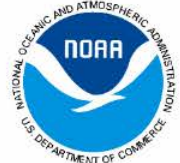
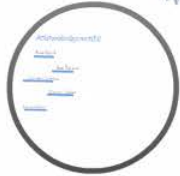


# Freida Campbell

Charles Carleton

Stennis Space Center



Freida Campbell

Indianola, MS

Working with computers since a young age

Computer Engineering

Sophomore



## Charles Carleton

B.S Electrical Engineering

NCDDC

General Physical Scientist



Web Site and Web Service Development  
Systems Administration  
Scientific Visualization  
Geographic Information Science

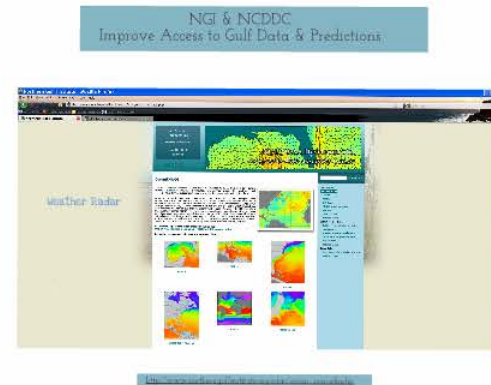


# My Workstation

## Life In The Cubes



# EDAC(EcoSystem Data ASsembly Center)



EDAC is used to back up data from people who run Ocean Models.

The data is then served using OpenDAP, which allows clients to download only what they need out of Data Set.

Accomplished using THREDDS, which lets clients use data easily.



Sea Surface Temperature  
AmSeas Subsection  
May 9th, 2011  
00:00:00



Weather Radar

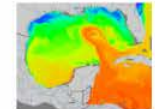
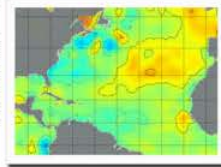
OceanNOMADS

The NOAA National Weather Service NOAA Operational Model Archive and Distribution System (NOMADS) provides distributed, web-service access for real-time and retrospective, format-independent climate and weather model data and related datasets.

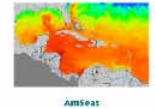
NOAA/NCDC with NCEP are creating an ocean prediction system analogue called OceanNOMADS with the real-time ocean forecast output provided via servers at the NCEP Ocean Prediction Center and with archival at NODC via NOMADS Comprehensive Large Array Storage System (CLASS) a joint Northern Gulf Institute (NGI)/NCDC effort created the developmental version of the archival OceanNOMADS capability under the NGI Ecosystem Data Assembly Center (EDAC) project. Access tool development and storage of newer NOAA and Navy ocean prediction capabilities occur on the NGI/NCDC developmental servers with planned transition to NODC/NCDC operational servers as the ocean forecast archives mature and operational space and distribution capability grow. Oceannomads provides access to ocean prediction system output by both direct download and via OpendAP.

For real-time operational ocean prediction output, see: [http://zooxov.epic.ncep.noaa.gov/forecast/OMADS/OM\\_currents.shtml](http://zooxov.epic.ncep.noaa.gov/forecast/OMADS/OM_currents.shtml)

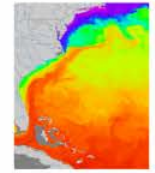
For archived ocean prediction, see menu at right.



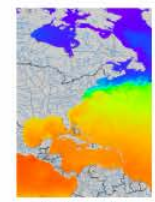
IASHFS



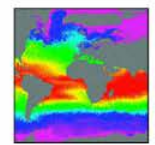
AmSeas



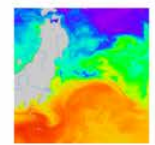
U.S. East



Global HCOM Regions



MOBAS



Other Areas

SEARCH

EDAC Home

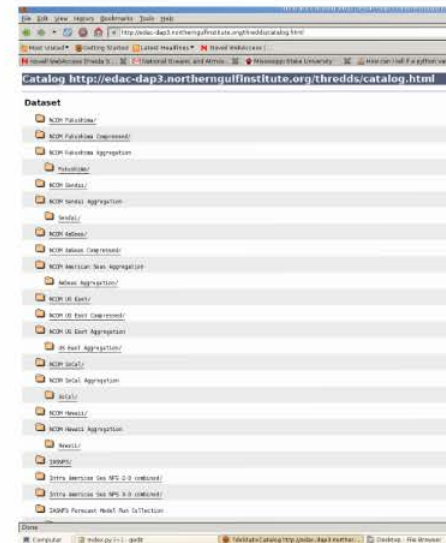
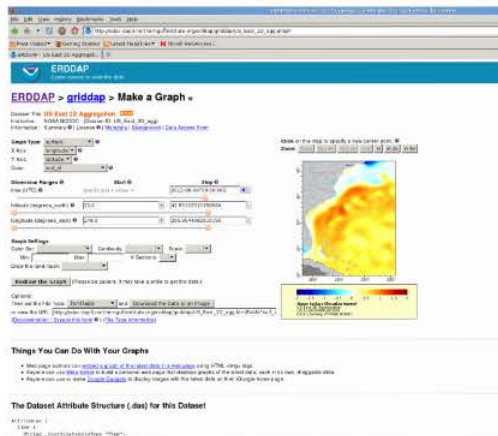
OceanNOMADS

