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| ADI Study Watch  New Task Addition |
| REV 1.0.0,MAR 2021 |

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# Prerequisite

The steps given below expects that the reader is familiar with the Study Watch source code and source files.

# Steps to add a new Task

The steps to add a new FreeRTOS task to the watch application is listed here:

1. Take an existing application task source & header file as reference and add the new\_task.c, new\_task.h file into a relevant folder within adi\_study\_watch/modules/ folder. As an example, pedometer\_task.c and pedometer\_task.h file can be taken as reference.
2. Fill in the functions in these files appropriately: task initialization function, task function, m2m2 commands handling function, send\_new\_task\_app\_data() to be used for sending messages from post office, etc.
3. Update watchv4\_nrf52840 SES project:

* Add the new\_task.c file from the SES Project explorer:

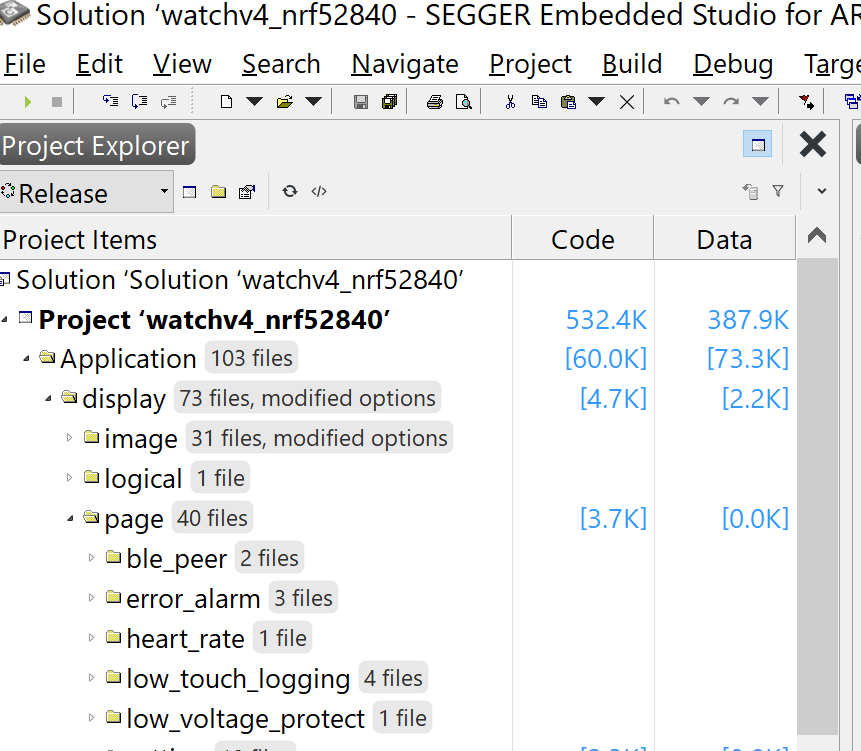


Figure 1: New task addition

* Add the path to new\_task.h file from Project options:

Graphical user interface, text, application, email

Description automatically generated

Figure 2: Add path to new task header

1. Edit adi\_study\_watch/modules/system/**post\_office.h** file:

* Update task\_queue\_index\_t, to add new task index, for the new task.

1. Edit adi\_study\_watch/modules/system/**post\_office.c** file:

* Include new\_task.h
* Update relevant fields in post\_office\_routing\_table\_entry\_t m2m2\_routing\_table[]

1. Edit adi\_study\_watch/cli/m2m2/inc/c/**m2m2\_core.h**file:

* Add the m2m2 address for the new task and new task stream into M2M2\_ADDR\_ENUM\_t enum list

1. Edit adi\_study\_watch/cli/m2m2/inc/python/**m2m2\_core\_def.py**file:

* Add the m2m2 address for the new task and new task stream into class M2M2\_ADDR\_ENUM\_t enum list

1. Add files in adi\_study\_watch/cli/m2m2/inc c, python, cpp, master\_definitions folders to add the new\_task\_interface .h/.py/.hpp/.py definitions
2. Edit adi\_study\_watch/app/nRF52840\_app/**app\_cfg.h**

* Add following defines as relevant for new task:

#define  APP\_OS\_CFG\_NEW\_TASK\_PRIO                      6

#define  APP\_OS\_CFG\_NEW\_TASK\_STK\_SIZE             1024

1. Edit adi\_study\_watch/app/nRF52840\_app/**main\_freertos.c** file:
   * Include new\_task.h
   * Call the new\_task\_init(); before vTaskStartScheduler(); call
2. Add relevant test commands for new task or streams in adi\_study\_watch/cli/m2m2/tools/**CLI.py**file
3. Add the app task address and stream address in application\_name\_map and stream\_name\_map list in adi\_study\_watch/cli/m2m2/tools/**m2m2\_common.py**file
4. Add a new “class new\_task\_plot” to plot the data from new task onto adi\_study\_watch/cli/m2m2/tools/plot\_parsers.py file