

Updating the Fume Hood Monitor System

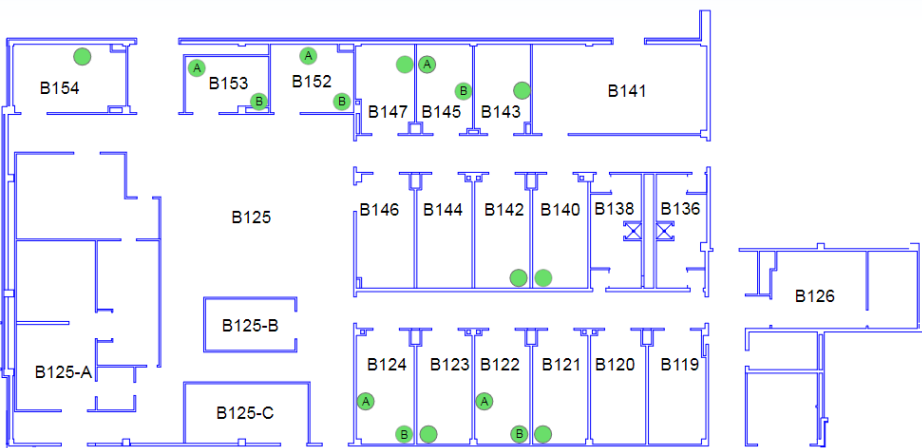
Disha Das

Thomas S. Wootton High School

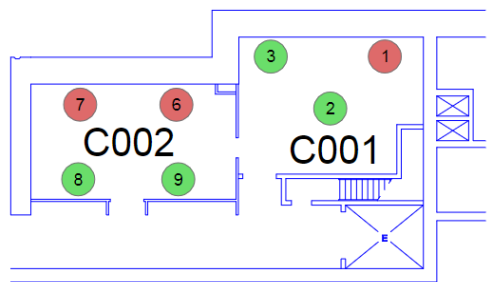


What the System Does

- Alert health physics staff of radiation levels in NCNR fume hoods
- Display data and alarms to website for health physics to respond



B121	82.2 cpm
B122-A	96.2 cpm
B122-B	120.0 cpm
B123	97.6 cpm
B124-A	99.2 cpm
B124-B	80.3 cpm
B140	240.0 cpm
B142	391.8 cpm
B143	50.2 cpm
B145-A	65.6 cpm
B145-B	58.5 cpm
B147	53.1 cpm
B152-A	65.2 cpm
B152-B	91.8 cpm
B153-A	94.7 cpm
B153-B	70.6 cpm
B154	131.9 cpm



C001-1	19644.0 cpm
C001-2	527.0 cpm
C001-3	1110.0 cpm
C002-6	4968.0 cpm
C002-7	2358.0 cpm
C002-8	108.3 cpm
C002-9	804.0 cpm

