Step-1

Consider the equation of the plane,

$x + y - z = 0.$

The objective is to find the point on the plane that is closest to the point $b = (2,1,0).$

Step-2

First construct the equation of the line through the point $b = (2,1,0)$ and find the intersection point at which the point $b = (2,1,0)$ intersects the plane.

The normal vector of the plane is the directional vector of the line perpendicular to the line.

$\mathbf{n} = \langle 1,1,-1 \rangle.$

The equation of the line is

$$\begin{aligned} L(t) &= b + t\mathbf{n} \\ &= \langle 2,1,0 \rangle + t\langle 1,1,-1 \rangle \\ &= \langle 2+t, 1+t, -t \rangle \end{aligned}$$

Thus, the parametric equations of the plane are $x = 2+t,\ y = 1+t,\ z = -t.$

Step-3

Substitute the values of *x, y*, and *z* in the equation of the plane $x + y - z = 0.$

$$\begin{aligned} x + y - z &= 0 \\ 2+t+1+t-(-t) &= 0 \\ 2+t+1+t+t &= 0 \end{aligned}$$

$$\begin{aligned} 3+3t &= 0 \\ 3t &= -3 \\ t &= -1 \end{aligned}$$

Step-4

Substitute $t = -1$ in the equations $x = 2+t,\ y = 1+t,\ z = -t.$

$$\begin{aligned} x &= 2+t \\ &= 2+(-1) \qquad \text{Substitute } t=-1 \\ &= 2-1 \\ &= 1 \end{aligned}$$

$$\begin{aligned} y &= 1+t \\ &= 1+(-1) \\ &= 1-1 \\ &= 0 \end{aligned}$$

$$\begin{aligned} z &= -t \\ &= -(-1) \\ &= 1 \end{aligned}$$

Therefore, the point of intersection is $(1,0,1)$.

Hence, the point on the plane $x+y-z=0$ that is closes to the point $b=(2,1,0)$ is $\boxed{(1,0,1)}$.