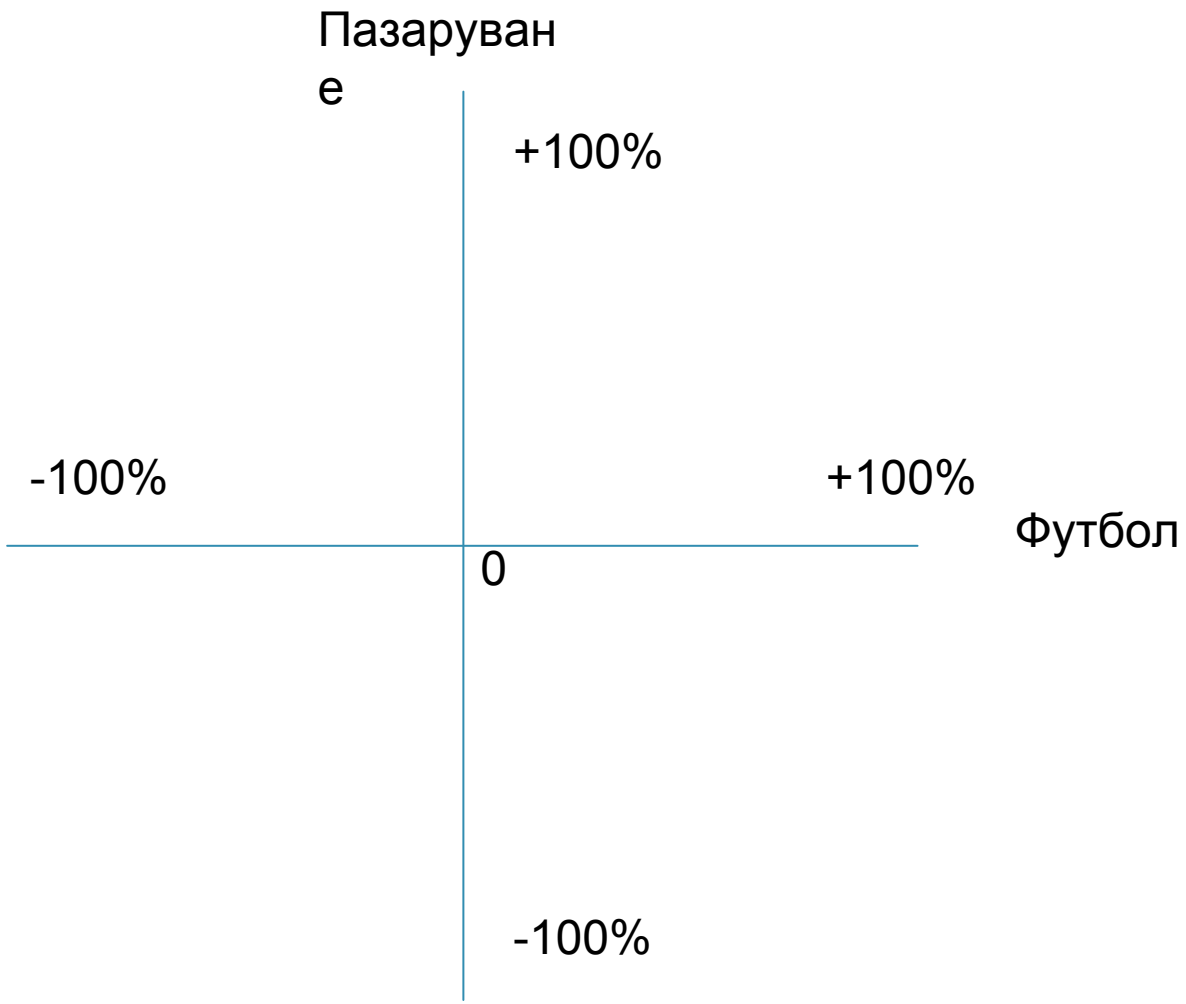
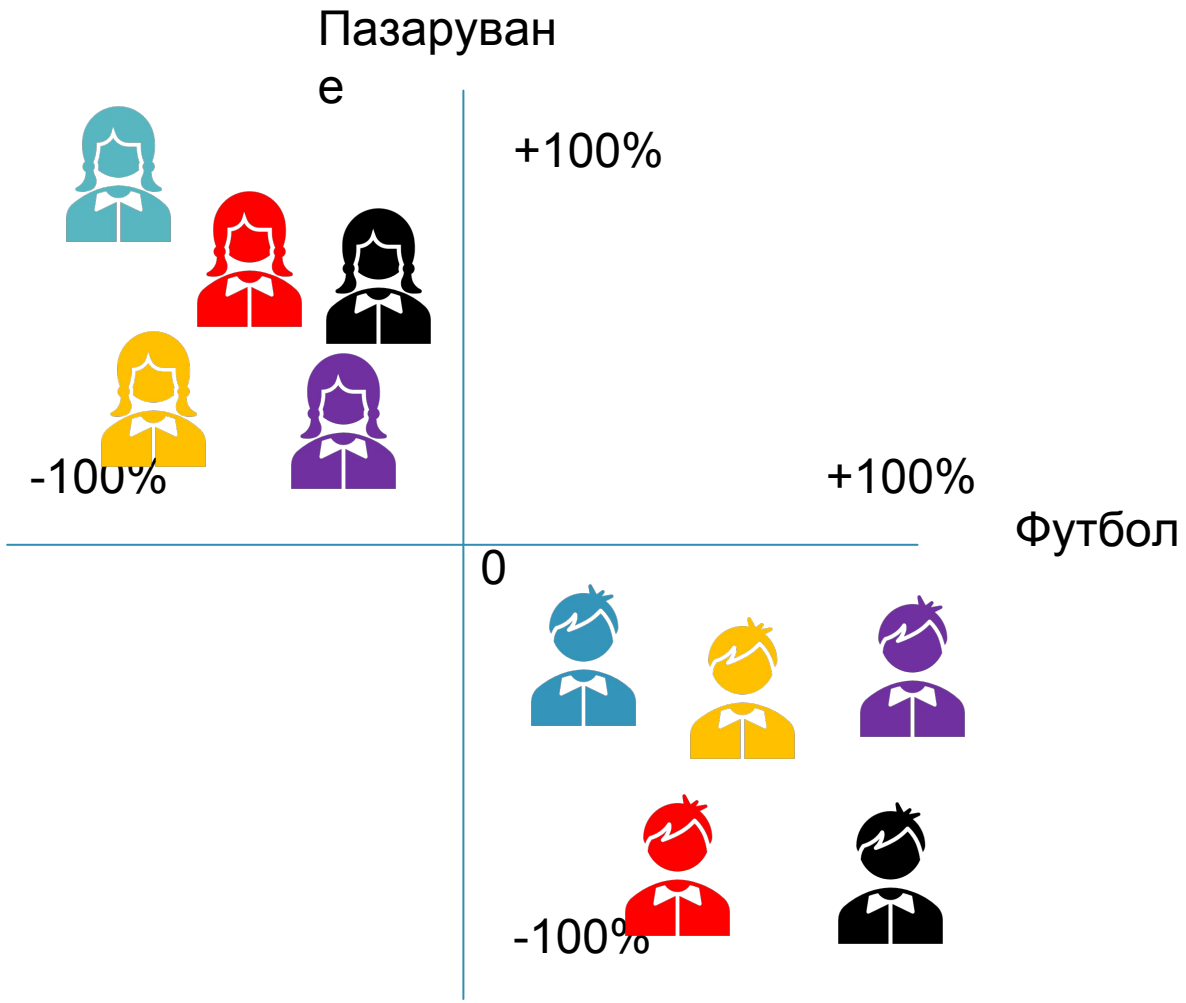
