

Importing DEM (Digital Elevation Data) from U.S.G.S to ArcGIS 9.x

DEM (Digital Elevation Data) from the USGS (U.S. Geological Survey) are maps with grids of values representing elevation changes in an area. There are several sets of data of different coverage, starting from 7.5 minute, to 30 minute, and 1 degree data, except Alaska, which only has 7.5 minute and 15 minute data. The resolution of the data increases with decrease in coverage size.

Requirements:

- ArcGIS 9.x
- A connection to the McGill network

Procedure:

There are two methods to obtain DEM data:

1. Using DATASETS:

If you know the name of the quadrangle or area, you can obtain the files individually through several websites for free:

USGS GEOSpatial clearinghouse: <http://www.usgs.gov>

Goto Maps, Products & Publications→Digital Data Sets→USGS Geospatial Data Clearinghouse: DEM Information and Download

- 1/250 000K (1 degree coverage)
- The files are downloaded as a ZIP file. To extract the data, use WinZip or WinRAR
- There are no extensions that follows the unzipped file, to make it accessible in ArcGIS, change the file name to *filename.asc*

GeoCommunity: <http://data.geocomm.com> *

- 1/24 000K (7.5 minute coverage)

MapMart: <http://www.mapmart.com> *

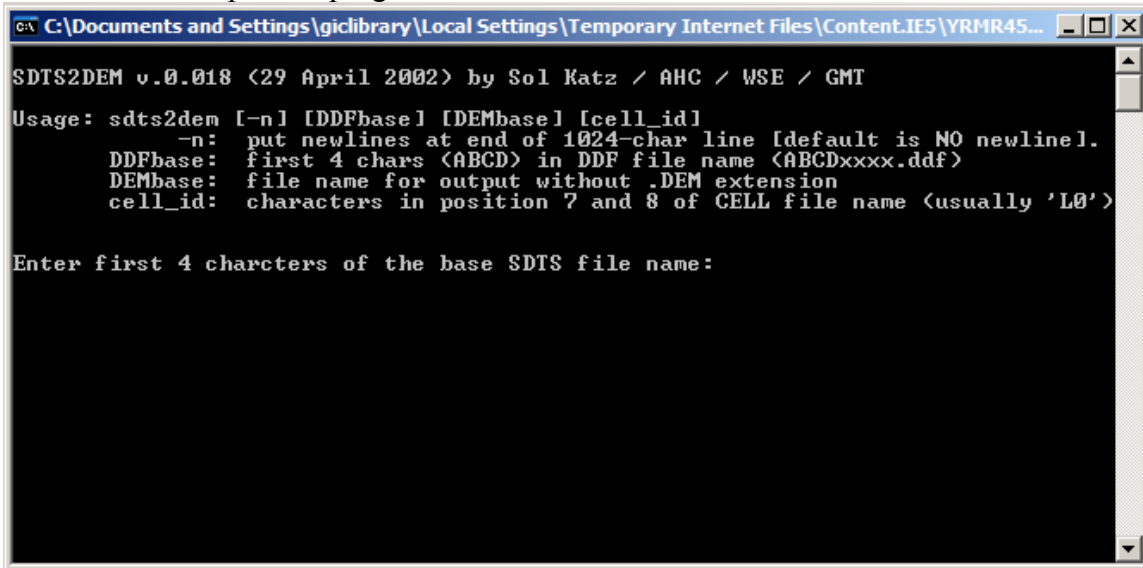
- 1/24 000K (7.5 minute coverage)

ATDI: <http://www.atdi-us.com>

- 1/24 000K (7.5 minute coverage)

* The files are provided in .dem.sdts.tar.gz, a compressed format. To decompress them, extract the files using WinZIP or WinRAR. Unzipped DEM data is separated in several files with the extension .ddf. To convert them into one .dem file, download the program SDTS2DEM.exe to perform the transformation

The program SDTS2DEM.exe is available at GeoCommunity (<http://data.geocomm.com>). Download it into the same folder as all your .ddf files
Click the file to open the program

