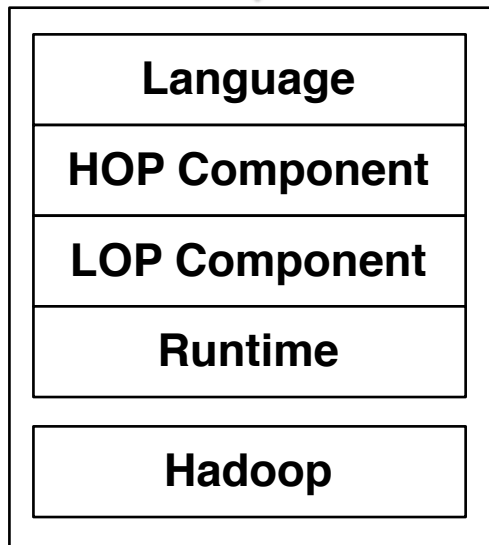


```
V = readMM("in/V", rows= 1e8, cols=1e5, nnzs=1e10) ;  
max_iteration = 20 ;  
while(i < max_iteration) {  
    H = H * (t(W) %*% W) / (t(W) %*% W %*% H) ;  
    W = W * (V %*% t(H)) / (W %*% H %*% t(H)) ;  
}  
writeMM(W, "out/W") ;  
writeMM(H, "out/H") ;
```

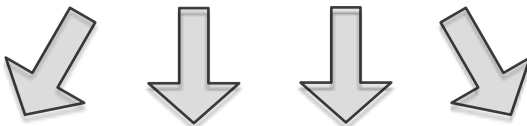
Data analyst writes
high level code

DML Script



SystemML *compiles and optimizes* the code into a Hadoop implementation

SystemML



ML code is executed
on a Hadoop cluster