```
CacheMiss handleReplacement(ref) {
    if(ref.read && ref.fromDelinquentPc && ref.fromMT) {
        return new CacheMiss(ref, -1);
    }

    return new CacheMiss(ref, getLRU(ref.set));
}

void handlPromotionOnHit(hit) {
    if(hit.ref.read && hit.line.ht && hit.ref.fromMT) {
        setLRU(hit.ref.set, hit.way);
        hit.line.ht = false;
    }
    else {
        setMRU(hit.ref.set, hit.way);
    }
}

void handleInsertionOnMiss(miss) {
    miss.line.ht = false;

    if(miss.ref.read && miss.ref.fromDelinquentPc) {
        if(miss.ref.fromMT) {
            setLRU(miss.ref.set, miss.way);
        }
        else if(miss.ref.fromHT) {
            setMRU(miss.ref.set, miss.way);
            miss.ref.ht = true;
        }
        else {
            setMRU(miss.ref.set, miss.way);
        }
    }
    else {
        setMRU(miss.ref.set, miss.way);
    }
}


```