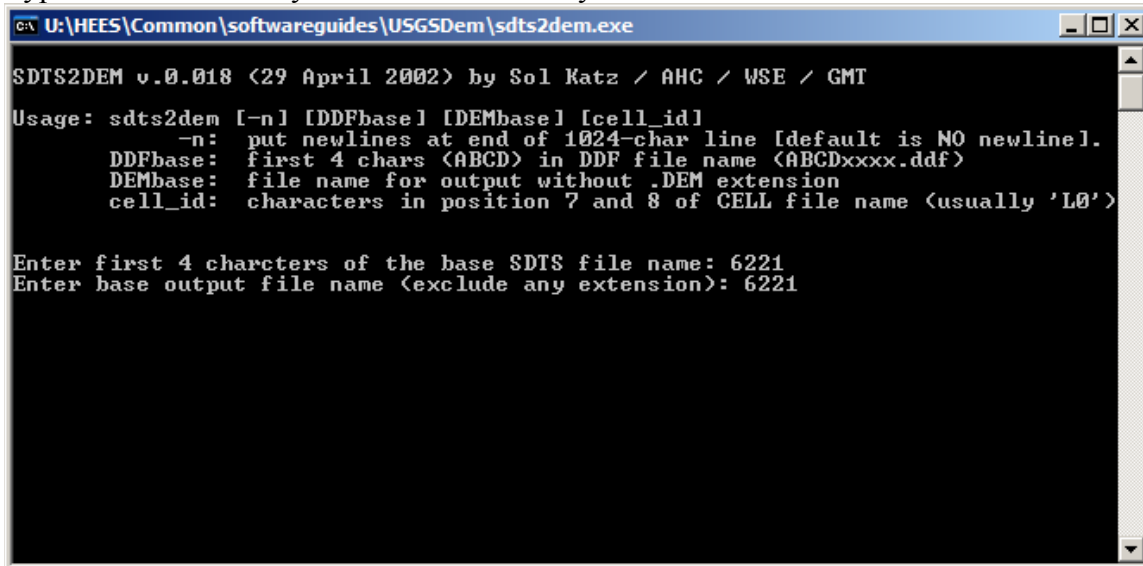


```
SDTS2DEM v.0.018 <29 April 2002> by Sol Katz / AHC / WSE / GMT
Usage: sdts2dem [-n] [DDFbase] [DEMbase] [cell_id]
      -n:  put newlines at end of 1024-char line [default is NO newline].
      DDFbase:  first 4 chars <ABCD> in DDF file name <ABCD>xxxx.ddf)
      DEMbase:  file name for output without .DEM extension
      cell_id:  characters in position 7 and 8 of CELL file name <usually 'L0'>

Enter first 4 charcters of the base SDTS file name:
```

Type in the first 4 characters that your filenames begin with (they should all begin with the same first 4 numbers), press ENTER

Type in the name that you would like to call your dem file without the extension .dem

