

Rubik's Cube Solution

Layer by Layer method (Morphocode)

This method is very classic, layer by layer. We first finish the Down (1st layer) then the Equator (2nd layer) then the Up (3rd layer)

arrange = good place and good orientation

-Finish the Down: arrange edges then vertices

-Finish the Equator

-Finish the Up: arrange edges then vertices

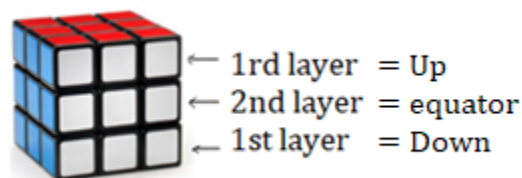
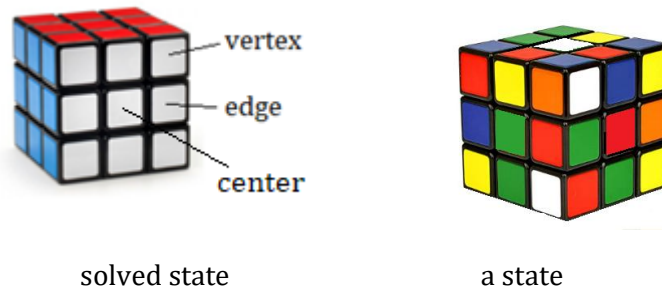
Rotations and colors

We'll name the faces and fix the Cube:

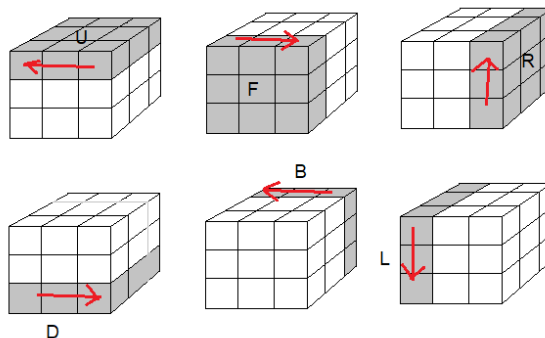
U(p)=w(hite), D(own)=y(ellow), F(ront)=g(reen), B(ack)=b(lue), L(eft)=o(range), R(right)=r(red)

vertex = (white,blue,red) = (wbr)

edge = (white,blue) = (wb)



Rotations



Standing in front of the Front face: The letter F means to turn the Front face 90° clockwise.

F' = Turn -90° (the inverse of F, anti-clockwise)

$F^2 = FF =$ Turn 180°

The point '.' or the brackets '(', ')' in the formulas just to facilitate for reading that's all !!!

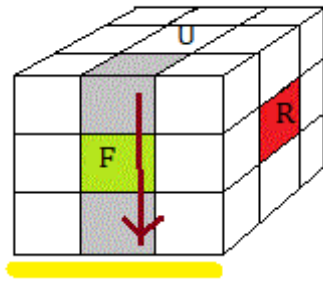
I- Arrange the Down-edges (make the Down-Cross)

We are going to arrange (place and orient) the Down-edges, i.e. we make the Down Cross.

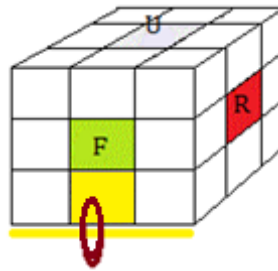
Green center in front of you : Find the Down-edge (yellow,green), place it just above (see fig), then do an F^2 to go down the edge. If the edge is badly oriented, we orient it by the formula:

$DRD'.F$

We do the same thing with the other Down-edges (yellow edges)

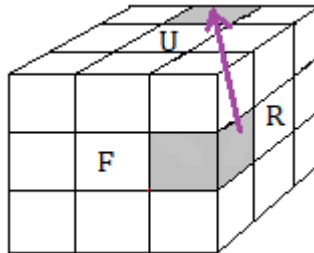


Put down a edge: F^2



Orient a edge: $DRD'.F$

If the Down-edge is at the Equator, we move it to the Up by $URU'R'$.



move a Equator-edge to Up : $URU'R'$

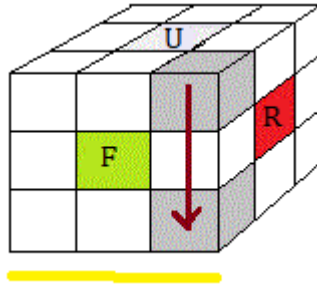
II- Arrange the Down-vertex

We are going to arrange (place and orient) the Down-vertex, i.e. to finish the Down.

