



CHRIST
(DEEMED TO BE UNIVERSITY)
DELHI - NCR, INDIA

Advance Python Programming

MCA-372

Assignment – 05

BY

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SUBMITTED TO

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SCHOOL OF SCIENCES

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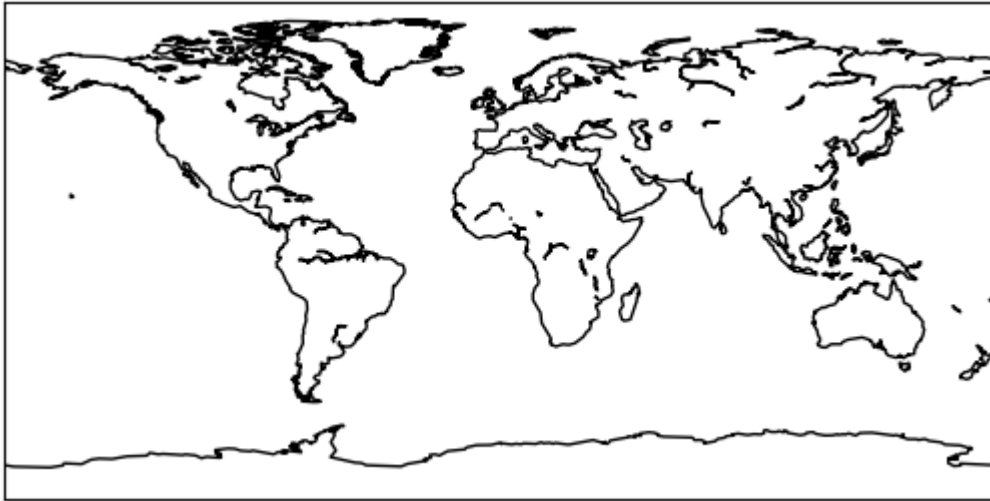
Basemap :

Importing Libraries

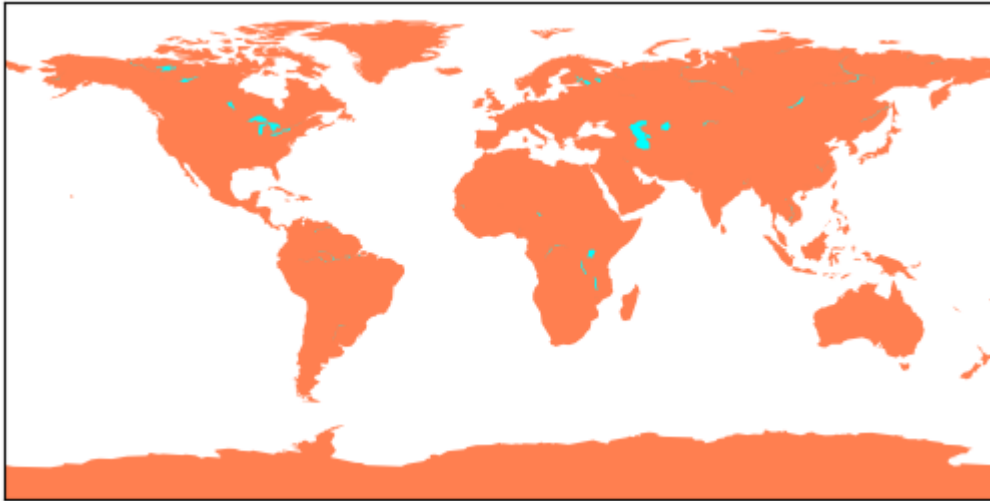
```
from mpl_toolkits.basemap import Basemap  
import matplotlib.pyplot as plt
```

Code for Map

```
map = Basemap()  
map.drawcoastlines()
```



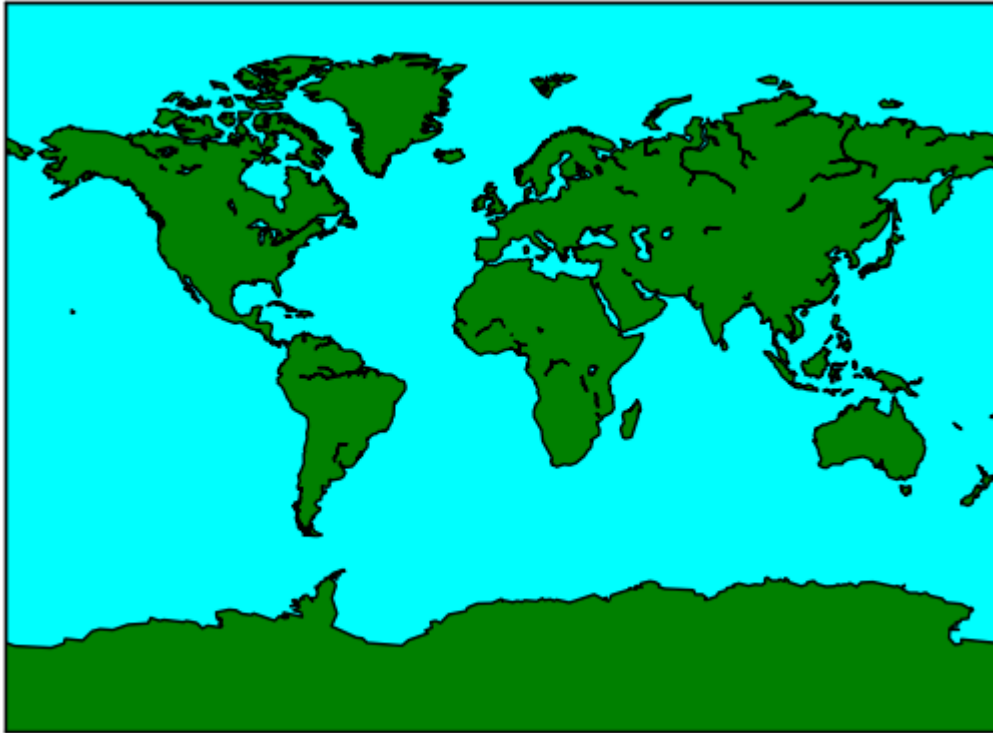
```
map.fillcontinents(color='coral',lake_color='aqua')
```



```
map.drawmapboundary(fill_color='aqua')
```