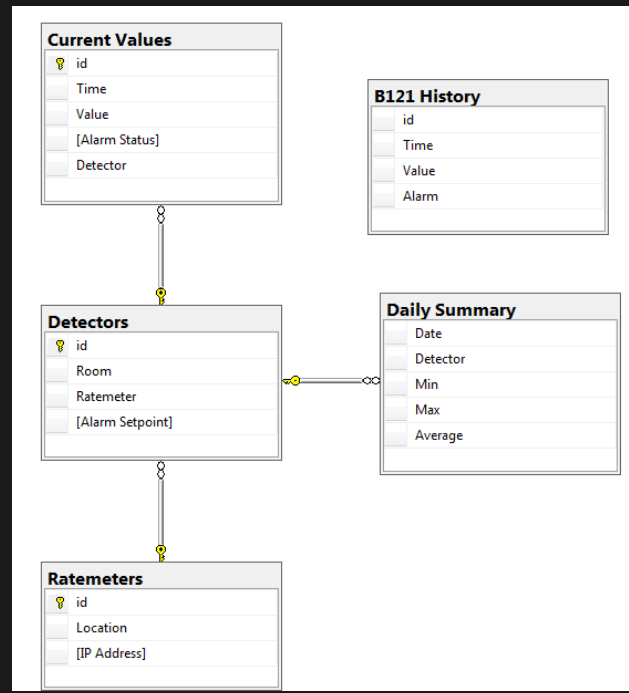
Last Update: 2017-07-05 15:14



Overview

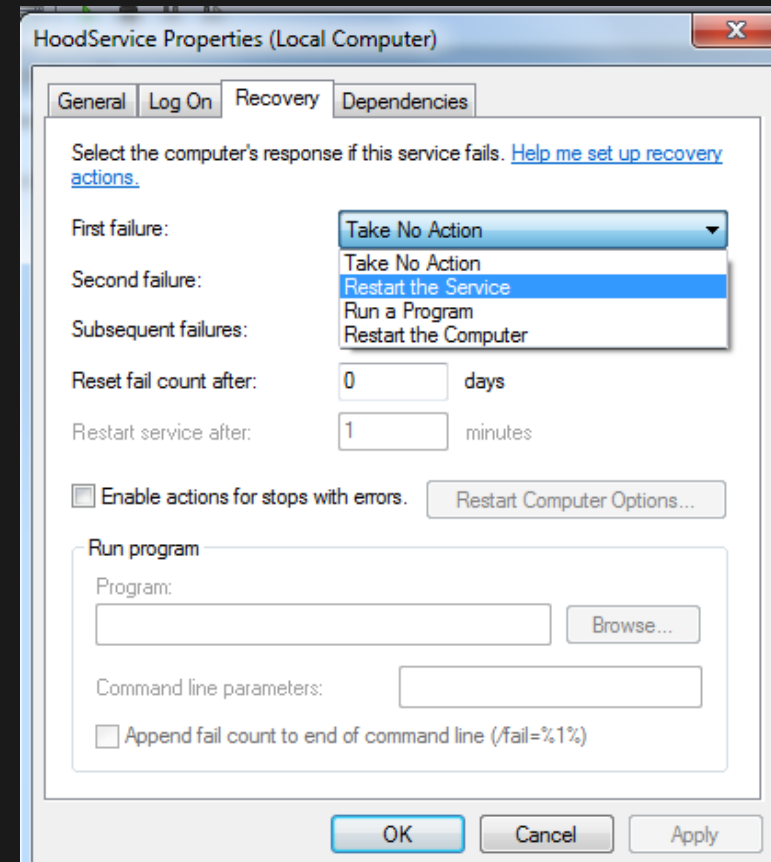


```
file:///c:/users/dnd7/documents/visual studio 2015/  
0 0 1 0 0 0 0 0 3 0 0 0 0 0 1 0 0  
0 0 5 0 0 0 0 0 0 0 0 0 0 0 0 5 0 0  
0 0 48 2 13 10
```



