



Using Object Keys and Event Handlers to Generate Training Reports

MINT UCON December 2021





FTI Course Completion Report

Flight Training International

3401 Quebec St. Ste 10000 - Denver, CO 80207 - www.ftiratings.com - 303-329-0999

Course: B737NG Type Rating - Remove Circle in VMC Restriction **61.64 Satisfied (Y/N):** NA - Not Applicable
Trainee: Robert Jeffrey (SJeffreyR) **Cert Applied For:** NA
Cert. No.: 3414087
Cert. Held: FAA ATP
Citizenship: USA

This letter certifies that the individual below attended training at Flight Training International (FTI). All aspects of training were in compliance with the requirements of 14 CFR 142.

Course: Added Type Rating - B-737 Curriculum (\$61.153)

Type of Check:	Type Rating - PIC (61.153)	AC Type:	B7378	Location:	Miami
Date of Check:	11-Nov-2021	FSTD FAA ID:	1097	TCE Cert:	999999214
Duration of Check	4.0	TCE:	ECARBALLOSA		
Check Result:	Sat				

Training Dates: Nov 8, 2021 to Nov 11, 2021

C. R. Hagan

Training Center Manager



Required Parameters

Required Parameters – Original

Initialize Query

Initialize the parameters of this query.

Training Start MM/dd/yy HH:mm

Training End MM/dd/yy HH:mm

Pilot Search resources

Product

Don't show again

OK Cancel

Required Parameters – Using Object Keys

Initialize Query

Initialize the parameters of this query.

Test RRI Obj Key 1288057

Don't show again

OK Cancel



What Are Object Keys and How Can You Use Them?

- What are Object Keys?
- What information do they provide access to?
- How can they be used to build queries?
- How can they be used to trigger Event Handlers?





Object Keys

- Unique Identifier for any Object within Database
 - Event
 - Resource
 - Location
 - Etc.
- Allows users to limit query results to a single
 - Project
 - Event
 - Resource
- Contains related data
 - Name
 - Start & End Dates
 - Participants
 - Sub-Events
 - Outcomes
 - Modified by
 - Property Values





Parameter & Where Statements

Start Report with Parameter = Object Key for triggering Object (project)

Parameters

of type with default value optional

Include a where statement to limit results to the object (project)

Where

Resource Record Item ▶ Object Key equals Test RRI Obj Key (Integer)





Autogenerating EOC Reports with Event Handlers

- Event Handler Trigger: Object Created
 - Option 1: Create one event handler for each form submitted
 - Run a report when a specific form is created
 - Send copies to relevant individuals
 - Option 2: Create an event handler for new object in a Folder.
 - Used when you have a series of related forms in a folder
 - Type Rating Checks
 - Proficiency Checks
 - Instructor Training
 - Allows a single event handler to autogenerate reports for multiple customers/circumstances



Steps (Actions) In Event Handler

EOC-ACS RQ/PC Completed - Edit Event Handler

General

Actions

Actions

+ ✎ ✕ | ↑ Up ↓ Down

Action	Valid	Conditional
EOC Report RQ-PC as PDF (Execute Report)	✓	✗
EOC RQ PC Report - HTML (Execute Report)	✓	✗
Execute Filename Report (Execute Report)	✓	✗
SQL for Filename (Generic Database Query)	✓	✗
Send EOC Report PC/RQ (Send Notification (Server))	✓	✗

1. Choose Trigger – normally creation of a specific record item
2. Run desired reports
 - a. PDF Version saved as an attachment
 - b. HTML Version used in body of notification
3. Create a filename for attached pdf report
4. Use SQL code to clean file name of any unwanted (hidden) characters
5. Send notification
 - a. Use the HTML output for the body
 - b. Attach the PDF named appropriately
 - c. Use record items to define recipients



Event Handler – New RI Created

ACS Test/Check Form Submitted - Edit Event Handler

General

Property	Value
M Name	ACS Test/Check Form Submitted
M Event	Resource Record Item Created
Description	
Documentation File of Event Handler	
M Active	Yes
M Sequence	1
User Account	
Re-execute If Failed	No
Re-execution Interval (Minutes)	
Maximum Number of Re-Executions	
Logging Level	ALL
Logging Pattern (Format)	
Run in context of original user	NO
M Queue Name	Default Queue
Record Item Filter	ACS Testing/Checking Forms

Type: TEXT
Created by: SUPPORT on 11/12/19 01:38
Last Modified by: CRHAGAN on 01/04/20 17:37

Invalid
Read only

OK Close Apply

- Don't use default queue. Name it anything you want, but create a new queue.
- Runs when a new RRI is created in the folder ACS Testing/Checking Forms





Run EOC Report in PDF

Execute Report - Edit Event Handler Action

General

Property	Value
M Action	Execute Report
Action Name	EOC Report RQ-PC as PDF
Action Description	Generates RQ-PC report
M Report	PTS/ACS EOC Report - PC/RQ - Event Handler
CSV Separator	
Parameter 1	Create Resource Record Item / Resource Record Item Key
Parameter 2	
Parameter 3	
Parameter 4	
Parameter 5	
Parameter 6	
Parameter 7	
Parameter 8	
Parameter 9	
Parameter 10	
Parameter Mapping	Test RRI Obj Key=%Parameter1%
Result Format Type	PDF
Execute this action only if	
Execute Always (Ignore Errors)	Yes

