Appendix II: Practicum Assignments

Zotero: Bibliography Manager

1. Download and install ZOTERO STANDALONE from www.zotero.org.

2. Install an extension for your browser, by choosing one of the following options : [Chrome] [Safari] [Firefox] .

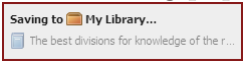3. Add a book reference from Amazon and/or the Tufts Library Catalog

   - find al-Muqaddasī's "Best Divisions;" open the page of the book and click on 📘, a blue book icon in the right corner of the address pane of your browser; the reference will be added and you will see the following pop-up in the right lower corner of your screen:

     Saving to 📙 My Library...
     📘 The best divisions for knowledge of the r...

   - download a PDF from Trunk and attach it to the record. (Drag-n-drop the PDF file on the reference in Zotero.)

4. Use 📷 to add a book reference using ISBN[1]. Try one of the following numbers:

   - 9781405191463, 9780226808772, 9781848854512, 9780199913879

5. Use 📷 also to add an article reference using DOI.[2] Try the following number:

   - 10.3200/HMTS.41.1.39-64

6. Add an article from JSTOR (go to JSTOR through the Tufts Library Catalog):

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[1] **ISBN**: International Serial Book Number.
[2] **DOI**: Digital Object Identifier.

- find some article on GIS or Arab geography.

- import it into Zotero using the same button that you used for importing book reference before, although the button now looks like a sheet of paper ▤ .

- see what happens...

Google Earth: A Simple Mapping Solution

1. Download and install GOOGLE EARTH from www.google.com/earth/ .

2. Open GOOGLE EARTH and try to create major objects, using the panel with icons.

   - Placemark adds a single point (village, town, city, etc.);
   - Polygon adds an area (lake, country, province, etc.);
   - Path creates a line (river, road, borderline, etc.);
   - Image Overlay allows one to "fit" any image on top of the Earth surface (e.g., you want to try how an image of a historical map fits onto the modern 3D globe);

3. Icons or KML? Using the icons to add geographical information is convenient for some tasks, but may be quite cumbersome for some other. In the latter cases working directly with the KML-format[3] may be a better option. KML allows you to get a better control over some parameters: for example, you can type in the exact coordinates, instead of trying to

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[3]KML is a version of XML, a flexible format where specific bits of information are wrapped in corresponding tags. Most KML/XML files can be opened and edited in any text editor.

find them with your mouse. Each KML-record looks like the code that you see below.[4]

```
<Placemark>
  <name>Plains of Sinjar</name>
  <Point>
    <coordinates>42.5,35.5,0</coordinates>
  </Point>
</Placemark>
```

Note that there are opening (for example, <Placemark>) and closing (for example, </Placemark>) tags for each piece of information. This is how Google Earth knows how to parse this text and convert text information into proper instructions for mapping. Placemark, polygon and path differ only in the way of how their coordinates are provided: they have different number of coordinate points and different wrapping tags that tell Google Earth what kind of geometry is represented.

- Placemark has only one set of coordinates, which are wrapped into the <Point> tags;
- Path may also have any number of coordinates as necessary to reflect the desired shape of a path; they are wrapped into the <LineString> tags;
- Polygon may have any number of coordinates necessary to reflect the desired shape of an area; since polygons has a more complex geometry than placemarks and paths, they are wrapped into a series of tags, such as <outerBoundaryIs>, <LinearRing>, etc.

4. **Important note on coordinates.** Keep in mind that coordinates in the KML-format have three values (longitude, latitude, altitude) and they are given in *decimal* values, **not** degrees, minutes and seconds; **N**orth and **E**ast are positive, while **S**outh and **W**est are negative. This means that you may need to convert degrees, minutes and seconds into decimal values, which can be done quickly with online converters (for example, @ fcc.gov, or www.satsig.net).

5. Experiment with the sample KML-files.

- Download sample KML-files from Trunk:[5] Sample Placemark.kml,

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[4]Keep in mind that this is not a complete KML/XML format, but it is sufficient for drag-n-dropping into the Google Earth environment. This is a simplified version that should help you to understand the basic principles of how XML works.

[5]Resources > Practicum Files > Google Earth

`Sample Path.kml`, `Sample Polygon.kml`.

- Drag-n-drop each one of them into Google Earth. Since these are simplified KML records, there is no information on formatting (for example, neither icons nor colors are specified). These parameters can be modified in Google Earth by changing the `properties` of individual records or a group of records simultaneously.

- Open each of these sample files in a text editor and try to change parameters (only within the `<Name>` and `<coordinates>` tags). Save your changes as separate files. Drag-n-drop into Google Earth and see what changed.

- You can save all your changes as KML files[6] as well and load them back into Google Earth at any other time; you can also backup your files and share them with your classmates.