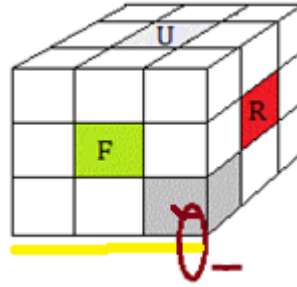
Green center in front of you : Find the Down-vertex (yellow,green,red), then place it just above (see fig), then we put it down by the formula: $URU'R'$.

If it is badly oriented, we twist anti-clockwise it by the formula $(URU'R')^2$ (do 2 times this formula if necessary)

We do the same for the other Down-vertices (yellow vertices)



put down a vertex: $URU'R'$



twist anti-clockwise a vertex: $(URU'R')^2$

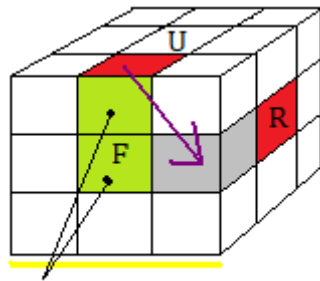
III- Arrange Equator-edge

Find an equator-edge, i.e. an edge that has no Up color (white), then position it as needed:

Depending on the case, the corresponding formula is applied:

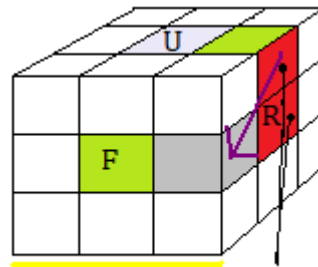
▫ $(URU'R') (U'F'UF)$ (we could say: $(URU'R')$ =prepare and $(U'F'UF)$ =place)

▫ $(U'F'UF) (URU'R')$ (we could say: $(U'F'UF)$ =prepare and $(URU'R')$ =place)



same color

$(URU'R') (U'F'UF)$



same color

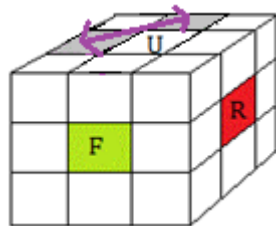
$(U'F'UF) (URU'R')$

Note: If an Equator-edge is in (FR), we dislodge it by putting anything there !! .

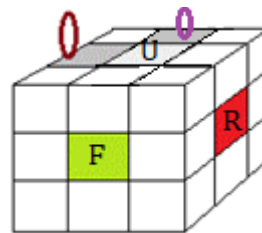
IV- Arrange the Up-edge

We place the Up-edges thanks to the formula: $U' .F(URU'R')F'$

and they are oriented by the formula: $[U' .F(URU'R')F']^2$



$U' .F(URU'R')F'$

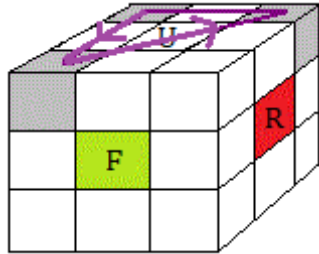


$[U' .F(URU'R')F']^2$

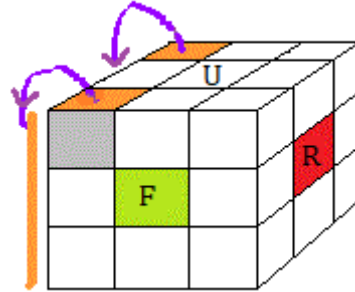
V- Arrange the Up-vertices

We will place the Up-vertices with the formula: $(URU'R') \cdot L'(RUR'U)L$

and orient them by $(URU'R')^2 \cdot L' (RUR'U)^2 L$ (move 2 Up colors to Left)



$(URU'R') \cdot L'(RUR'U)L$



$(URU'R')^2 \cdot L' (RUR'U)^2 L$

and !!

