## Example of main.cpp

```
#include <iostream>
#include <ros/ros.h>
#include <sensor_msgs/PointCloud.h>
#include <sensor_msgs/PointCloud2.h>
#include <sensor_msgs/point_cloud_conversion.h>

ros::Publisher newPointCloud;
bool runflag=false;
sensor_msgs::PointCloud2::ConstPtr pointcloud;

//
void handlePointCloud(sensor_msgs::PointCloud2::ConstPtr scan_out)
{
    pointcloud=scan_out;
    sensor_msgs::PointCloud  output;
    sensor_msgs::convertPointCloud2ToPointCloud(*pointcloud,output);
    std::cout<<"Points: "<<scan_out->height*scan_out->width<<std::endl;
    std::cout<<"Points: "<<output.points.size()<<std::endl;

    runflag=true;
}

void f1(sensor_msgs::PointCloud2::ConstPtr pc){
    //Part I 1)
}
void f2(){
    //Part I 2)
}
void f3(){
    sensor_msgs::PointCloud output;
    output.header=pointcloud->header; //set message header (using the same
from /velodyne_points)

    //Part I 3)
    newPointCloud.publish(output);
}

int main(int argc, char **argv){

    ros::init(argc, argv, "strdemo");
    ros::NodeHandle nh("~");

newPointCloud = nh.advertise<sensor_msgs::PointCloud>("/output_results", 100);
    ros::Subscriber PointCloudHandlervelodyne =
nh.subscribe<sensor_msgs::PointCloud2>("/velodyne_points", 100,
handlePointCloud);

    ros::Rate rate(100.0);
    while (nh.ok()){

        if(runflag){
            f1(pointcloud);
            f2();
            f3();
            runflag=false;
        }

        ros::spinOnce();
        rate.sleep();
    }

    return 1;
}
```