Test Plan

Function name: int main()  
Test Description: Provide valid and invalid test files and check for desired output  
Success Case: Given correct input file the system shall return correct output. Given file with incorrect data only valid information from that file shall be returned.

Function name: int verifySentence (char \*sentence)  
Test Description: Provide valid and invalid NMEA strings and ensure only valid NMEA strings are passed  
Success Case: Given correct input NMEA string the system shall return 0. Given invalid input string the system shall return 1.

Function name: int validateChecksum (char \*sentence)  
Test Description: Provide valid and invalid NMEA strings and ensure only valid NMEA strings are passed  
Success Case: Given correct input NMEA string the system shall return 0. Given invalid input string the system shall return 1.

Function name: int parse (struct NMEAData \*dataStore, char \*sentence)  
Test Description: Calls the appropriate parse function for the sentence based on the message type.  
Success Case: Returns a 0 for success, 1 for failure, or -1 if an unknown message type is found.

Function name: int parseXXXMessage (struct NMEAData \*dataStore, char \*sentence)  
Test Description: Verifies the structure of the message and parses it based on the message type (GGA, GLL, GSV, RMC, ZDA).  
Success Case: Returns a 0 for success, 1 for failure, or -1 if the message time is older than the NMEAData time.