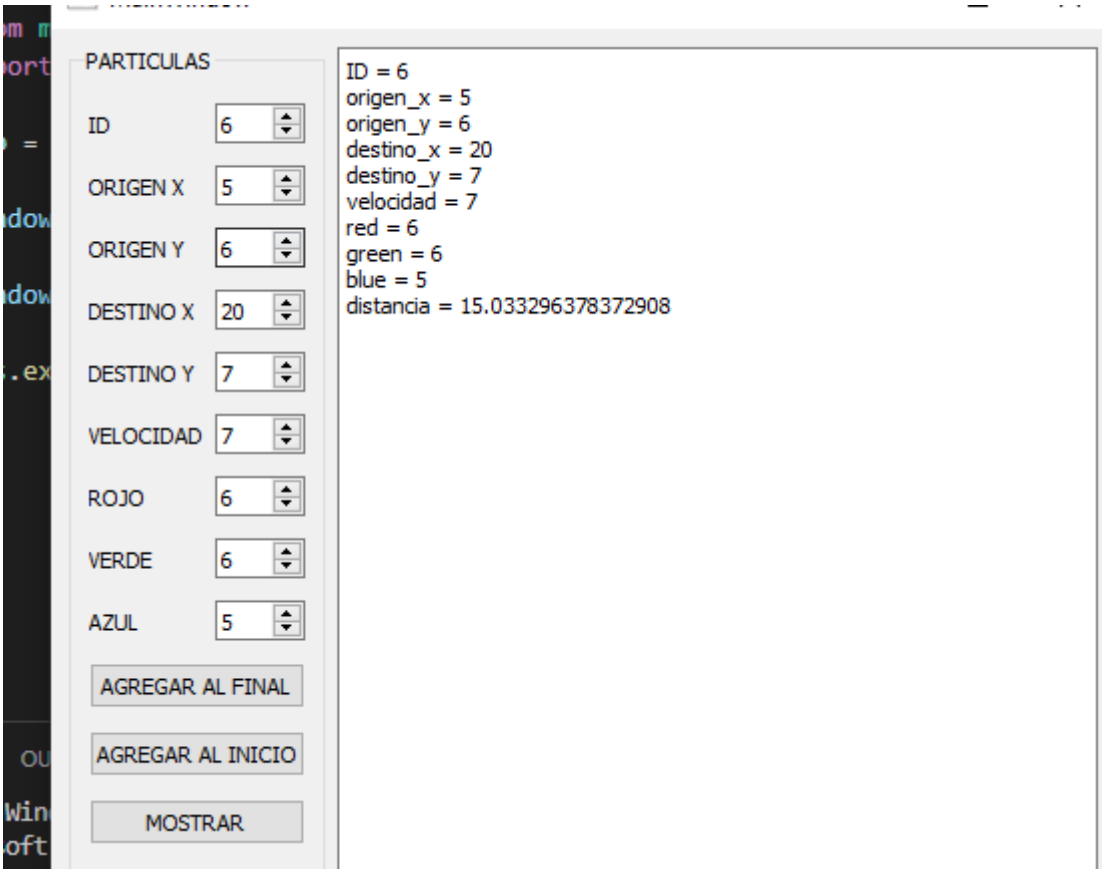
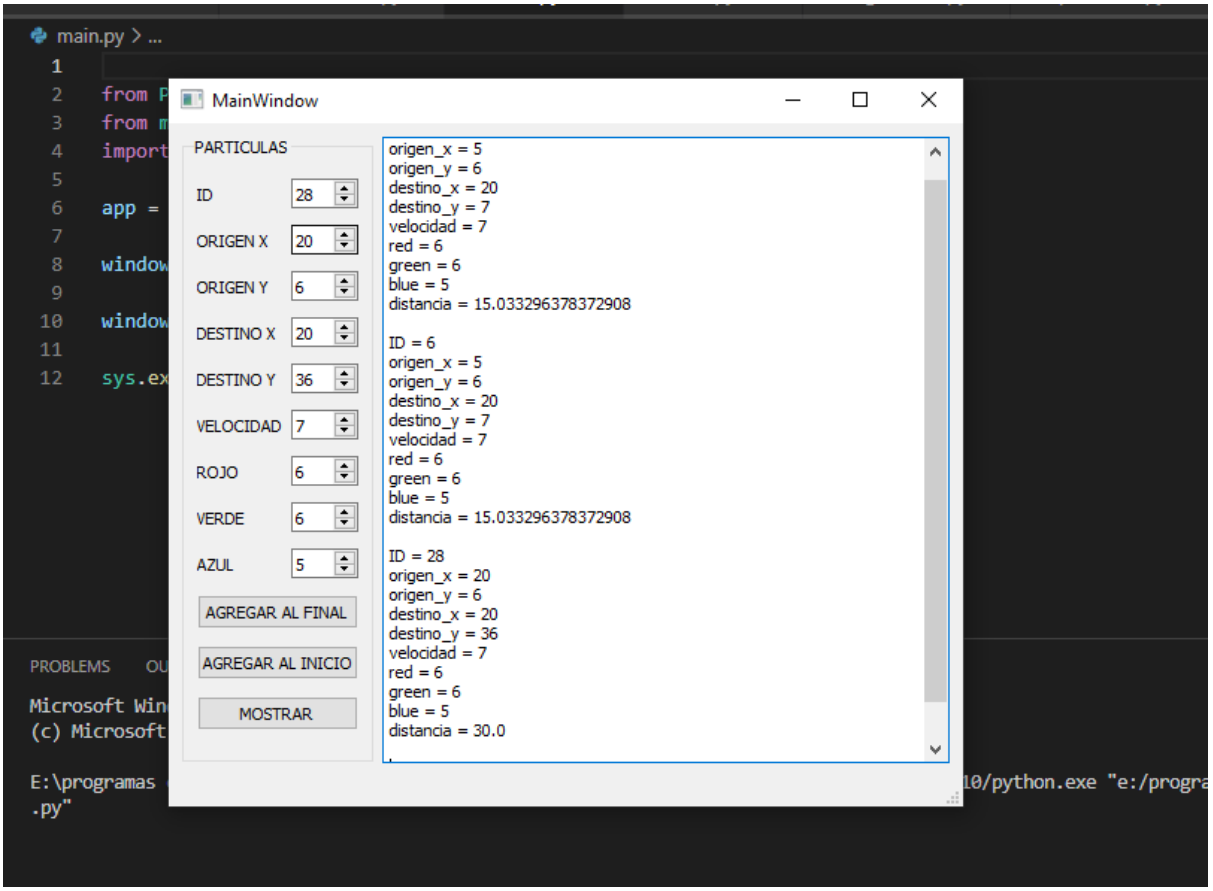
Actividad 06 (QPlainTextEdit)

Beracoechea Rosales Jose Francisco
Seminario de algoritmia

- [ ] El reporte está en formato Google Docs o PDF.
- [ ] El reporte sigue las pautas del Formato de Actividades .
- [ ] El reporte tiene desarrollada todas las pautas del Formato de Actividades.
- [ ] Se muestra la captura de pantalla de los datos antes de usar el botón para agregar_inicio() y la captura de pantalla del mostrar partículas en el QPlainTextEdit después de haber agregado la Particula.
- [ ] Se muestra la captura de pantalla de los datos antes de usar el botón para agregar_final() y la captura de pantalla del mostrar partículas en el QPlainTextEdit después de haber agregado la Particula.





