**Data Processing**

**Data Structure:**

1. MessageClient:  
   method: int  
   message: String  
   error : int[MAX]  
   sender: int  
   group: int  
   receiver: int
2. MessageServer:  
   method: int  
   message: String  
   error: int[MAX]  
   sender: int   
   list: [Object{id, name},…]
3. JSON

**Modules:**

1. **Wrap Server Message**
   1. **Input:** MessageServer
   2. **Output:** JSON String
   3. **Task:**  
      Write function for developer so that:
      1. Passing struct MessageServer as parameter
      2. Receive equivalent JSON
   4. **Require:**
      1. Method must be >= 0 or error
      2. JSON must follow the format MessageClient
      3. Value of key not in MessageClient is set as default values.
2. **Wrap Client Message**
   1. **Input:** MessageClient
   2. **Output:** JSON String
   3. **Task:**
      1. Write functions for developer so that:
         1. Passing struct Message Server as parameters.
         2. Receive equivalent JSON
   4. **Require:**
      1. Method must be >= 0 or error
      2. JSON must follow the format of MessageClient
      3. Value of key not in Message is set as default values.
3. **Open Message Server**
   1. **Input :** JSON String
   2. **Output:** MessageServer
   3. **Task:**
      1. Write functions for developer so that:
         1. Passing JSON as parameters
         2. Receive equivalent structure data.
4. **Open Message Client**
   1. **Input:** JSON String
   2. **Output:** MessageClient
   3. **Task:**
      1. Write functions for developer so that
         1. Passing JSON as parameters
         2. Receive equivalent structure data.