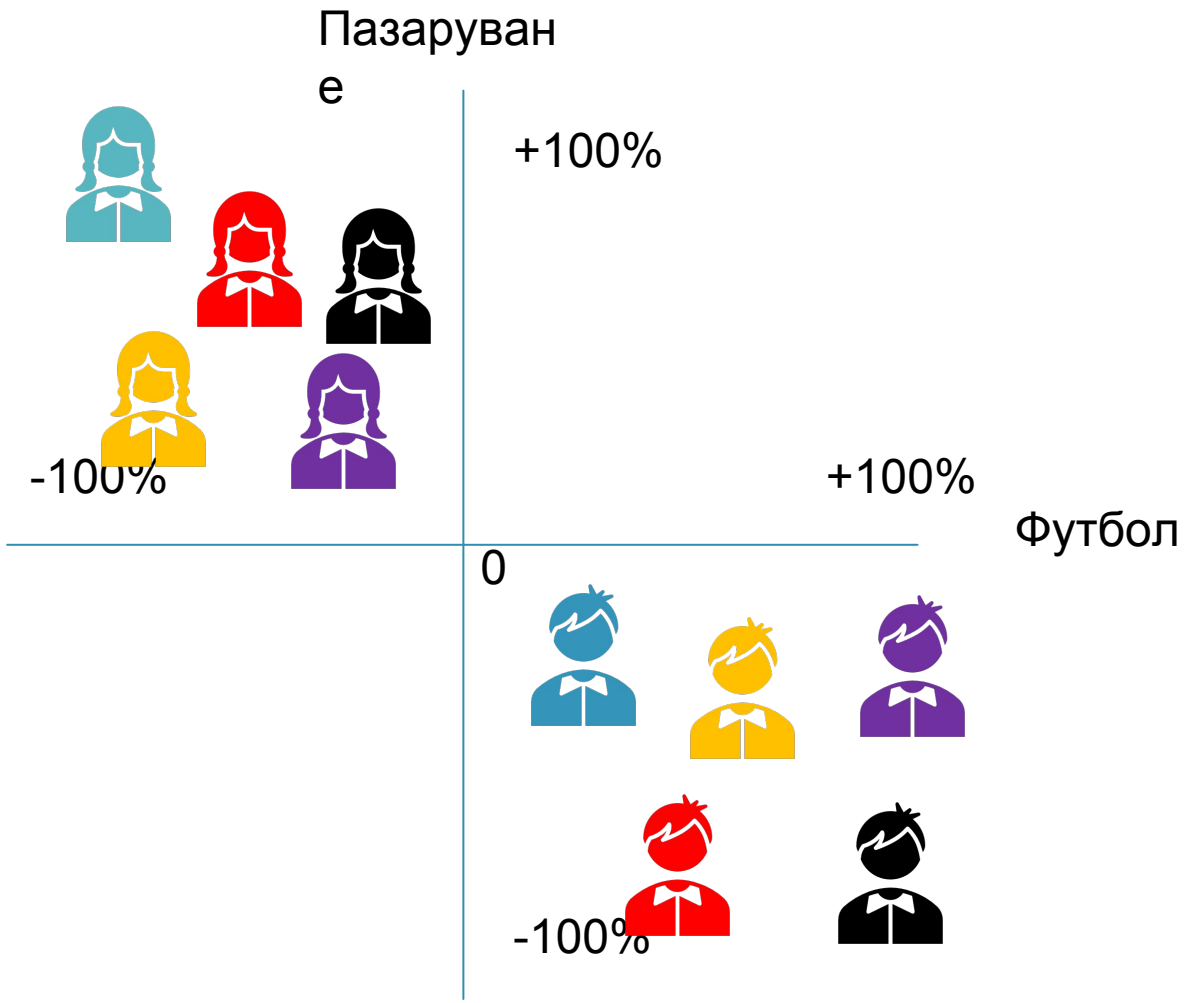
Въведение в Artificial Neural Network и Deep Learning