Conclusiones:
en esta actividad aprendí a mostrar y juntas las clases creadas en una interfaz así también como el manejo de otras funciones dentro del software de diseño

https://youtu.be/5TPKrKIAAU0

código:

```
from PySide2.QtWidgets import QMainWindow
from PySide2.QtCore import Slot
from ui_mainwindow  import Ui_MainWindow
from particulas import Particula
from Lista import Lista


class MainWindow(QMainWindow):
    def __init__(self):
        super(MainWindow,self).__init__()
        self.lista = Lista()
        self.ui = Ui_MainWindow()
        self.ui.setupUi(self)
        self.ui.inicio_pushButton.clicked.connect(self.click_agregar)
        self.ui.FINAL_pushButton.clicked.connect(self.click_final)
        self.ui.mostrar_pushButton.clicked.connect(self.click_mostrar)
```

```
    @Slot()
    def click_mostrar(self):
        self.ui.salida.insertPlainText(str(self.lista))


    @Slot()
    def click_agregar(self):
        id = self.ui.ID_spinBox.value()
        origen_x = self.ui.ORIGEN_X_spinBox.value()
        origen_y = self.ui.ORIGEN_Y_spinBox.value()

        destino_x = self.ui.x_spinBox.value()
        destino_y = self.ui.y_spinBox.value()
        velocidad = self.ui.velocidad_spinBox.value()
        rojo = self.ui.rojo_spinBox.value()
        verde = self.ui.verde_spinBox.value()
        azul = self.ui.azul_spinBox.value()

        particula = Particula(id,origen_x,origen_y,destino_x,destino_y,velocidad,rojo,verde,azul)
        self.lista.agregar_inicio(particula)


    @Slot()
    def click_final(self):
        id = self.ui.ID_spinBox.value()
        origen_x = self.ui.ORIGEN_X_spinBox.value()
        origen_y = self.ui.ORIGEN_Y_spinBox.value()

        destino_x = self.ui.x_spinBox.value()
        destino_y = self.ui.y_spinBox.value()
        velocidad = self.ui.velocidad_spinBox.value()
        rojo = self.ui.rojo_spinBox.value()
        verde = self.ui.verde_spinBox.value()
        azul = self.ui.azul_spinBox.value()

        particula = Particula(id,origen_x,origen_y,destino_x,destino_y,velocidad,rojo,verde,azul)
        self.lista.agregar_final(particula)

from PySide2.QtWidgets import QApplication
from mainwindow import MainWindow
import sys

app = QApplication()

window = MainWindow()

window.show()
```

```
sys.exit(app.exec_())

from particulas import Particula

class Lista:

    def __init__ (self):
        self.__Lista = []

    def agregar_final(self, particulas:Particula ):
        self.__Lista.append(particulas)


    def agregar_inicio(self, particulas:Particula ):
        self.__Lista.insert(0, particulas)


    def mostrar(self):
        for particulas in self.__Lista:
            print(particulas)

    def __str__(self):
       return "".join(
         str(particulas) + '\n' for particulas in self.__Lista

       )

# algoritmos.py
import math
def distancia_euclidiana(x_1, y_1, x_2, y_2):

    aux1 =  x_2-x_1
    aux1 = aux1*aux1
    aux2 = y_2-y_1
    aux2 = aux2*aux2
    distancia = math.sqrt(aux1+aux2)

    return (distancia)

## particulas.py
from algoritmos import distancia_euclidiana

class Particula:


    def __init__(self,id=0, origen_x=0, origen_y=0,
                 destino_x=0,destino_y=0,velocidad=0,
                 red=0,green=0,blue=0,distancia=0):
```

```
        self.__id=id
        self.__origen_x = origen_x
        self.__origen_y = origen_y
        self.__destino_x = destino_x
        self.__destino_y = destino_y
        self.__velocidad = velocidad
        self.__red = red
        self.__green = green
        self.__blue = blue
        self.__distancia = distancia_euclidiana(origen_x, origen_y,destino_x, destino_y)

    def __str__(self):
        return(
            'ID = ' + str(self.__id) + '\n' +
            'origen_x = ' + str(self.__origen_x) + '\n' +
            'origen_y = ' + str(self.__origen_y) + '\n' +
            'destino_x = '+ str(self.__destino_x) + '\n' +
            'destino_y = '+ str(self.__destino_y) + '\n' +
            'velocidad = '+ str(self.__velocidad) + '\n' +
            'red = '+ str(self.__red) + '\n'+
            'green = '+ str(self.__green) + '\n' +
            'blue = '+ str(self.__blue) + '\n' +
            'distancia = '+ str(self.__distancia)+ '\n'
           )

# -*- coding: utf-8 -*-

