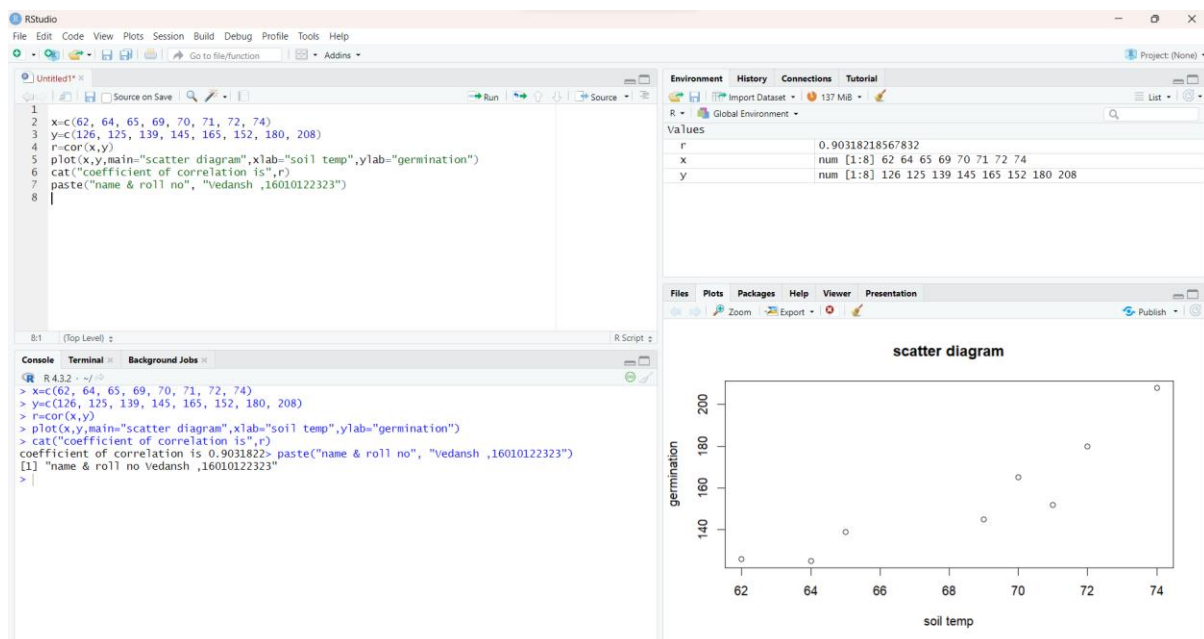
Q.1 :

x (^0F)	62	64	65	69	70	71	72	74
y(days)	126	125	139	145	165	152	180	208

CODE

```
x=c(62, 64, 65, 69, 70, 71, 72, 74)
y=c(126, 125, 139, 145, 165, 152, 180, 208)
r=cor(x,y)
plot(x,y,main="scatter diagram",xlab="soil temp",ylab="germination")
cat("coefficient of correlation is",r)
paste("name & roll no", "Vedansh ,16010122323")
```

OUTPUT

CODE :

```
x=c(70, 72, 74, 76, 78, 80)
y=c(163, 170, 179, 188, 196, 220)
r1=lm(y~x) # gives equation of of regression of y on x
co=coef(r1)#  gives values of constantsa,b in equation  y=a+b*x
mco=matrix(co) # column matrix of  constantsa,b
a=mco[1,1]
cat ("constant term a is",a)
b=mco[2,1]
cat ("value of b is",b)
esty=fitted(r1)# gives estimated values of y for the given values of x
cat ("estimated values of y are", esty)  # display estimated values of y for the given values of
x
x1=2016
ey=a+b*x1
cat ("estimated value of sale for year 2016 is",ey)
plot (x,y,pch="+") # plots  points corresponding to x and  given value of y   (+)
points(x,esty,pch="*") # plots  points corresponding to x and  it's estimated value of y   (*)
lines(x,y , col="green")  # plots line corresponding to x and  given value of y   (+) using green
colour
lines(x,esty , col="red")# plots line between x and estimated value of y   (*) using red colour
paste("name & roll no", "Vedansh ,160101022323")
```