Тема 1 - Въведение


Пазаруване
+100%
-100%
+100%
Футбол
0
-100%


Пазаруване
+100%
-100%
+100%
Футбол
0
-100%

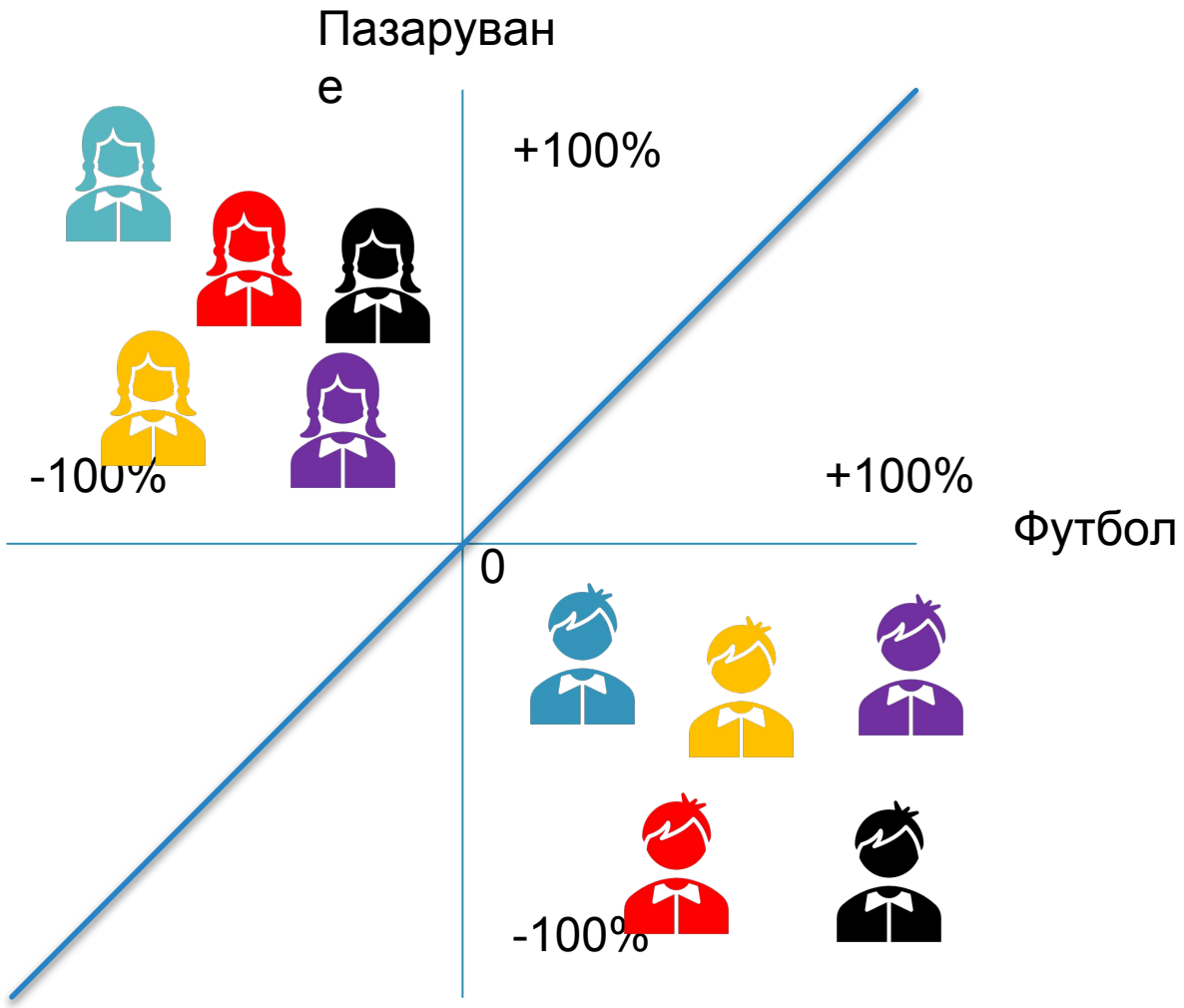


Пазаруване %

Футбол %

?

Момиче или момче?