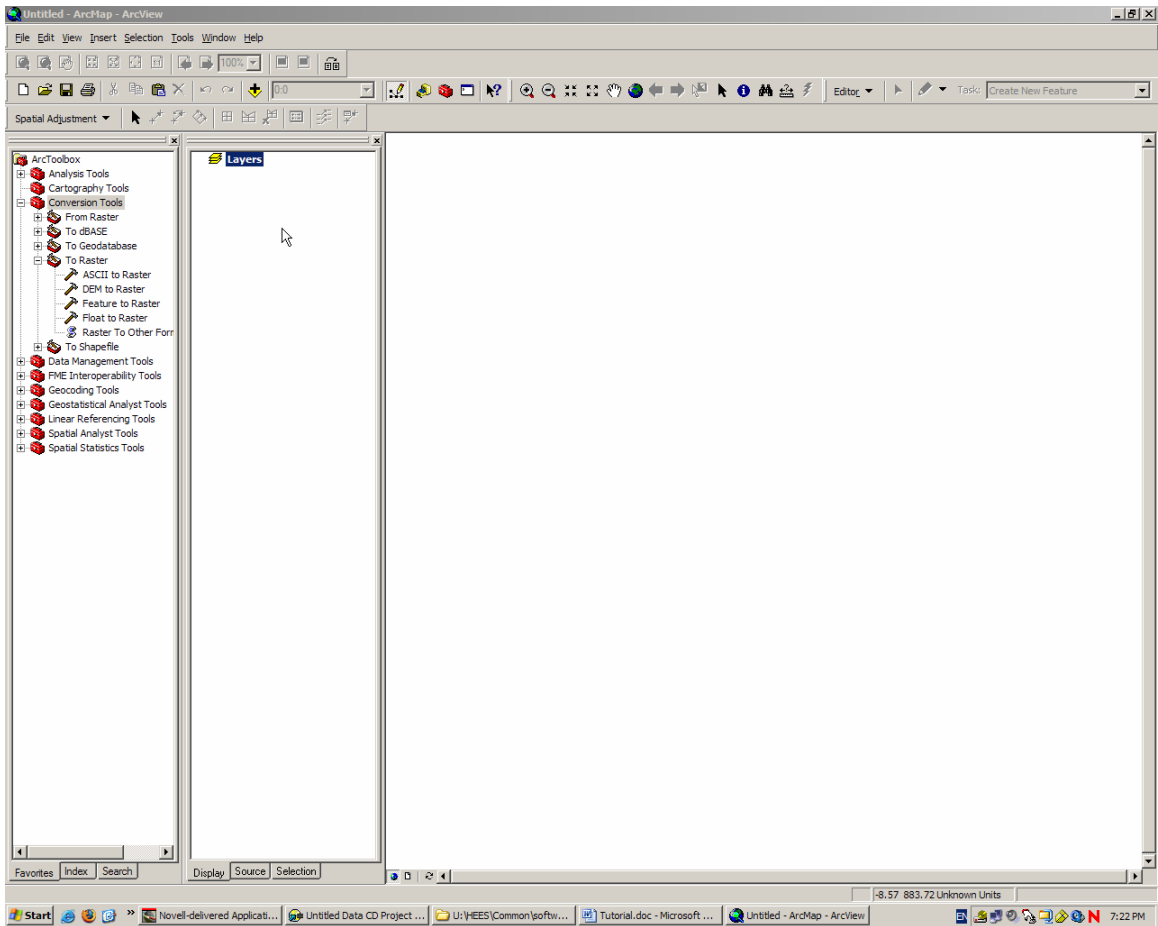


```
SDTS2DEM v.0.018 <29 April 2002> by Sol Katz / AHC / WSE / GMT
Usage: sdts2dem [-n] [DDFbase] [DEMbase] [cell_id]
      -n:  put newlines at end of 1024-char line [default is NO newline].
      DDFbase:  first 4 chars <ABCD> in DDF file name <ABCD>xxxx.ddf)
      DEMbase:  file name for output without .DEM extension
      cell_id:  characters in position 7 and 8 of CELL file name <usually 'L0'>

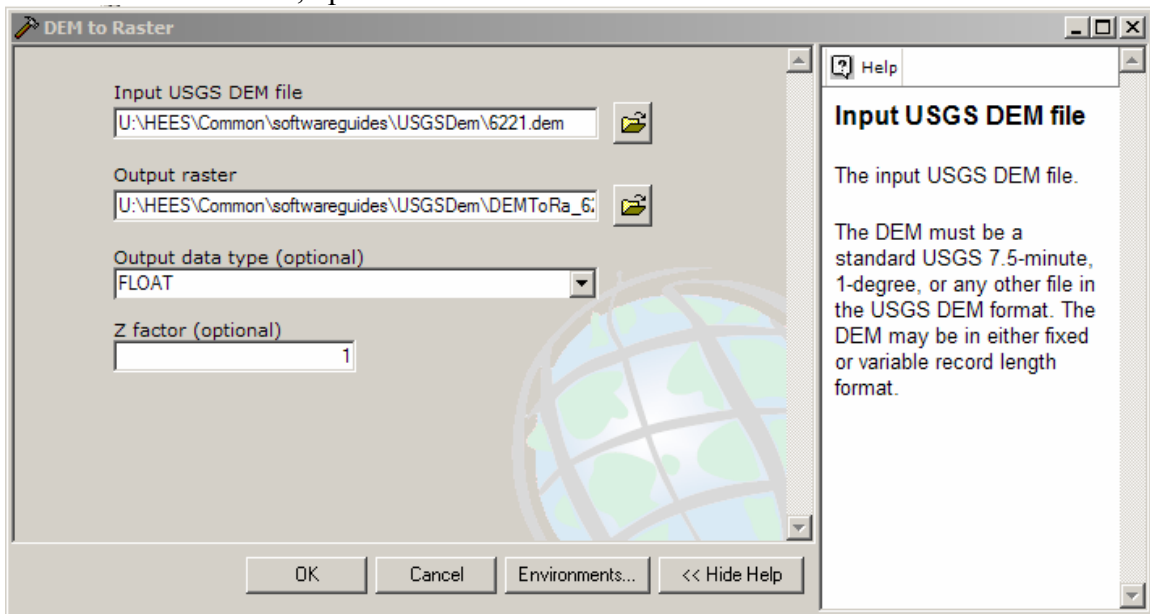
Enter first 4 charcters of the base SDTS file name: 6221
Enter base output file name <exclude any extension>: 6221
```