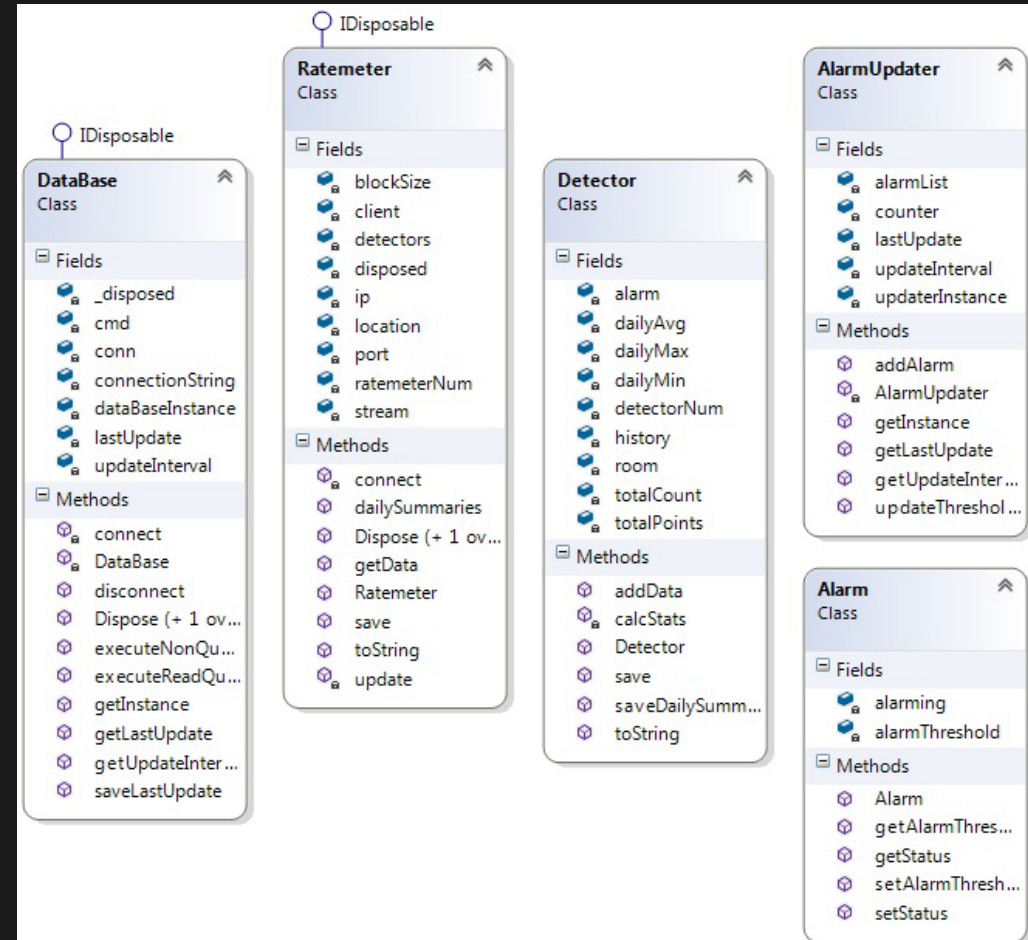
Windows Service Benefits

- Ideal for long running programs in the background
- Provides restart options on shutdown
- Signed

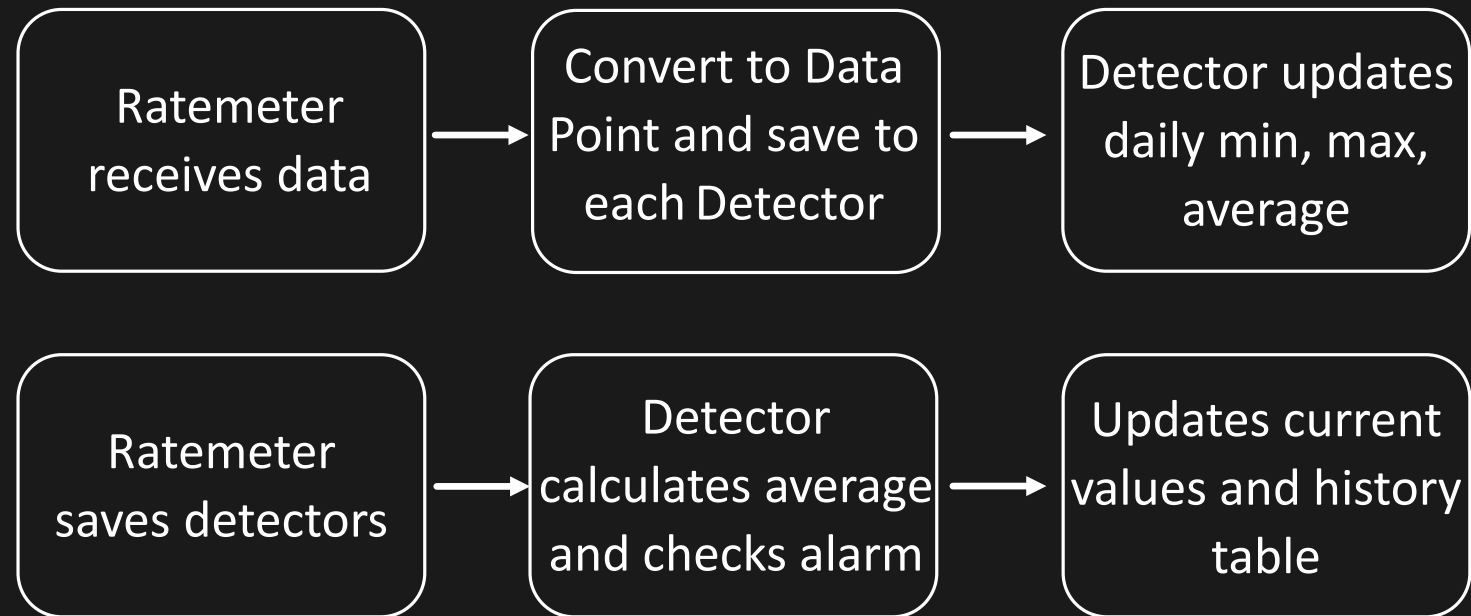


Object Oriented Benefits

- Organization
- Readability



Design

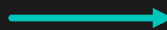


Testing



Testing

```
file:///C:/Users/dnd7/Documents/Visual Studio
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0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 48 2 13 10
```

