# Python is the Language of GIS

Our commitment to Python is stronger than ever

Python is the language of the ArcGIS platform

# Demonstration

- **Problem Statement**
  - **Drought**
    - **Broad Social and Economic Impacts for the Western US.**
    - **I heard “I’m Thirsty” through the Grape Vine?**
      - **Monitoring Drought and Vineyards**

United States Drought Monitor

# Python Start to Finish

- Master of your GIS Domain
  - Obtaining and Extracting Data

```
drought_zip_file = URLLIB.URLopener()
dzf = drought_zip_file.retrieve(url, OS.path.join(r"C:\Temp", zip_name))
zf = ZIPFILE.ZipFile(dzf[0], "r")
```

  - Managing and Analyzing

```
wine = DM.MakeFeatureLayer(beerWinePath, "BeerWine")
wine_drought = DM.MakeFeatureLayer(intermediate_output, "BeerWineDrought")
DM.SelectLayerByAttribute(wine[0], "NEW_SELECTION", "Type = 'Winery'")
ANALYSIS.SpatialJoin(fl[0], wine[0], intermediate_output, "JOIN_ONE_TO_ONE", "KEEP_ALL")
```

- Web
  - Account Authentication
  - Content Management
  - Builds off previous existing github project
    - Updating Feature Service

```
pw = "PASSWORDHERE" #GETPASS.getpass("Enter AGOL password:")
service_name = "Drought_and_Wine"
agol = AGOLHandler("USERNAMEHERE", pw, service_name)
publish_service(agol, service_name, mxd_path, lf[0])
```

- ArcGIS Online – Value Added
  - Geoenrichment

```
gp_url, jsondata = enrich(fs_url + '/0', '{}_Enriched'.format(service_name), agol.token)
check_job_status(gp_url, jsondata, agol.token)
```

- Automation
  - OS, SYS etc… to Schedule Updates Automatically
  - Example uses python-crontab

```
if __name__ == '__main__':
    date_string = "20140225"
    drought_analysis(date_string)
```

```
def cron_example():
    import crontab as CRON
    tab = CRON.CronTab(user = 'USERNAMEHERE', fake_tab = 'True')
    cmd = r'python PATH2PACKAGEHERE\publish_service.py'
    cron_job = tab.new(cmd, comment='Updating Feature Service')
    cron_job.minute().on(0)
    cron_job.hour().on(12)  ### Runs at 12 PM Local Time
    cron_job.day().every(7) ### Runs every 7th Day
    tab.write()
    print tab.render()

if __name__ == '__main__':
    #### Get Today's Date ####
    import datetime as DT
    today = DT.date.today()
    date_string = str(today).replace("-","")
    drought_analysis(date_string)
```

- **Availability**
  - **https://github.com/mjanikas/devsummit-14-python**