Type: ACTION_TREE
Created by: CRHAGAN on 06/18/20 03:45
Last Modified by: CRHAGAN on 06/18/20 03:45

Invalid Read only

OK Close Apply

- Parameter Mapping: Test RRI Obj Key =%Parameter1%
- **Note:** Make sure that the parameter names match those used in the report both in exact text and order





Run EOC Report in HTML

Execute Report - Edit Event Handler Action

General

Property	Value
M Action	Execute Report
Action Name	EOC RQ PC Report - HTML
Action Description	Runs report in HTML
M Report	PTS/ACS EOC Report - PC/RQ - Event Handler
CSV Separator	
Parameter 1	Create Resource Record Item / Resource Record Item Key
Parameter 2	
Parameter 3	
Parameter 4	
Parameter 5	
Parameter 6	
Parameter 7	
Parameter 8	
Parameter 9	
Parameter 10	
Parameter Mapping	Test RRI Obj Key=%Parameter1%
Result Format Type	HTML
Execute this action only if	
Execute Always (Ignore Errors)	Yes

Type: ACTION_TREE
Created by: CRHAGAN on 06/18/20 03:57
Last Modified by: CRHAGAN on 06/18/20 03:57

Invalid
Read only

OK Close Apply

- Parameter Mapping: Test RRI Obj Key =%Parameter1%
- **Note:** Make sure that the parameter names match those used in the report both in exact text and order





Get Filename

Execute Report - Edit Event Handler Action

General

Property	Value
M Action	Execute Report
Action Name	Execute Filename Report
Action Description	Gets filename for pdf
M Report	Report Filename for EOC
CSV Separator	
Parameter 1	Create Resource Record Item / Resource Record Item Key
Parameter 2	
Parameter 3	
Parameter 4	
Parameter 5	
Parameter 6	
Parameter 7	
Parameter 8	
Parameter 9	
Parameter 10	
Parameter Mapping	RRI=%Parameter1%
Result Format Type	CSV
Execute this action only if	
Execute Always (Ignore Errors)	Yes

Type: ACTION_TREE
Created by: CRHAGAN on 06/18/20 03:57
Last Modified by: CRHAGAN on 06/18/20 03:57

Invalid
 Read only

OK Close Apply





Get Filename Query

▼ Query for Resource Record Items

Select

<input type="checkbox"/> Schedule Project End	as	Resource Record Item ▶ Schedule Event ▶ Schedule Project ▶ End
<input type="checkbox"/> Schedule Project Name	as	Resource Record Item ▶ Schedule Event ▶ Schedule Project ▶ Name
<input type="checkbox"/> Schedule Project Category	as	Resource Record Item ▶ Schedule Event ▶ Schedule Project ▶ Category
<input type="checkbox"/> Resource Last Name	as	Resource Record Item ▶ Resource ▶ Last Name

+ Property

+ Aggregation

Where

<input type="checkbox"/> AND	<input type="checkbox"/> Resource Record Item ▶ Object Key	equals	Parameter	RRI (Integer)
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+ And Or

+ Add Sub-Query

Sort

+ Property

Parameters

<input type="checkbox"/> RRI	of type	Integer	with default value	1131303	<input type="checkbox"/> optional
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+ Parameter

Properties

Search

▼ Basic

Name	VariableEnd
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▼ Data

Calculation	No calculation
Initial-Valu...	\$(Schedule Project End)
Expression	=new SimpleDateFormat("yyyy.MM.dd").format(\$(Schedule Project End))
Update Time	For each row
Reset Time	Start of report
Value Type	TEXT