There should be a new file called *filename.dem* in your folder. This is the file needed for ArcGIS.

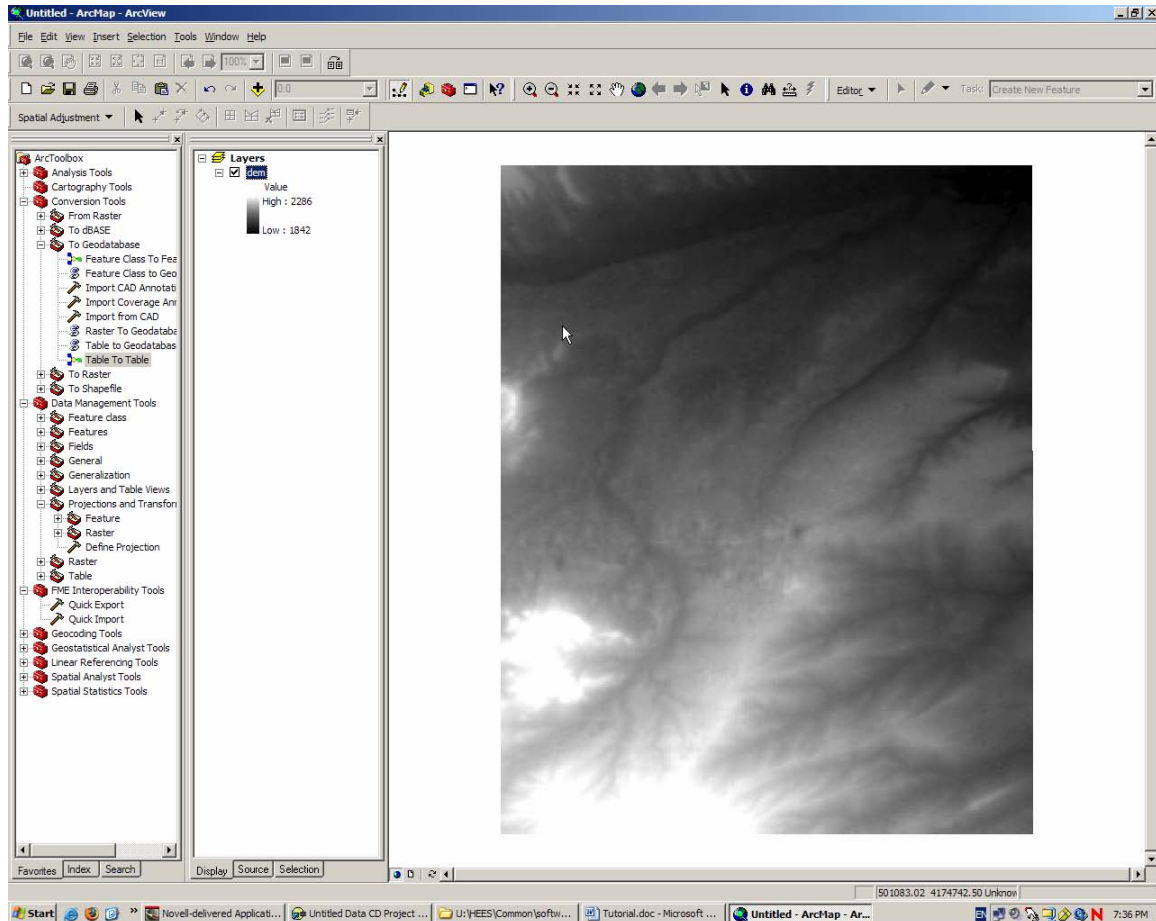
Open ArcGIS, and click on the tools button  to show the toolbox.



