# Assignment 2.2: Entity datatype and applicable GIS operations
**Version 2**

Name: Lena Walcher

Student ID: 2818833

| | Intersection | Raster layer zonal statistics | Zonal statistics | Interpolation |
|---|---|---|---|---|
| Event | | | | X |
| Track | X | | | X |
| Contour | X | | X | |
| Patch | X | | | |
| Coverage | | | | |
| Field Raster | X | X | X | |
| Point Measures | | | | X |
| Line Measures | X | | | |
| Object | X | | | |
| Lattice | | X | X | |
| Amount | X | | | X |
| Network | X | | | |

**Intersection**

An intersection cannot be applied for geometry points or point measures which is why it cannot be applied for an event as it includes points. A track includes points as well as lines. As lines can be intersected however, I believe that Intersection can be applied. Intersect can be applied on Contours as well as Patch as they are polygon geometries. Intersect cannot be applied to Coverage because each polygon can only have one definition, so intersection should not be possible. When assuming Coverage cannot be intersected one should mutually assume that Field Raster cannot be intersected for the same reason. Line Measures as well as Objects can be intersected. Intersection cannot be applied on Lattice as they are exclusive like Coverage. Amounts can be intersected because they are not exclusive and can be polygons or lines which both can be intersected. As Networks are of line geometry they can be intersected as well.

**Raster Layer Zonal Statistics**

As the name already points out this operation can be used for Field raster as it uses the pixels of a raster layer with the help of a polygonal vector layer. As raster is a special type of tessellation I am wandering whether Lattice might be possible as well, however I am assuming that because it can be seen more like an attribute or summary of spatial information this might not be the case.

**Zonal Statistics**

Especially because of the time aspect of an Event I do not think that one can use zonal statistics on Events, points in general cannot be overlayed. I also assume that this operation cannot be used on tracks as they are not a raster or a polygon geometry. When assuming that only these two types can be applied meaningfully, the solution should be that only Lattice, Field Raster and Contour can be used.

**Interpolation**

The operation "Interpolation" can  be used on point measures. I would therefore assume that it can meaningfully be used on Events, Tracks, Point Measures and Amounts.