OUTPUT
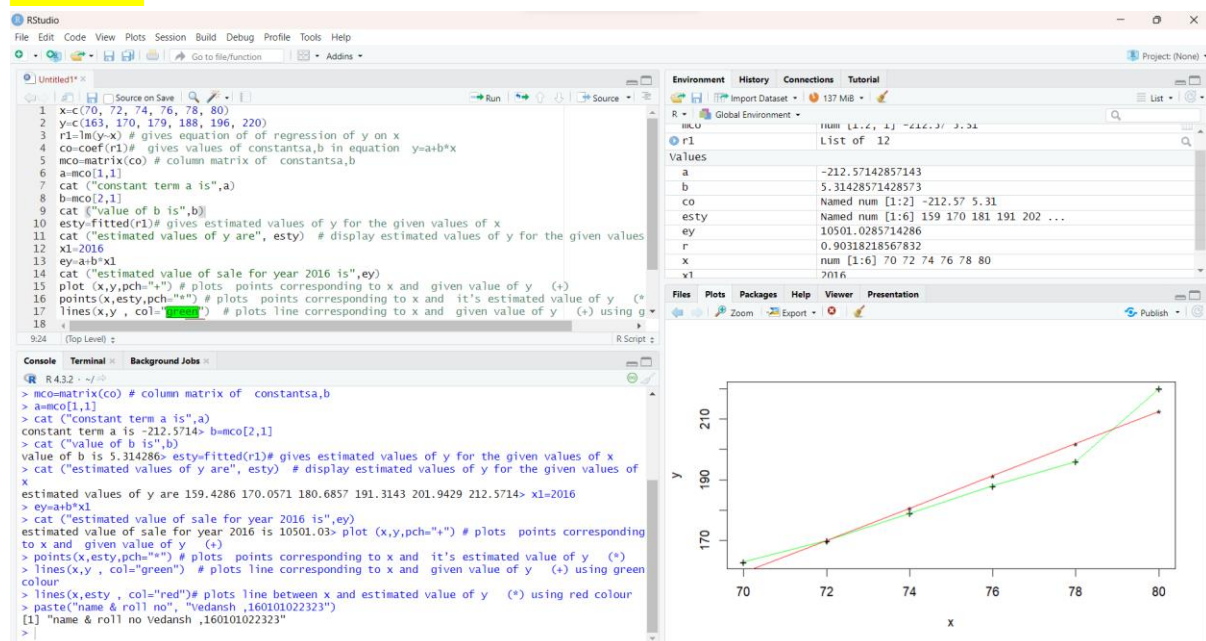
CODE :

```
x=c(65, 66, 67, 68, 69, 70, 72)
y=c(67, 68, 65, 66, 72, 72, 69, 71)
r1=lm(x~y) # gives equation of of regression line of x on y(i.e.x=a+by)
co=coef(r1) #  gives values of  a,b
mco=matrix(co) # column matrix of  a,b
a=mco[1,1]
cat ("constant term a is",a)
b=mco[2,1]
cat ("value of b is",b)
estx=fitted(r1)  # gives estimated values of y for the given values of x
cat ("estimated values of x are", estx)  # display estimated values of y for the given values of x
y1=150
ex=a+b*y1
cat ("estimated value of X is",ex)
plot (x,y,pch="+") # plots  points corresponding to x and  given value of y   (+)
points(estx,y,pch="*") # plots  points corresponding to x and  it's estimated value of y   (*)
lines(x,y , col="green")  # plots line corresponding to x and  given value of y   (+) using green colour
lines(estx,y , col="red")# plots line between y and estimated value of x (*) using red colour
paste("name & roll no", "Vedansh ,16010122323")
```

OUTPUT