BRAC UNIVERSITY

CSE110||SPRING-24

Question 1:

```
String [] planets = {"venus", "mars", "jupiter", "earth", "neptune"};
double [] x_coordinate = {0.15, 0.12, 1.15, 0.00, 0.98};
double [] y_coordinate = {0.55, -1.12, 0.79, 1.17, 1.11};
double [] z_coordinate = {1.22, 0.11, 0.55, 0.45, 0.67};
```

Take a planet name as an input from the user and determine which other planet is closest to that planet. If the planet is not found in the given planets array, the print **invalid input**
The formula of distance to be used here is,
Distance = $(x-x')^2 + (y-y')^2 + (z-z')^2$

Example #1:
if the user inputs earth, the output should be:
the closest planet is: venus
the distance between earth and venus is: 0.9997999999999998

Example #2 :
if the user inputs mars, the output should be:
the closest planet is: venus
the distance between mars and venus is: 4.0219000000000005

Question 2:

For a given string, if the character is in small letter, then replace the character by it's 3rd last character, if there can not be any 3rd last character, then count From backward like c>b>a>z>y>x . If the character is in block letter, let it be as it is.

Example #1:
Input: SaharaDesert
Output : SxexoxDbpboq

Example #2:
Input: BracU
Output : BoxzU

Question 3: Tracing(Recursion)