User	*GM*	*DS*
Uploading		
	1. System Parameter Generation	
	$\lambda = (f(\cdot),\ h(\cdot),\ q)$	
	2. Key Generation	
	$\{gk\},\ \{ik,\ dk\}$	
$\xleftarrow{f_{gk_i^j}(ik_i^j, dk_i^j)}$	*Transfer*	
3. Index Generation and Document Encryption		
$\xrightarrow{\{d_n, f_{dk_i^j}(D_n), f_{ik_i^j}(w_{n,1}), f_{ik_i^j}(w_{n,2}), \ldots\}}$		
	4. Database Update	
	$Re-encrypt$; $\xrightarrow{\{f_{k_c}(d_n), f_{k_c}(f_{dk_i^j}(D_n)), f_{k_c}(f_{ik_i^j}(w_{n,1})), \ldots\}}$	Insert to Database
Downloading		
1. Trapdoor Generation		
$\xrightarrow{T_w = (f_{ik_i^1}(w),\ \ldots, f_{ik_i^j}(w))}$		
	$Re-encrypt$; $\xrightarrow{T_w = (f_{k_c}(f_{ik_i^1}(w)),\ \ldots, f_{k_c}(f_{ik_i^j}(w)))}$	**2. Retrieval**
		Index List
		Encrypted Document
		Return; $\xleftarrow{\{f_{k_c}(f_{dk_i^s}(D_t))\}}$
	Decrypt; $\xleftarrow{\{f_{dk_i^s}(D_t)\}}$	
3. Decryption		
$\{D_t\}$		