Remy Robotics test task

1. You have to implement in C ++ the class Robot with methods for solving direct and inverse kinematics.
2. It is necessary to write a C ++ program that reads information about the required trajectory of the robot manipulator from a file and sends control signals over the connection and recieves a feedback.

DH parameters table

Link No	**Twist (α)**	**Link length (a)**	**Link offset (d)**	**Joint angle (θ)**
0	0	0	-	-
1	π/2	10	0	θ_1
2	0	5	0	θ_2
3	0	5	0	θ_3

Joints limits table

Joint No	**Min limit**	**Max limit**
1	-π	π
2	-π/2	π/2
3	-π	π

Connection.h and input.h files are avaliable [here] (https://drive.google.com/open?id=1xAEofo-9OM8gq9_0fScbL9h00NLjnkhY).
Assumptions:
a) The points of the trajectory do not go beyond the limits of the working area, the format of the file with points is always correct.
b) The response time of the robot (ping) and the execution time inside the Connection class should be considered zero
c) the robot receives at the input the values of angles in the joints in radians. The frequency of sending commands to the robot should not exceed 50 Hz.
d) Encoders in joints have 12 bit per revolution accuracy. In the initial position, all encoders are set to zero, θ-angles are also set to zero.
e) The robot returns the current position in the form of three angles in radians relative to the initial position. A four-byte fractional value. Data could be read from vector with explicit pointer conversion.
f) Global coordinate system.
The Z axis is the axis of rotation of the first joint. The X axis is directed along the first shoulder and intersects with the axis of rotation of the second joint. The Y axis complements the right hand vectors tripse XYZ.
g) The Connection.h file with contains methods definitions. For the given robot the arguments should have dimension equals to 12. (data.size() == 12).
h) The input.in file represents an input trajectory. Each row contains x, y, z coordinates of a point delimited by space and execution time from the beginning (in seconds), when the robot end-effector should be at the given position.