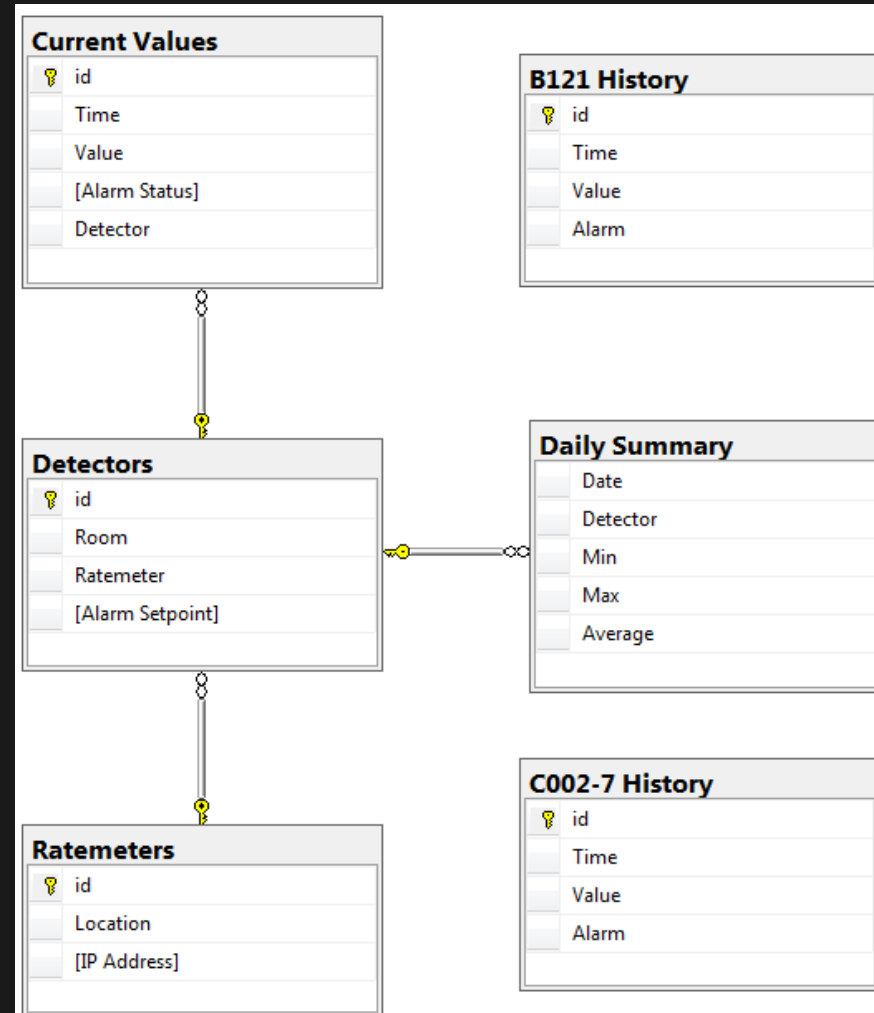


Detector	Counts
1	1
2	0
3	0
4	0
5	0
6	0
7	0
8	0
9	0
10	0
11	0
12	0

- Ran for 1 minute
- Expected 100 cpm
- Received 97 cpm

MS-SQL database

- Large amounts of data
- Multiple connections



Website

- Displays count and alarm information from database
- Shows map layout of detectors (mimic screen),
ratemeter status, and detector trend graphs
- Microsoft Authentication

Sorry you are not a member of the NCNR ROE Group.
You do not have permissions to access this page. If you think you should have access contact an administrator.

