Downtime logger tool
Users guide

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Downtime logger tool description

- Downtime logger is **python** based **GUI** tool which saves NOvA downtime information to database. The tool also gives a user the possibility to create new downtime record or list and edit already existing records.
- Script accepts single argument which governs its running mode. If the script argument
  - matches DiskWatcher message "Partition 1 transitioned from Running to Stopped, Last Run/Subrun/Time xxx yyy timestamp" or argument = "0" script runs in semi-automatic mode
  - matches DiskWatcher message "Partition 1 transitioned from Stopped to Running, Last Run/Subrun/Time xxx yyy timestamp" or argument = "2" script runs in auto mode
  - in all other cases (including empty or missing argument) script runs in fully manual mode

Downtime logger - how it works

- Semi-automatic mode
  - Started by : python dtl.py arg, where **arg** can be either valid start downtime DiskWatcher message or 0 (zero number).
  - Script automatically saves **event ID**, **run number**, **start time**, **end time** (set to dummy value) and **detector** (based on where the script is running) to database
  - Script opens popup window asking the user to provide additional info : **downtime category** (menu), **event description**, **user name**.
- Auto mode
  - Started by : python dtl.py arg, where **arg** can either be valid end downtime DiskWatcher message or 2.
  - Script automatically saves **end time** to database
- Manual mode
  - Started when **arg** is anything else than valid DiskWatcher message or numbers "0" and "2" (including empty string)
  - Script opens popup window which provide more functions to user, Make new entry, List/Edit entries

Downtime logger - how it works # 2

Manual mode functions

- Make new entry
  - Script opens popup window and user can insert all information : run number, start time, end time, downtime category (menu), downtime description and user name.
- List/Edit entries
  - Script opens popup window with a list of downtime events.
  - User can use variable cuts to narrow down the event list.
  - User can select single event from displayed list (selected event is highlighted).
  - After event selection script shows details of selected event and user can edit them.

Downtime logger - how it works # 3

Log file

- Important steps in DTL script usage, like DTL script argument, data entered to database, or database connection failures are documented in a log file.
- Log file path can be set in Setup function (set the value corresponding to logfile key of general dictionary).

Prerequisites and setup

Downtime logger python script needs a few extra things :

- Tkinter python module - contains GUI objects classes (Debian Linux package **python-tk**)
- psycopg2 python module - python module for PostgreSQL (Debian Linux package **python-psycopg2**)
- dbutils_new python module - functions for using PostgreSQL (comes with downtime logger code)

- Tkinter,psycopg2 modules should be available after environment setup (NOvA offline cluster)
- dbutils_new.py can be, together with downtime logger code (dtl.py), obtained from CVS : novacvs/Online/pkgs/DAQOperationsTools/script

No other setup is needed

Configurables

Some important features of downtime logger tool are not hardcoded and can be easily configured. Those features can be configured by editing **general** dictionary in **Setup** function of **dtl.py** script.

- **Downtime categories** - downtime categories are defined by a python list corresponding to general dictionary key downtime_categories.
- **NOvA detectors** - NOvA detector names are defined by a python list corresponding to general dictionary key detectors.
- **Db table content** - python list corresponding to general dictionary key dbvars contains a set of database table column names. They are used in the listing of downtime events.

Configurables #2

- **Valid DiskWatcher messages** - python dictionary corresponding to general dictionary key dwstrings holds a set of recognized DiskWatcher messages.
- **Log file path** - path to DTL script log file, string corresponding to general dictionary key logfile.