IZRAČUN DOLŽINE LOKSODROME

SPLETNA STRAN

NINA ČRNIGOJ, GIG III

Ljubljana, januar 2020

PROGRAM

- Uvoz knjižnic

```
1  import math
2  import xml.etree.ElementTree as ET
3  import time
4  import subprocess
5
```

- Vhodni podatki

```
##########################################################################
#TOČKA A

#Zapis geografske širine (s)

zapis_s_A = input("Podaj geografsko širino točke A (s m sek):")
razdeli_s_A = zapis_s_A.split()  #razdeli glede presledkov

s_s_A = float(razdeli_s_A[0])
m_s_A = float(razdeli_s_A[1])
sek_s_A = float(razdeli_s_A[2])

# Zapis geografske dolžine (d)

zapis_d_A = input("Podaj geografsko dolžino točke A (s m sek):")
razdeli_d_A = zapis_d_A.split()  #razdeli glede presledkov

s_d_A = float(razdeli_d_A[0])
m_d_A = float(razdeli_d_A[1])
sek_d_A = float(razdeli_d_A[2])

# Izpis Fi in Lambda točke A
Fi_A = math.radians(s_s_A + m_s_A/60 + sek_s_A/3600)
Lambda_A = math.radians(s_d_A + m_d_A/60 + sek_d_A/3600)

# koordinate točk
x1 = (s_s_A + m_s_A/60 + sek_s_A/3600)
x2 = (s_d_A + m_d_A/60 + sek_d_A/3600)
```

- Izračun dolžine loksodrome

```
##########################################################################

Delta_Lambda = abs(Lambda_A-Lambda_B)
Delta_Lambda_x = (Lambda_A+Lambda_B)/2

# Azimut loksodrome
stevec = math.tan(math.radians(45)+(Fi_B/2))
imenovalec = math.tan(math.radians(45)+Fi_A/2);
Leva_stran = float(1/Delta_Lambda * math.log(stevec/imenovalec));
Azimut = math.atan(1/Leva_stran);
Azimut_2_kvadrant = Azimut + math.pi;
D_loks_km = abs((R)*(Fi_B-Fi_A)/math.cos(Azimut_2_kvadrant))

print('Dolžina loksodrome: ', D_loks_km,' m')
```

PROGRAM

- Izris v Google Earth

```xml
<?xml version="1.0" encoding="UTF-8"?>
<kml xmlns="http://www.opengis.net/kml/2.2" xmlns:gx="http://www.google.com/kml/ext/2.2" xmlns:kml="http://www.opengis.net/kml/2.2" xmlns:atom="http://www.w3.org/2005/Atom">
<Document>
    <name>Prikaz XML</name>
    <Style id="FilledPolygon">
        <LineStyle>
            <color>ff00ffff</color>
        </LineStyle>
        <PolyStyle>
            <color>ff00ffff</color>
        </PolyStyle>
    </Style>
    <Placemark>
        <name>A filled KML Polygon uses rhumb lines</name>
        <open>1</open>
        <styleUrl>#FilledPolygon</styleUrl>
        <Polygon>
            <tessellate>1</tessellate>
            <outerBoundaryIs>
                <LinearRing>
                    <coordinates>
                        -129.0133032296588,66.40852471670162,0 155.1760142482501,87.30334954255064,0 156.1760142482501,87.30334954255064,0 -130.0133032296588,66.40852471670162,0
                    </coordinates>
                </LinearRing>
            </outerBoundaryIs>
        </Polygon>
    </Placemark>
</Document>
</kml>
```

```
###############################################################################

tree = ET.parse('LoksXML.kml')
root = tree.getroot()



root[0][2][3][1][0][0].text = podatek

tree.write("output.kml")

###############################################################################
time.sleep (5)
subprocess.call(["Pot kjer je program shranjen", "Pot, ker program pridobi podatke"])
```

```
sx1 = str(x1) +","
sy1 = str(y1) +","
sz1 = str(z1) +" "

sx2 = str(x2) +","
sy2 = str(y2) +","
sz2 = str(z2) +" "



if y2 >0:
    sy2p = y2+0.2
else:
    sy2p = y2-0.2

if y1 >0:
    sy1p = y1+0.2
else:
    sy1p = y1-0.2

if x2 >0:
    sx2p = x2+0.2
else:
    sx2p = x2-0.2

if x1 >0:
    sx1p = x1+0.2
else:
    sx1p = x1-0.2


sy2pp = str(sy2p) +","
sy1pp = str(sy1p) +","
sx2pp = str(sx2p) +","
sx1pp = str(sx1p) +","


podatek = sx2 + sx1 + sz2 + sy2 + sy1 + sz1 + sy2pp + sy1pp +sz2 + sx2pp + sx1pp + sz1
```

PROGRAM

- Izris v Google Earth

SPLETNA STRAN

- Dostop: https://ninacrnigoj.wixsite.com/home