Website

B200 Top Shelf

01	B154	0
02	B153-A	0
03	B153-B	0
04	B152-A	0
05	B152-B	0
06	B147	0
07	B145-A	0
08	B145-B	0
09	B143	0
10		0.0 cpm
11		0.0 cpm
12		0.0 cpm

B200 Bottom Shelf

01	B142	0
02	B140	0
03		0.0 cpm
04	B121	0
05	B122-A	0
06	B122-B	0
07	B123	0
08	B124-A	0
09	B124-B	0
10		0.0 cpm
11	B200-Local	0
12		0.0 cpm

C001 Hall

01	C001-1	0
02	C001-2	0
03	C001-3	0
04	C002-6	0
05	C002-7	0
06	C002-8	0
07	C002-9	0
08		0.0 cpm
09		0.0 cpm
10		0.0 cpm
11		0.0 cpm
12	B3-Local	0

Last Update: 0000-00-00 00:00:00

B200 Top Shelf

01	B154	116.5 cpm
02	B153-A	108.4 cpm
03	B153-B	74.5 cpm
04	B152-A	104.5 cpm
05	B152-B	107.1 cpm
06	B147	64.5 cpm
07	B145-A	74.5 cpm
08	B145-B	65.6 cpm
09	B143	40.7 cpm
10		0.0 cpm
11		0.0 cpm
12		58.5 cpm

B200 Bottom Shelf

01	B142	924.0 cpm
02	B140	315.8 cpm
03		0.0 cpm
04	B121	86.3 cpm
05	B122-A	144.0 cpm
06	B122-B	247.2 cpm
07	B123	126.3 cpm
08	B124-A	88.9 cpm
09	B124-B	92.3 cpm
10		85.7 cpm
11	B200-Local	804.0 cpm
12		0.0 cpm

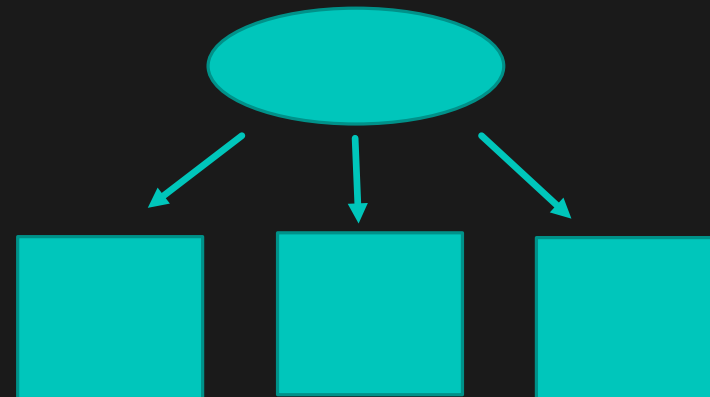
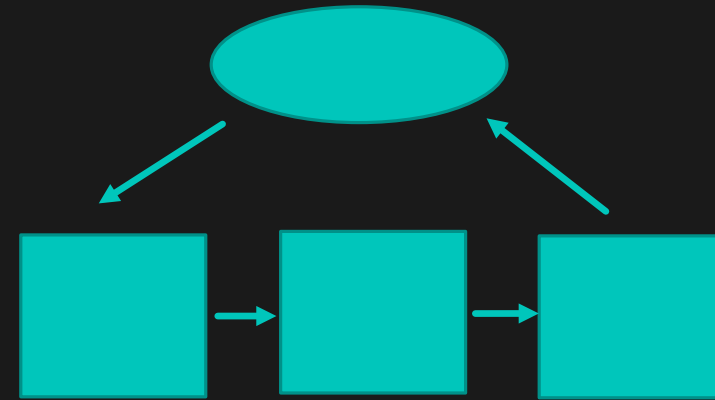
C001 Hall

01	C001-1	106.3 cpm
02	C001-2	180.9 cpm
03	C001-3	187.5 cpm
04	C002-6	126.2 cpm
05	C002-7	75.0 cpm
06	C002-8	79.7 cpm
07	C002-9	515.0 cpm
08		0.0 cpm
09		0.0 cpm
10		0.0 cpm
11		0.0 cpm
12	B3-Local	38.7 cpm

Last Update: 2017-07-21 08:59:11

Future

- Multithreaded
 - Minimize data loss
- Add website functionality



Conclusions

- Program is more reliable
- Hood monitoring data is part of centralized database
- Hood webpages added to new website

Acknowledgements



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