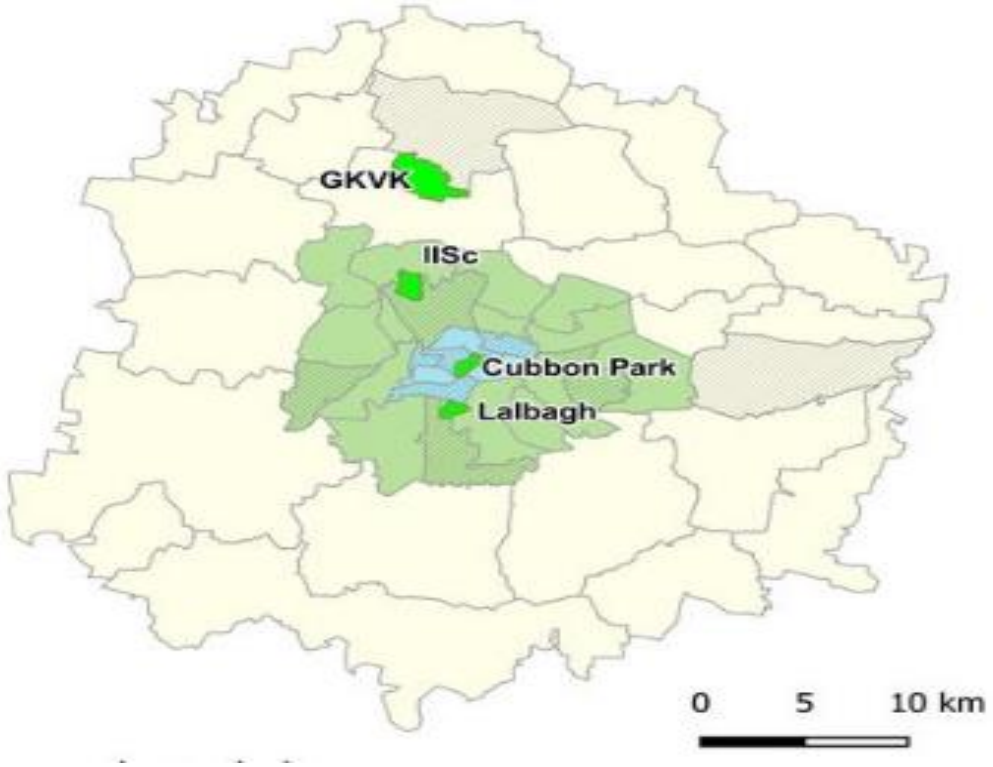
Polygon Generator

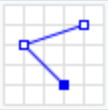
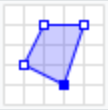
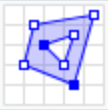
Polygons of varying complexity are used to represent spatial objects like water bodies, forest land, cropland etc. As the shapes of these kinds of objects are irregular, the polygons that represent them can have large number of vertices. Below map of Bengaluru shows the boundaries for Parks, water bodies, districts in Bengaluru.



The Polygon can be represented as a Well Known Text (WKT) Object.

(Refer:https://en.wikipedia.org/wiki/Well-known_text_representation_of_geometry)

Geometry primitives (2D)

Type	Examples	
Point		`POINT (30 10)`
LineString		`LINESTRING (30 10, 10 30, 40 40)`
Polygon		`POLYGON ((30 10, 40 40, 20 40, 10 20, 30 10))`
		`POLYGON ((35 10, 45 45, 15 40, 10 20, 35 10), (20 30, 35 35, 30 20, 20 30))`

As can be seen in the above table, a simple polygon is represented as a closed shape.

Example: from point x1 y1 start listing the vertices in clockwise manner, and the last vertex should be same as the last vertex.

POLYGON ((x_1 y_1, x_2 y_2, x_3 y_3,...x_n y_n, x_1 y_1)).

Aim of this exercise is to generate random polygons having vertices from 10 upto 500, and save these shapes as WKT in a text file. Each WKT shape will be delimited by a new line (\n) character. Plot the polygons using any visualization software tool, onto a single canvas.

Bonus points:

1. Observe the file sizes and time taken to generate a large number of polygons.

2. What kind of data distribution can be observed for objects like water bodies, forests, constructed land/buildings, grassland, cultivated land/agriculture. Can any of these variations be integrated into your solution?