- what is the best way to map them?
- KML-format
- (convert degrees, minutes, seconds into decimal values)

6. Map 7 climates of the Greeks and the Arabs:

- what is the best way to map them?
- KML-format
- (convert degrees, minutes, seconds into decimal values)

7. the Maʾmūnian Expedition:

- somewhere on the Sinjār plains
- 1ˢᵗ group: travel 1 degree north
- 2ⁿᵈ group: travel 1 degree south

8. Map the cities from the chart below; for comparison, use Ptolemy's coordinates, and choose one of the Arab geographers (Yāqūt, al-Khwārazmī,

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[6]Google Earth may offer you to save the file as KMZ, which is a zipped version of KML. This format cannot be changed in a text editor. If you open a saved KML, you will see that there is much more data in there, since this Google Earth saves *complete* KML files, not just single records with which you started.

or al-Battānī)

	Yāqūt			Ptolemy		al-Khwārazmī		al-Battānī	
	Long.	Lat.	Climate	Long.	Lat.	Long.	Lat.	Long.	Lat.
Adana (Ἄδανα)	68° 15'	–	–	68° 15'	36° 50'	–	–	68° 15'	36° 50'
Greater Armenia (Khilāt)	78°	38° 20'	V	–	–	64° 50'	39° 50'	78°	39° 20' [Khilāt]
								77°	41° [Gr. Armenia]
Lesser Armenia (Tiflis/Tbilisi)	75° 50'	45°	–	–	–	–	–	–	–
Antioch (Ἀντιόχεια)	69°	35° 30'	IV	69°	35° 30'	61° 35'	34° 10'	69°	35° 30'
Ankara (Ἄγκυρα)	58°	49° 40'	–	62°	42°	58°	43°	–	–
Ahwaz (Σοῦσα)	84°	35° 04'	–	84°	35° 15'	75°	32°	83°	34°
Bukhara	87°	41°	V	–	–	87° 20'	37° 50'	[88°	34°?]
Barda	79° 30'	45°	VI	–	–	73°	43°	84°	42°
Cyrenaica (Barqa) (Βάρκη)	63°	33° 10'	III	49° 15'	30° 45'	43°	33° 45'	–	–
Baalbek (Ἡλιούπολις)	68° 20'	–	IV	68° 40'	33° 40'	–	–	68° 20'	33° 15'
Baghdad	75°	34°	IV	–	–	70°	33° 09'	80°	33° 09'
Balkh (Βάκτρα)	115°	37°	V	116°	41°	88° 35'	38° 40'	116°	41°
Beirut (Βηρυτός)	68° 45'	33° 20'	–	67° 30'	33° 40'	59° 30'	34°	69° 30'	33° 20'
Palmyra (Tadmur) (Πάλμυρα)	71° 30'	–	IV	71° 30'	34°	66°	35°	72°	34°
Tikrit (Βίρθα)	98° 40'	37° 30'	–	78° 45'	36° 20'	–	–	–	–
Gurgan (Ὑρκανία)	86° 30'	40°	V	98° 50'	40°	80° 45'	38° 50'	95°	40°
Haran (Κάρραι)	72° 30'	27° 30'	IV	73° 15'	36° 10'	65°	36° 40'	73°	36° 40'
Aleppo (Halab) (Βέροια)	69° 30'	35° 25'	IV	71° 20'	35°	63°	34° 30'	71°	34° 50'
Hulwan	71° 45'	34°	IV	–	–	71° 45'	34°	81°	35°
Homs (Ἔμισσα)	69°	34° 45'	IV	69° 40'	34°	61°	34°	69° 05'	–
Khiva (Khwārazm) (Ὠξείανα)	117° 30'	45°	VI	117° 30'	44° 20'	91° 50'	42° 10'	–	–
Raqqa (Νικηφόριον)	73° 06'	35° 20'	IV	73° 05'	35° 20'	66°	36°	73° 15'	36°
Rome (Rūmīya) (Ῥώμη)	35° 20'	41° 50'	V	36° 40'	41° 40'	35° 20'	41° 50'	36° 40'	41° 40'
Edessa (Ruha) (Ἔδεσσα)	72° 30'	37° 30'	IV	72° 30'	37° 30'	64°	36° 40'	72° 50'	37°
Rayy (Ῥάγαια)	85°	37° 36'	IV	98° 20'	34° 20'	75°	35° 45'	86°	36° 30'
Zaura	105°	39°	V	–	–	–	–	–	–
Syracuse (Συρακοῦσαι)	39° 18'	39°	V	39° 30'	37°	–	–	–	–
Salamiya	68° 20'	37° 05'	IV	–	–	62° 45'	33° 30'	69° 50'	34° 50'

FIG. 4.5. A COMPARISON OF SOME OF THE COORDINATES OF AL-KHWĀRAZMĪ, AL-BĀTTANĪ, AND THE *KITĀB AL-MALHAMAH* (YĀQŪT) WITH THOSE OF PTOLEMY. The first column lists the coordinates from the *Kitāb al-malhamah*, as given in the printed edition of Yāqut's *Muʿjam al-buldān*, and the climate where given. This is followed by the coordinates given by the other authors.
After Ernst Honigmann, *Die sieben Klimata und die πόλεις ἐπίσημοι* (Heidelberg: Winter, 1929), 126–27.

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