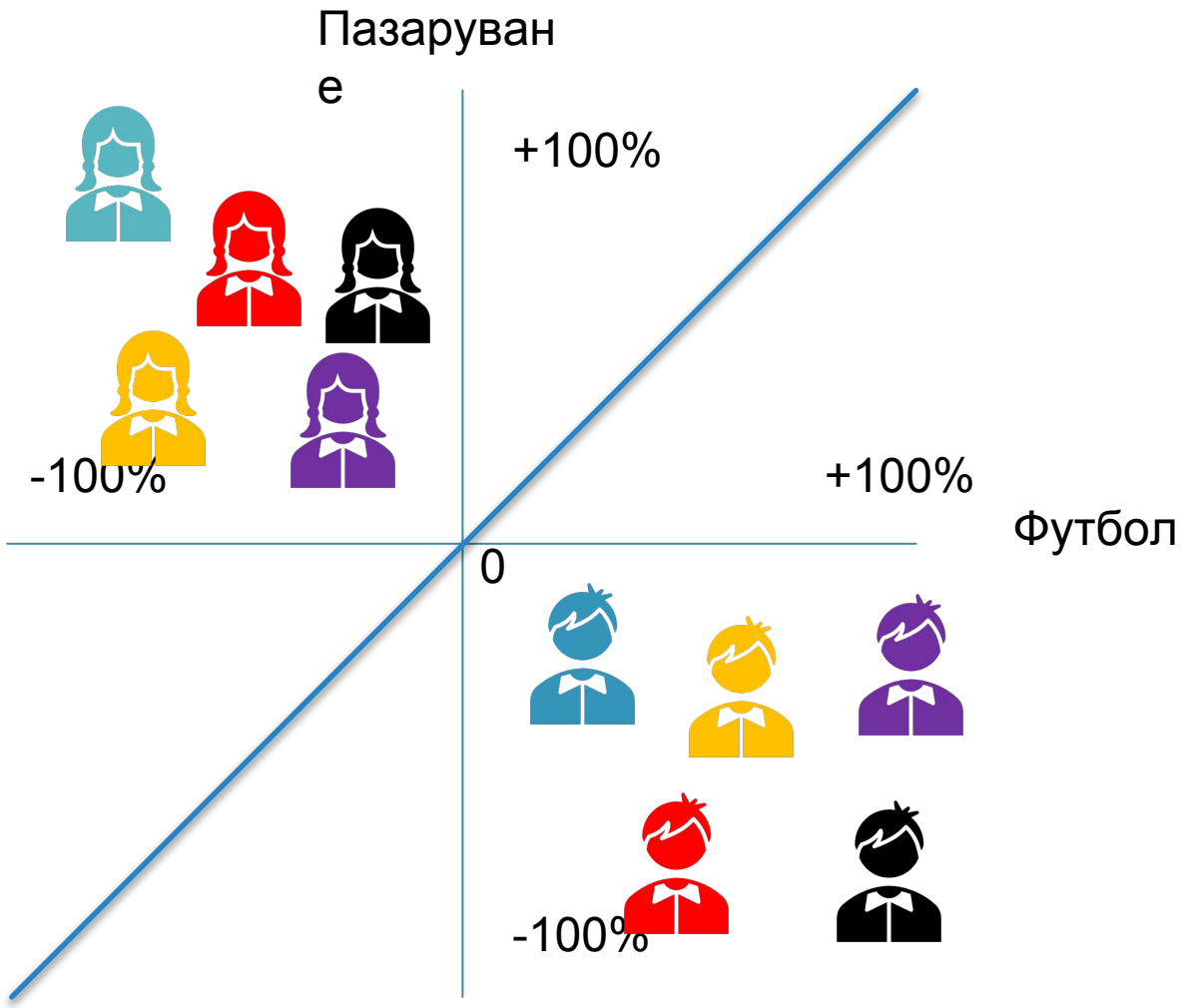


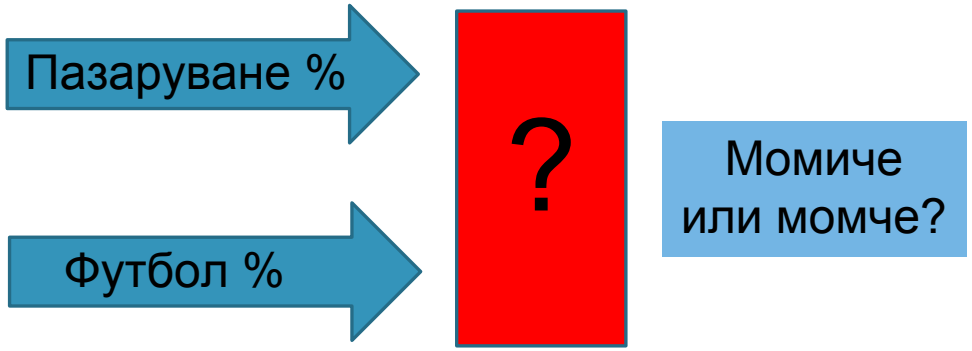
Пазаруване %

Футбол %

?