- IASHFS
- AmSeas
- U.S. East
- Global HCOM Regions
- MOBAS
- Other Areas
- Related Links
- Gulf of Mexico Data**
  - Gulf of Mexico Fisheries Data
  - MOBAS Data
  - Northern Gulf Hypoxia data
  - Subaquatic Vegetation data
  - Watersheds
  - Related Links
- Other Data**
  - West Coast Observation System
  - Related Links

# Problem Background

The problem that my project is intended to fix is the difficulty of keeping track of the constant download of NCOM data. The sheer number of files makes it difficult to verify all possible problems manually, making it all too easy to miss bad files, partial downloads, and valid files that contain faulty data.

System Administrator is not notified when these problems occur.



# Sample Of Work

```
Python 2.7.6 Shell
File Edit Shell View Tools Help
Python 2.7.6 Shell

[[]] Database >
Python 2.7.6 Shell
[[]] Database >

import os
import sys
import json

# Create a directory
dir_path = os.path.join(os.getcwd(), 'test_dir')
os.makedirs(dir_path)

# Create a file
file_name = 'test_file.txt'
file_path = os.path.join(dir_path, file_name)
with open(file_path, 'w') as f:
    f.write('Test file content')

# List files in the directory
files = os.listdir(dir_path)

# Print files
print 'Files in directory: %s' % files
```

- Program Detects :
  - Bad Files
  - Missing Files
  - Time Gaps
  - Redundant Files

Python Programming Language



```
DataSetScan.py (-) - gedit
File Edit View Search Tools Documents Help
New Open Save Print Undo Redo Cut Copy Paste Find Replace
DataSetScan.py x
#htmlfile.write('<tr><td>' + name + '</td><td>' + str(len(files)) + '</td></tr>'),

jsonscript= open(os.path.join(direct,name+'.json'), 'w') #create json file
lowercasefiles=[]
duplicated={}
directorypath=[]
path = []
files=[]
file_size=[]
jsondictionary={"file":[],"badlength":[],"today":[],"timespan":[],"gaps":[],"duplicates":[],"error":[]};

for each in overload:#Searches through files and appends to lists.
    dirs,files = os.path.split(each)
    if re.match(find,files):
        path.append(each)
        files.append(files);
        found_file=os.path.join(dirs, files);
        file_size.append(os.path.getsize(found_file));
        lowercasefiles.append(files.lower());
        directorypath.append(dirs)
        jsondictionary["file"].append(files);
#print "\n".join(files);

#pdb.set_trace()

htmlfile.write('<div style="height:240px;width:600px;font:16px/26px Georgia, Garamond,
Serif;overflow:scroll;"><table border = 1 ><thead></thead>')#Creates scroll box

filetext = open(os.path.join(direct +name+'files.txt'), 'w');
htmlfile.write("<h3>" + name + " Files </h3>");
for each in range(len(files)):#Prints all AmSeas filenames to txt and html file
#    print each;
    htmlfile.write('<td>' + files[each] + '</td><td>' + str(file_size[each]) + '</td></tr>');
    filetext.write(files[each] + '\n');
filetext.close();

htmlfile.write('</table></div><p style="font-size:10px;"></p>')

htmlfile.write("<h3>" + name + " Files of 0 Length</h3>");

zerolen=[]
badfile = open(os.path.join(direct,name + 'badfiles.txt'), 'w');#Prints files with a length of 0 and path.
for each in range (len(file_size)):
    if file_size[each]< 0:
        jsondi["badlength"].append(files[each]+ " " + str(file_size[each]));
#        print "Size of %s is %d"%(files[each],file_size[each]) + '\n';
#        htmlfile.write("Size of %s is %d"%(files[each],file_size[each]) + '\n <br />');
        badfile.write("Size of %s is %d"%(files[each],str(file_size[each])) + '\n');
```