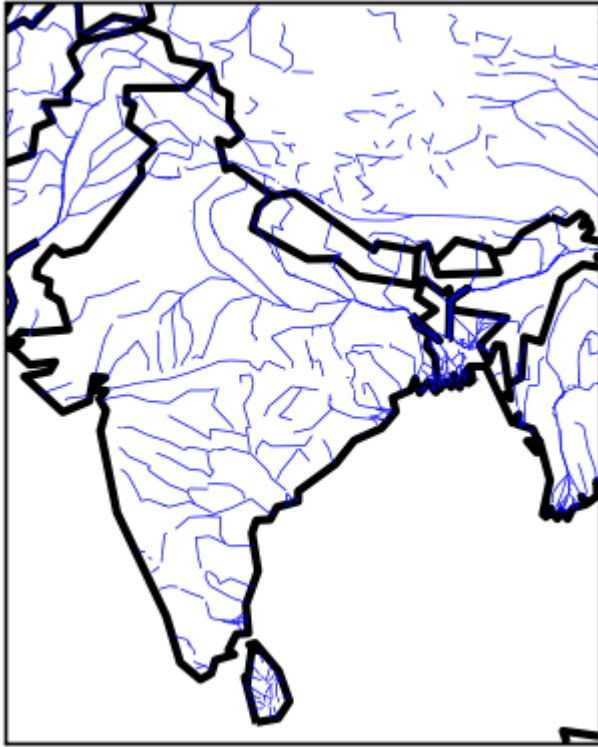


```
map = Basemap(resolution='c',projection='mill')
map.drawcoastlines()
map.fillcontinents(color='g',lake_color='aqua')
map.drawmapboundary(color='black', fill_color='aqua')
```



To Represent Indian River

```
india = Basemap(68,5,97,38,projection="merc")
# india.set_size(1000,1000)
india.drawcountries(linewidth=3)
india.drawcoastlines(linewidth=3)
india.drawrivers(color='b')
india.drawmapboundary(color='black')
plt.show()
```



Creating Map as an Satellite View

```
india=Basemap(llcrnrlon=68,llcrnrlat=5,urcnrlon=97,urcnrlat=38,projection='m  
ill')  
# india = Basemap(68,5,97,38,projection="merc")  
india.bluemarble()
```



Creating map of india which shows small components

```
plt.figure(figsize=(8, 6))
m = Basemap(projection="merc", llcrnrlat=5, urcrnrlat=40, llcrnrlon=65,
urcrnrlon=100, resolution='i')

m.drawcoastlines()
m.drawcountries()
m.drawstates(linewidth=1, color="black")
m.drawmapboundary(fill_color="aqua")
m.fillcontinents(color="beige", lake_color="aqua")

plt.title("Map of India")
plt.show()
```

Map of India



Creating the mazor cities in India on the Map of India

```
plt.figure(figsize=(8, 6))
m = Basemap(projection="merc", llcrnrlat=5, urcrnrlat=40, llcrnrlon=65,
urcrnrlon=100, resolution='i')

m.drawcoastlines()
m.drawcountries()
```

```

m.drawstates(linewidth=1, color="black")
m.drawmapboundary(fill_color="aqua")
m.fillcontinents(color="beige", lake_color="aqua")

plt.title("Map of India")
cities = {
    "Delhi": (28.6139, 77.2090),
    "Mumbai": (19.0760, 72.8777),
    "Kolkata": (22.5726, 88.3639),
    "Chennai": (13.0827, 80.2707),
    "Bangalore": (12.9716, 77.5946)
}

# Plot cities on the map
for city, (lat,lon) in cities.items():
    x , y = m(lon, lat)
    m.scatter(x,y,marker='o', color='Red', s=100, label=city)
    plt.text(x,y,city,fontsize=10, ha='left',color='black')

plt.title("Major Cities in India")
plt.show()

```

Major Cities in India