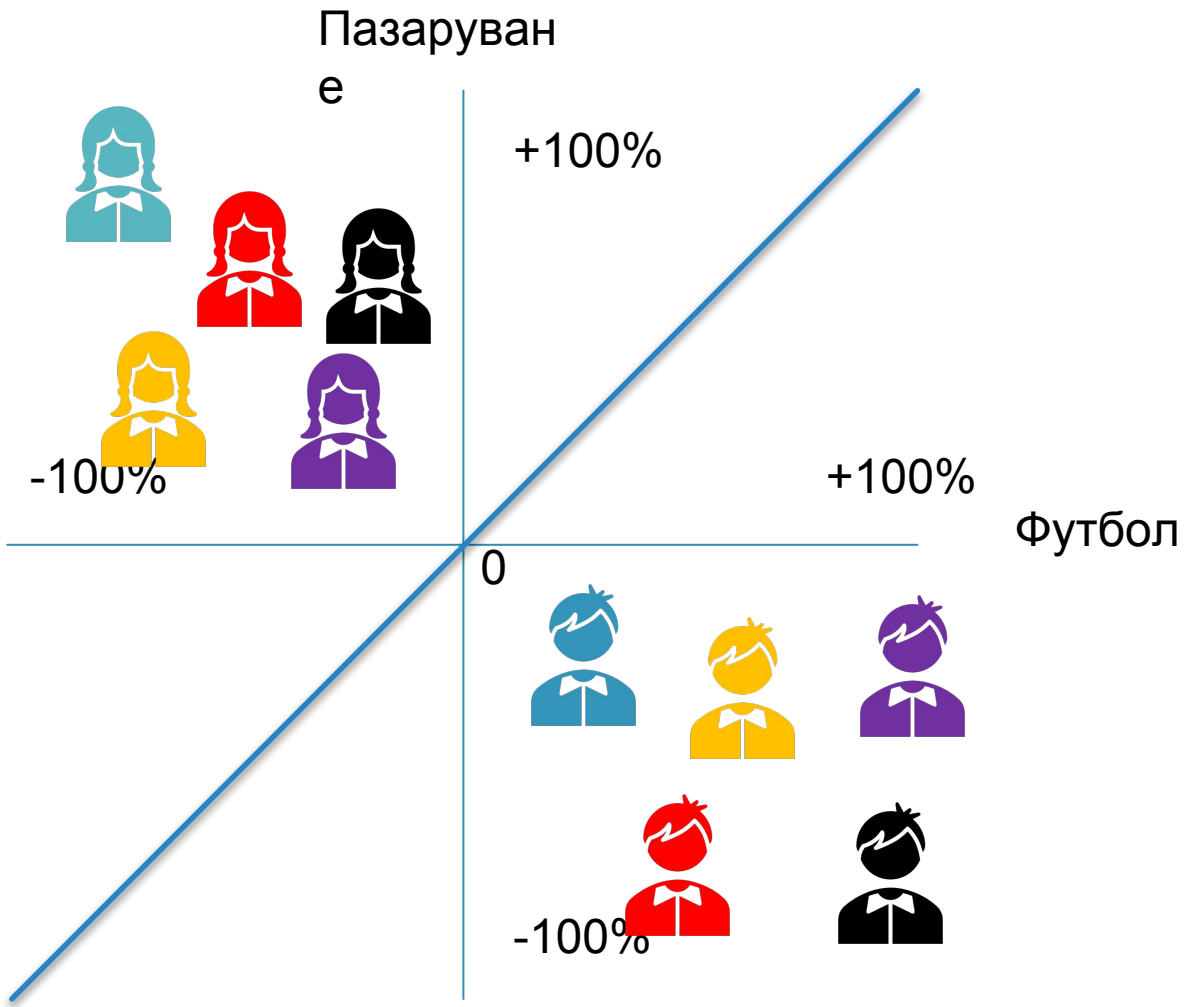
Момиче или момче?