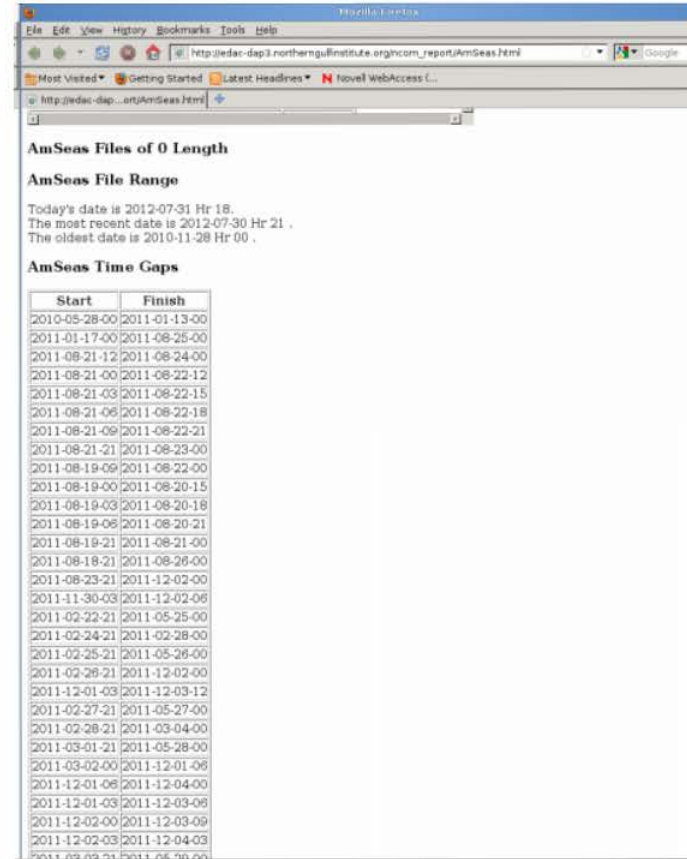
Pro

M

Re

# Results

The output of my program writes to a HTML file.



# Index Page

Today's date is 2012-07-31 Hr 15

## Am Seas

The most recent date is 2012-07-30 Hr 21

The oldest date is 2010-11-28 Hr 00

[Json Link](#)  
[Html Link](#)

## Us East

The most recent date is 2012-07-30 Hr 96

The oldest date is 2011-01-17 Hr 00

[Json Link](#)  
[Html Link](#)

Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://edac-dap3.northerngulfinstitute.org/incom\_report/AmSeas.html

Most Visited Getting Started Latest Headlines Novel WebAccess (...)

http://edac-dap...ort/AmSeas.html

### AmSeas Files of 0 Length

### AmSeas File Range

Today's date is 2012-07-31 Hr 18.  
 The most recent date is 2012-07-30 Hr 21 .  
 The oldest date is 2010-11-28 Hr 00 .

### AmSeas Time Gaps

Start	Finish
2010-05-28-00	2011-01-13-00
2011-01-17-00	2011-08-25-00
2011-08-21-12	2011-08-24-00
2011-08-21-00	2011-08-22-12
2011-08-21-03	2011-08-22-15
2011-08-21-06	2011-08-22-18
2011-08-21-09	2011-08-22-21
2011-08-21-21	2011-08-23-00
2011-08-19-09	2011-08-22-00
2011-08-19-00	2011-08-20-15
2011-08-19-03	2011-08-20-18
2011-08-19-06	2011-08-20-21
2011-08-19-21	2011-08-21-00
2011-08-18-21	2011-08-26-00
2011-08-23-21	2011-12-02-00
2011-11-30-03	2011-12-02-06
2011-02-22-21	2011-05-25-00
2011-02-24-21	2011-02-28-00
2011-02-25-21	2011-05-26-00
2011-02-26-21	2011-12-02-00
2011-12-01-03	2011-12-03-12
2011-02-27-21	2011-05-27-00
2011-02-28-21	2011-03-04-00
2011-03-01-21	2011-05-28-00
2011-03-02-00	2011-12-01-06
2011-12-01-06	2011-12-04-00
2011-12-01-03	2011-12-03-06
2011-12-02-00	2011-12-03-09
2011-12-02-03	2011-12-04-03
2011-02-02-21	2011-05-26-00

Windows taskbar icons: search, volume, network, power.

## Conclusion

By making the website, the system administrator will be alerted of some of the scenarios and problems that need to be fixed.



## Content I've Learned

- Tomcat 
- Java
- HTML(HyperText Markup Language) 
- Python Libraries
- OpenDAP(Data Access Protocol)
- ERDDAP(Environmental Research Division's Data Access Program)
- Command Line Prompts 

# Ship Island

Escape from the cubes

Marine Life



Cownose Ray



Sample Hunting



Teacher's Workshop



Matthew W. Johnson, Ph.D

## Content I've Learned

- Tomcat 
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- HTML(HyperText Markup Language) 
- Python Libraries
- OpenDAP(Data Access Protocol)
- ERDDAP(Environmental Research Division's Data Access Program)
- Command Line Prompts 

# Challenges Encountered

Working on a project alone

Being away from home

Adapting to a new Operating System

Dealing with large amounts of data



# Internship Thoughts

Great Experience

Gained Knowledge

Networking

First experience creating a programming project.



# Acknowledgements

Russ Beard

Rost Parsons

Charles Carleton

Sharon Hodge

Co-workers

# Freida Campbell

Charles Carleton

Stennis Space Center