################################################################################
#######
## Form generated from reading UI file 'mainwindow.ui'
##
## Created by: Qt User Interface Compiler version 5.15.2
##
## WARNING! All changes made in this file will be lost when recompiling UI file!
################################################################################
#######

from PySide2.QtCore import *
from PySide2.QtGui import *
from PySide2.QtWidgets import *


class Ui_MainWindow(object):
    def setupUi(self, MainWindow):
        if not MainWindow.objectName():
            MainWindow.setObjectName(u"MainWindow")
        MainWindow.resize(532, 458)
        self.centralwidget = QWidget(MainWindow)
        self.centralwidget.setObjectName(u"centralwidget")
```

```
self.gridLayout_2 = QGridLayout(self.centralwidget)
self.gridLayout_2.setObjectName(u"gridLayout_2")
self.groupBox = QGroupBox(self.centralwidget)
self.groupBox.setObjectName(u"groupBox")
self.gridLayout = QGridLayout(self.groupBox)
self.gridLayout.setObjectName(u"gridLayout")
self.velocidad_spinBox = QSpinBox(self.groupBox)
self.velocidad_spinBox.setObjectName(u"velocidad_spinBox")
self.velocidad_spinBox.setMaximum(1000)

self.gridLayout.addWidget(self.velocidad_spinBox, 5, 1, 1, 1)

self.label_2 = QLabel(self.groupBox)
self.label_2.setObjectName(u"label_2")

self.gridLayout.addWidget(self.label_2, 1, 0, 1, 1)

self.azul_spinBox = QSpinBox(self.groupBox)
self.azul_spinBox.setObjectName(u"azul_spinBox")

self.gridLayout.addWidget(self.azul_spinBox, 8, 1, 1, 1)

self.label = QLabel(self.groupBox)
self.label.setObjectName(u"label")

self.gridLayout.addWidget(self.label, 0, 0, 1, 1)

self.azul_label = QLabel(self.groupBox)
self.azul_label.setObjectName(u"azul_label")

self.gridLayout.addWidget(self.azul_label, 8, 0, 1, 1)

self.verde_spinBox = QSpinBox(self.groupBox)
self.verde_spinBox.setObjectName(u"verde_spinBox")

self.gridLayout.addWidget(self.verde_spinBox, 7, 1, 1, 1)

self.ID_spinBox = QSpinBox(self.groupBox)
self.ID_spinBox.setObjectName(u"ID_spinBox")

self.gridLayout.addWidget(self.ID_spinBox, 0, 1, 1, 1)

self.velocidad_label = QLabel(self.groupBox)
self.velocidad_label.setObjectName(u"velocidad_label")

self.gridLayout.addWidget(self.velocidad_label, 5, 0, 1, 1)

self.inicio_pushButton = QPushButton(self.groupBox)
self.inicio_pushButton.setObjectName(u"inicio_pushButton")
```

```
self.gridLayout.addWidget(self.inicio_pushButton, 10, 0, 1, 2)

self.y_label = QLabel(self.groupBox)
self.y_label.setObjectName(u"y_label")

self.gridLayout.addWidget(self.y_label, 4, 0, 1, 1)

self.rojo_label = QLabel(self.groupBox)
self.rojo_label.setObjectName(u"rojo_label")

self.gridLayout.addWidget(self.rojo_label, 6, 0, 1, 1)

self.FINAL_pushButton = QPushButton(self.groupBox)
self.FINAL_pushButton.setObjectName(u"FINAL_pushButton")

self.gridLayout.addWidget(self.FINAL_pushButton, 9, 0, 1, 2)

self.x_spinBox = QSpinBox(self.groupBox)
self.x_spinBox.setObjectName(u"x_spinBox")
self.x_spinBox.setMaximum(500)

self.gridLayout.addWidget(self.x_spinBox, 3, 1, 1, 1)

self.rojo_spinBox = QSpinBox(self.groupBox)
self.rojo_spinBox.setObjectName(u"rojo_spinBox")
self.rojo_spinBox.setMaximum(255)

self.gridLayout.addWidget(self.rojo_spinBox, 6, 1, 1, 1)