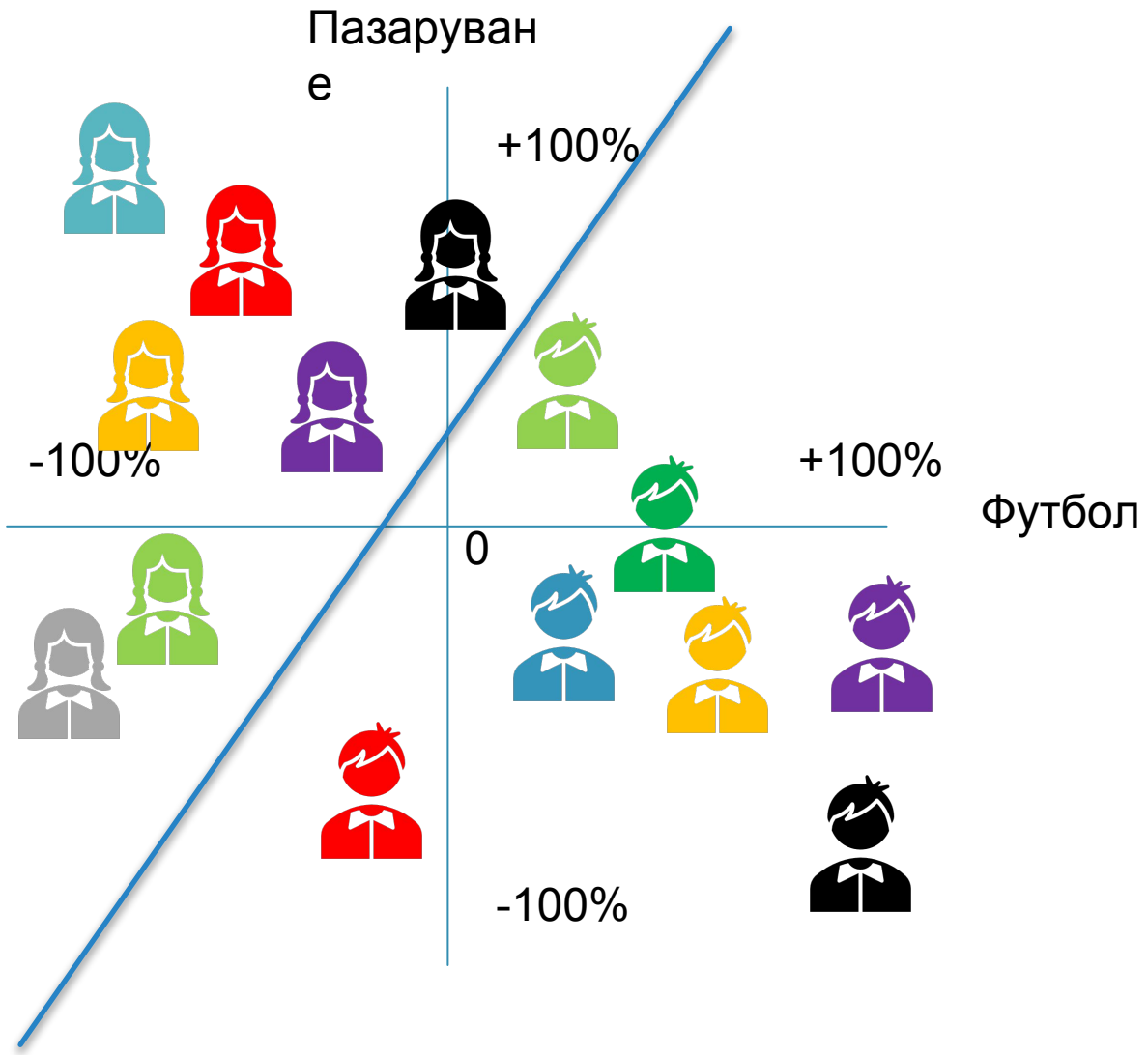
$$(y - y_0) = m\,(x - x_0)$$
$$(y - 0) = 1\,(x - 0)$$
$$y = x$$
$$x - y = 0$$

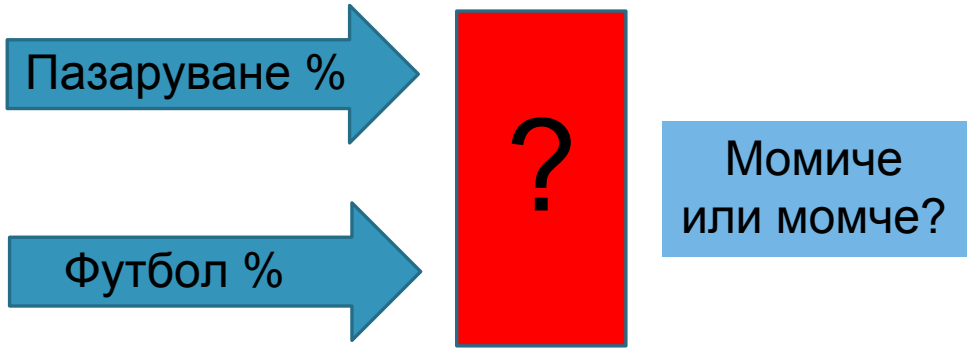
$$\text{Пола} = \begin{cases} 1\ (\text{момче})\ x - y > 0 \\ 0\ (\text{момиче})\ x - y < 0 \end{cases}$$



