void ReceiveNewAlert(IDMEF newMessage)  
{  
 Insert newMessage to DB;  
}

void Correlate(IPAddress sourceIP, IPAddress targetIP, int sourcePort, int targetPort, time, beginTime, time endTime)  
{  
 Get all alerts from DB with attribute sourceIP, targetIP, sourcePort, targetPort and times are in range[beginTime, endTime] into list alertList;  
 for each message A in alertList  
 {  
 Convert A into hyper alert H with format:(hyperAlertTypeName, fact, beginTime, endTime);  
 Use hyperAlertTypeName to retrieve Hyper Alert Type HT from DB;  
 /\*Hyper Alert Type = (Fact, Prerequisite, Consequence)\*/  
 Use H.fact to replace free variables in HT.Prerequisite to get a list of predicates;  
 Split list of predicates into separated single predicate pPrei;  
 Insert each pair(pPrei, H) to prerequisite list;  
   
 Use H.fact to replace free variables in HT.Consequence to get a list of predicates;  
 Split list of predicates into separated single predicate pConi;  
 Insert each pair(pConi, H) to consequence list;  
 }  
   
 for each row rp in prerequisite list  
 {  
 for each row rc in consequence list  
 {  
 if rp.predicate = rc.predicate and edge(rp.hyperAlert, rc.hyperAlert) not in graph G  
 Add edge(rp.hyperAlert, rc.hyperAlert) to G;   
 }   
 }

}  
AttackList Predict()  
{  
 nextAttackList = null;  
 for each row r in consequence list  
 {  
 for each Hyper Alert Type ht in DB  
 {  
 if r.predicate is in one of predicates in ht.Prerequisite then  
 Add Hyper Alert Type ht into nextAttackList;  
 }   
 }  
 return nextAttackList;  
}