self.mostrar_pushButton = QPushButton(self.groupBox)
self.mostrar_pushButton.setObjectName(u"mostrar_pushButton")

self.gridLayout.addWidget(self.mostrar_pushButton, 11, 0, 1, 2)

self.y_spinBox = QSpinBox(self.groupBox)
self.y_spinBox.setObjectName(u"y_spinBox")
self.y_spinBox.setMaximum(500)

self.gridLayout.addWidget(self.y_spinBox, 4, 1, 1, 1)

self.ORIGEN_X_spinBox = QSpinBox(self.groupBox)
self.ORIGEN_X_spinBox.setObjectName(u"ORIGEN_X_spinBox")

self.gridLayout.addWidget(self.ORIGEN_X_spinBox, 1, 1, 1, 1)

self.x_label = QLabel(self.groupBox)
self.x_label.setObjectName(u"x_label")
```

```
        self.gridLayout.addWidget(self.x_label, 3, 0, 1, 1)

        self.verde_label = QLabel(self.groupBox)
        self.verde_label.setObjectName(u"verde_label")

        self.gridLayout.addWidget(self.verde_label, 7, 0, 1, 1)

        self.label_3 = QLabel(self.groupBox)
        self.label_3.setObjectName(u"label_3")

        self.gridLayout.addWidget(self.label_3, 2, 0, 1, 1)

        self.ORIGEN_Y_spinBox = QSpinBox(self.groupBox)
        self.ORIGEN_Y_spinBox.setObjectName(u"ORIGEN_Y_spinBox")

        self.gridLayout.addWidget(self.ORIGEN_Y_spinBox, 2, 1, 1, 1)


        self.gridLayout_2.addWidget(self.groupBox, 0, 0, 1, 1)

        self.salida = QPlainTextEdit(self.centralwidget)
        self.salida.setObjectName(u"salida")

        self.gridLayout_2.addWidget(self.salida, 0, 1, 1, 1)

        MainWindow.setCentralWidget(self.centralwidget)
        self.menubar = QMenuBar(MainWindow)
        self.menubar.setObjectName(u"menubar")
        self.menubar.setGeometry(QRect(0, 0, 532, 21))
        MainWindow.setMenuBar(self.menubar)
        self.statusbar = QStatusBar(MainWindow)
        self.statusbar.setObjectName(u"statusbar")
        MainWindow.setStatusBar(self.statusbar)

        self.retranslateUi(MainWindow)

        QMetaObject.connectSlotsByName(MainWindow)
    # setupUi

    def retranslateUi(self, MainWindow):
        MainWindow.setWindowTitle(QCoreApplication.translate("MainWindow",
u"MainWindow", None))
        self.groupBox.setTitle(QCoreApplication.translate("MainWindow", u"PARTICULAS",
None))
        self.label_2.setText(QCoreApplication.translate("MainWindow", u"ORIGEN X", None))
        self.label.setText(QCoreApplication.translate("MainWindow", u"ID", None))
        self.azul_label.setText(QCoreApplication.translate("MainWindow", u"AZUL", None))
        self.velocidad_label.setText(QCoreApplication.translate("MainWindow",
u"VELOCIDAD", None))
```

```
        self.inicio_pushButton.setText(QCoreApplication.translate("MainWindow", u"AGREGAR
AL INICIO", None))
        self.y_label.setText(QCoreApplication.translate("MainWindow", u"DESTINO Y", None))
        self.rojo_label.setText(QCoreApplication.translate("MainWindow", u"ROJO", None))
        self.FINAL_pushButton.setText(QCoreApplication.translate("MainWindow",
u"AGREGAR AL FINAL", None))
        self.mostrar_pushButton.setText(QCoreApplication.translate("MainWindow",
u"MOSTRAR", None))
        self.x_label.setText(QCoreApplication.translate("MainWindow", u"DESTINO X", None))
        self.verde_label.setText(QCoreApplication.translate("MainWindow", u"VERDE", None))
        self.label_3.setText(QCoreApplication.translate("MainWindow", u"ORIGEN Y", None))
    # retranslateUi
```