$$x = -90, y = 30$$
$$-90 - 30 = -120 < 0$$

$$x = 100, y = -90$$
$$100 - 90 = 10 > 0$$

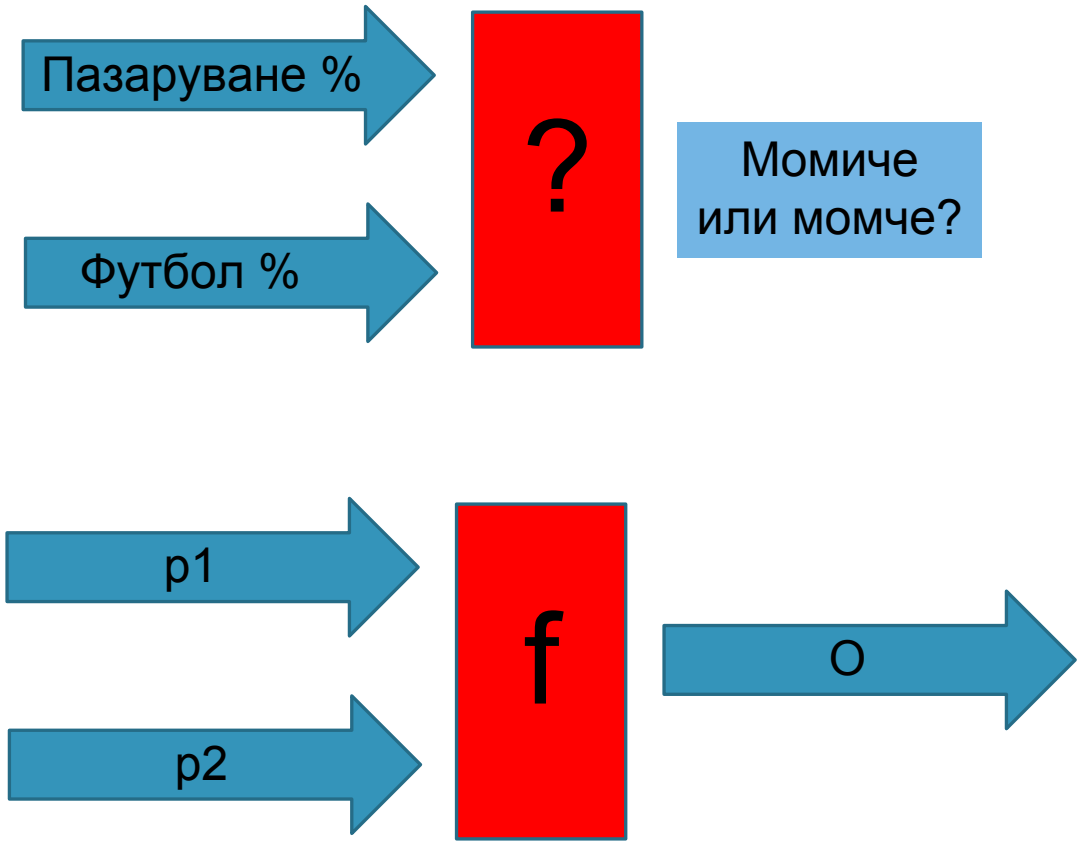




$$(y - y_0) = m\,(x - x_0)$$
$$(y - 0) = 1\,(x - 0)$$
$$y = x$$
$$x - y = 0$$

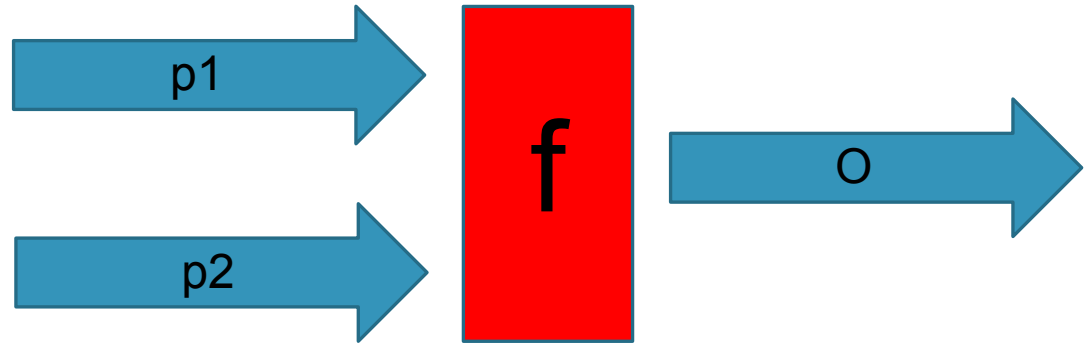
$$\text{Пола} = \begin{cases} 1\ (\text{момче})\ x - y > 0 \\ 0\ (\text{момиче})\ x - y < 0 \end{cases}$$

Математическо представяне



$$0 = f(x, y) = \begin{cases} 1\ y - x > 0 \\ 0\ y - x < 0 \end{cases}$$

$$0 = f(p1, p2) = \begin{cases} 1\ p1w1 + p2w2 > 0 \\ 0\ p1w1 + p2w2 < 0 \end{cases}$$



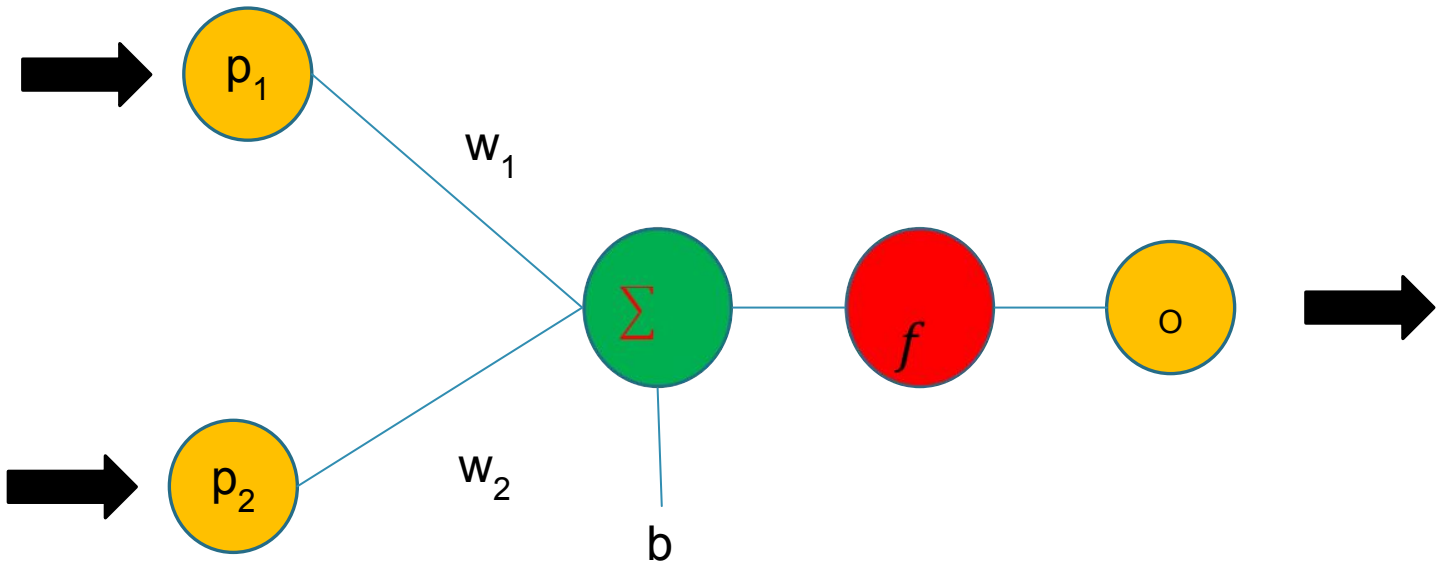
$$0 = f(p1, p2) = \begin{cases} 1 \; p1w1 + p2w2 > 0 \\ 0 \; p1w1 + p2w2 < 0 \end{cases}$$