In the toolbox window, open Conversion Tools→To Raster →DEM to Raster



Find your .dem file through the browse button beside the “Input USGS DEM file” box, then name and define an output location in the “Output raster” box. Accept other default values and click OK.

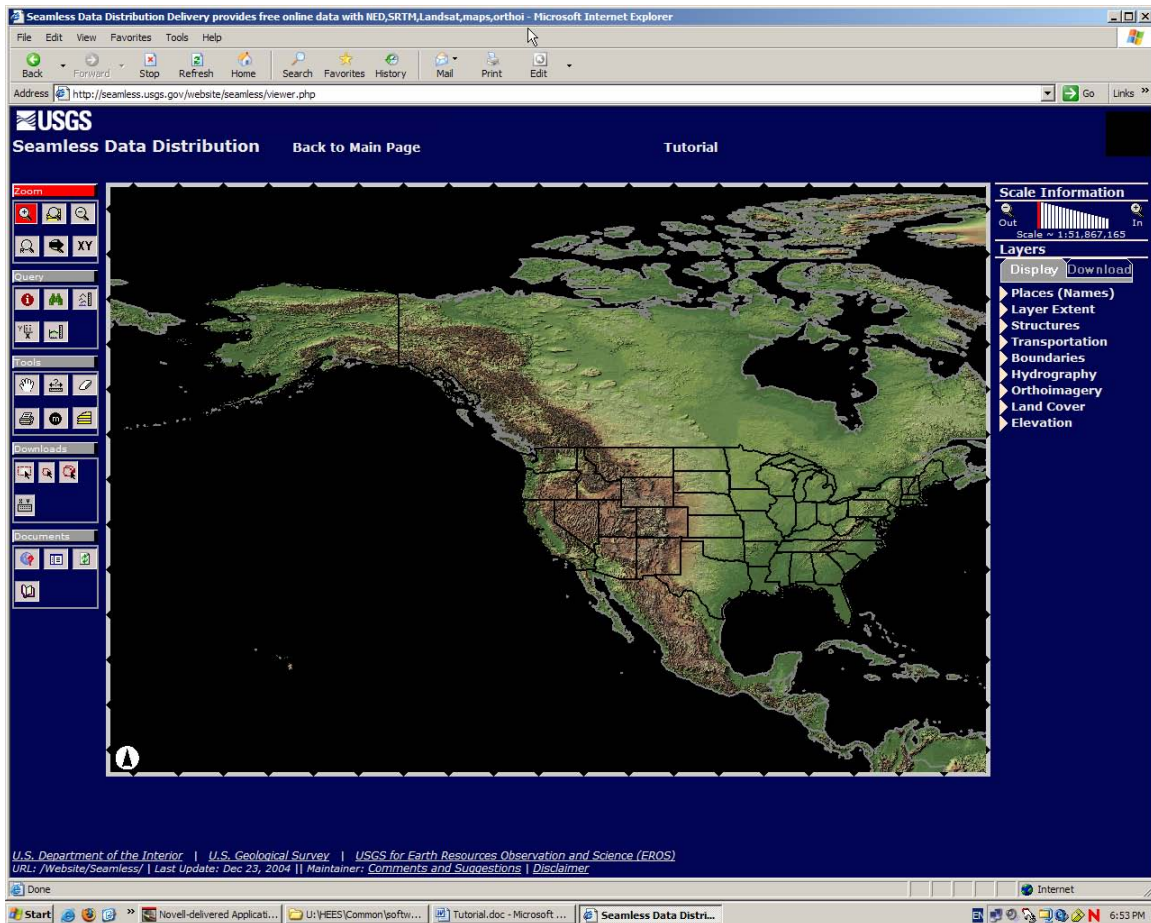






You’ve successfully imported the DEM file into ArcGIS!

