```fortran
1  *************************************************************************
2  *     UPDATE_EST - Updates the estimated yield of magic beans given
3  *        some additional amount of rainfall
4  *************************************************************************
5  *
6  *     VARIABLES
7  *
8  *     INPUT RAIN      = Additional rainfall
9  *
10 *     INOUT YIELD_EST = Crop yield to update
11 *
12 *************************************************************************
13     SUBROUTINE UPDATE_EST(RAIN, TOTAL_RAIN, YIELD_EST)
14       DOUBLE PRECISION RAIN, YIELD_EST, TOTAL_RAIN
15       TOTAL_RAIN = TOTAL_RAIN + RAIN
16
17 *        Yield increases up to a point
18       IF(TOTAL_RAIN .le. 40) THEN
19          YIELD_EST = -(TOTAL_RAIN - 40) ** 2 / 16 + 100
20
21 *        Then sharply declines
22       ELSE
23          YIELD_EST = -TOTAL_RAIN + 140
24       ENDIF
25
26     END SUBROUTINE UPDATE_EST
27
```