$$f(p1, p2) = \begin{cases} 1 \; p1w1 + p2w2 > b \\ 0 \; p1w1 + p2w2 < b \end{cases}$$

$$f(p1, p2) = \begin{cases} 1 \; p1w1 + p2w2 \; - b > 0 \\ 0 \; p1w1 + p2w2 \; - b < 0 \end{cases}$$

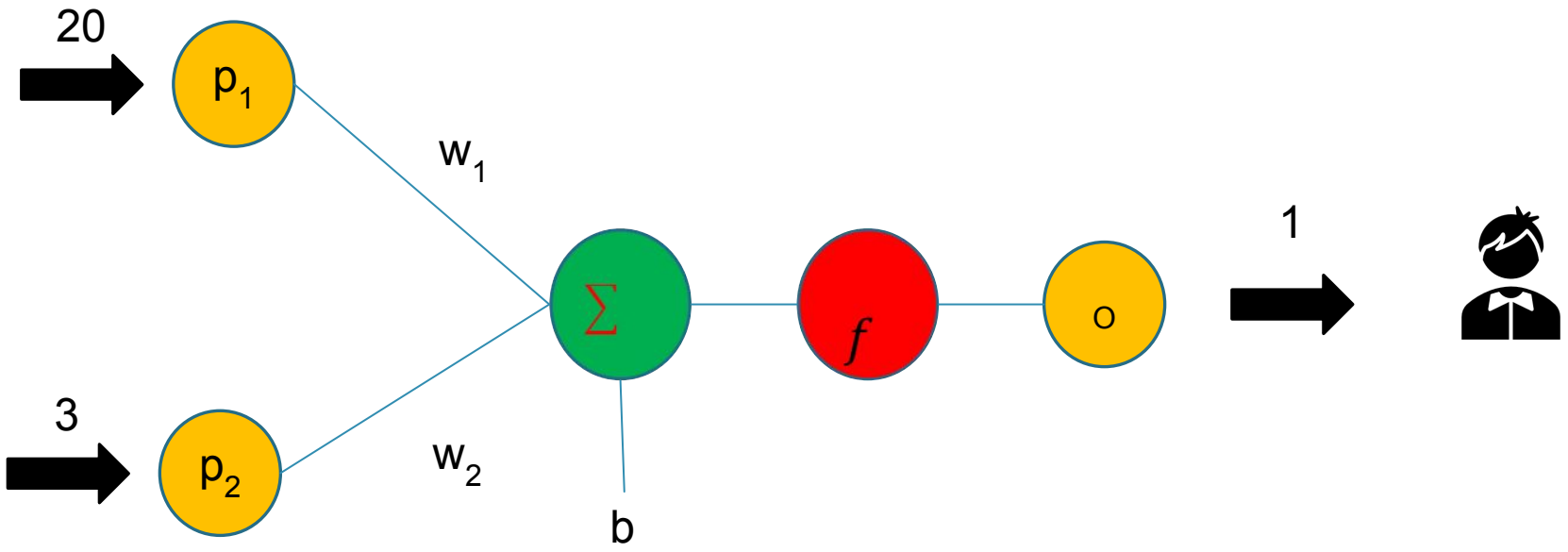
$$f(p1, p2) = \begin{cases} 1 \; p1w1 + p2w2 + b > 0 \\ 0 \; p1w1 + p2w2 + b < 0 \end{cases}$$

$$o = f(p1, p2) = \begin{cases} 1 \; p1w1 + p2w2 + b > 0 \\ 0 \; p1w1 + p2w2 + b < 0 \end{cases}$$



(20, 3) момче или момиче?

$$o = f(p1, p2) = \begin{cases} 1\ p1 * 1 + p2 * -1 + 0 > 0 \\ 0\ p1 * 1 + p2 * -1 + 0 < 0 \end{cases}$$



(3, 20) момче или момиче?

$$o = f(p1, p2) = \begin{cases} 1\ p1 * 1 + p2 * -1 + 0 > 0 \\ 0\ p1 * 1 + p2 * -1 + 0 < 0 \end{cases}$$