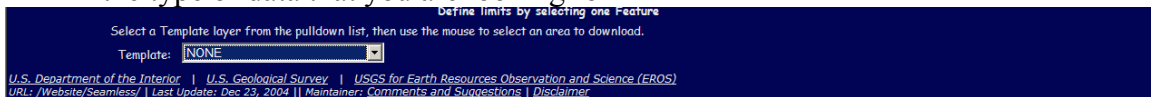
2. Using STREAMLESS DATA (NED):


If you only have a rough idea of the location of DEM that you like, you can find it and download it via SDDS (Seamless Data Distribution System) under NED (National Elevation Dataset): <http://seamless.usgs.gov>

Go to The Seamless Data Distribution System (SDDS)→View and Download United States Data



- Click on  to zoom in to the area that you are looking for
- Click on  to select the file that you would like
- Click on  to select one data file at the point; or click on  to select multiple points. A template box appears at the bottom of the screen where you can choose the type of data that you are looking for

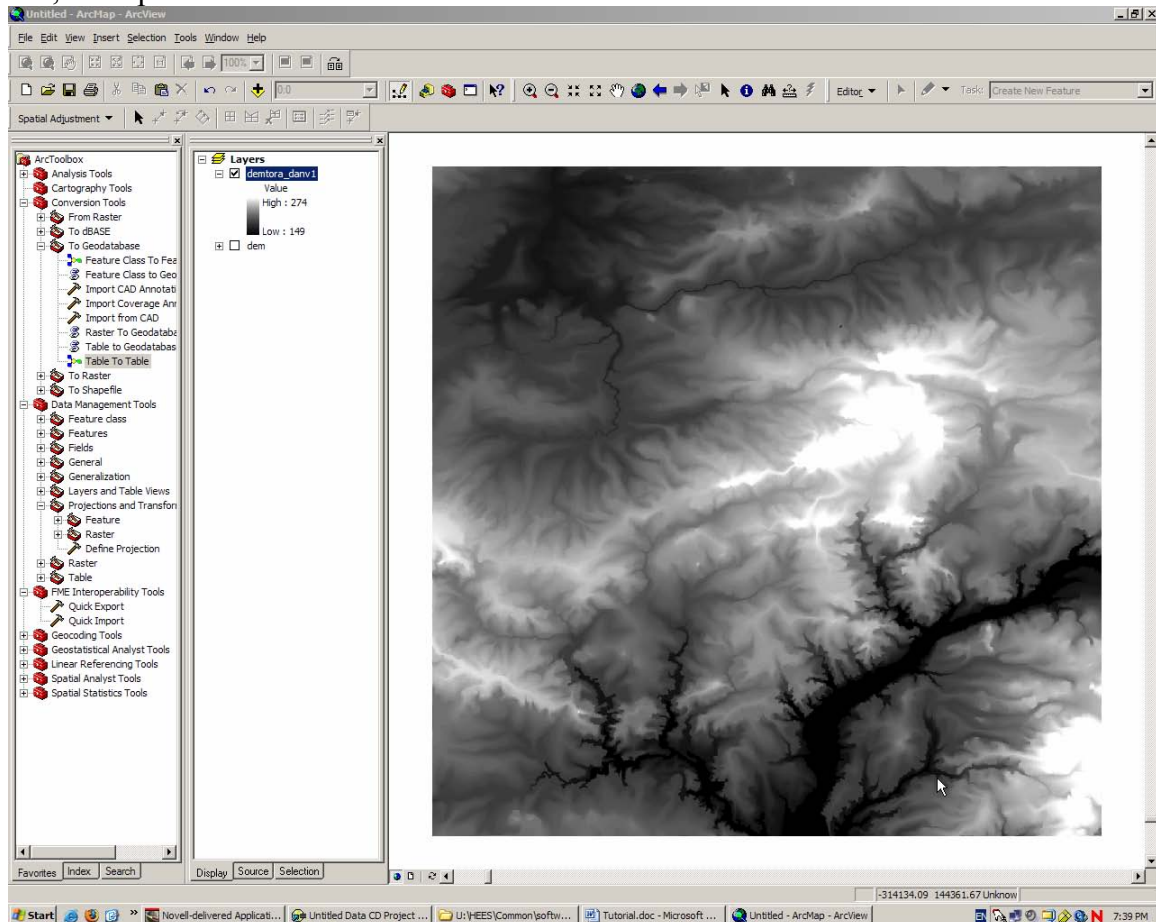


- If you know the exact coordinate that you are looking for; click on  to enter it

Follow the screen to download the desired file. The files will be in ZIP format, so you will need a decompression program such as WinZIP.

Extract the files to a folder, where there will be a file with the extension .shp. This is a shape file recognized by ArcGIS.

To view the file, open ArcGIS, click on the AddData button , find and select the .shp file, and open it.



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