Properties

Search

▼ Basic

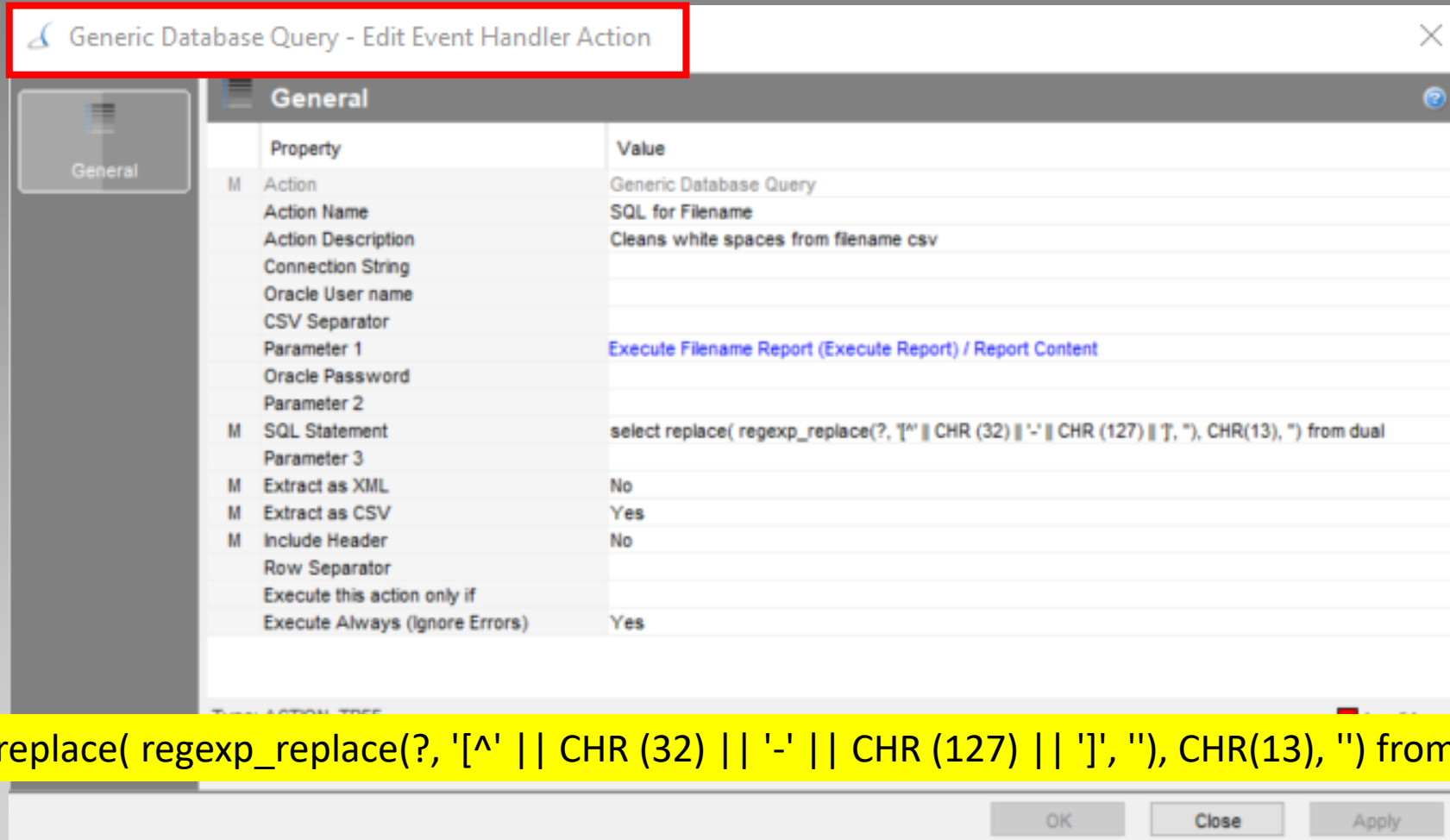
Name	Resource Last Name
------	--------------------

▼ Data

Evaluation ...	Immediate
Expression	EOC_Report_\$(Resource Last Name)_\$(Schedule Project Category)_\$(VariableEnd).pdf



SQL for Filename



Property	Value
M Action	Generic Database Query
Action Name	SQL for Filename
Action Description	Cleans white spaces from filename csv
Connection String	
Oracle User name	
CSV Separator	
Parameter 1	Execute Filename Report (Execute Report) / Report Content
Oracle Password	
Parameter 2	
M SQL Statement	select replace(regexp_replace(?, '[^' CHR (32) '-' CHR (127) ']', ''), CHR(13), '') from dual
Parameter 3	
M Extract as XML	No
M Extract as CSV	Yes
M Include Header	No
Row Separator	
Execute this action only if	
Execute Always (Ignore Errors)	Yes

```
select replace( regexp_replace(?, '[^' || CHR (32) || '-' || CHR (127) || ']', ''), CHR(13), '') from dual
```

- Filenames are applied for standardization and ease of retrieval during audits
- Output from filename report will have unwanted characters that must be removed.
- Use the code here



Send Notification

Send Notification (Server) - Edit Event Handler Action

General

Property	Value
M Action	Send Notification (Server)
Action Name	Send EOC Report PC/RQ
Action Description	Sends Report
Notification Recipient	
Recipient Employee IDs	
Recipients Requirement	EOC Report Recipients
M Notification Subject	SQL for Filename (Generic Database Query) / Result as CSV
M Notification Message Body	EOC RQ PC Report - HTML (Execute Report) / Report Content
Notification Sender	
M Send Internal	Yes
M Send as Email	Yes
Attachment Content	EOC Report RQ-PC as PDF (Execute Report) / Report Content
Attachment File Name	SQL for Filename (Generic Database Query) / Result as CSV
Attachment Content Encoding	binary
Notification Attachment Property Name	Attachment
Execute this action only if	
Execute Always (Ignore Errors)	Yes

Type: ACTION_TREE
 Created by: CRHAGAN on 06/18/20 04:02
 Last Modified by: CRHAGAN on 06/18/20 04:02

Invalid
 Read only

OK Close Apply

- Set recipients as needed
 - Individual names, or create a requirement that sends to a group (assign RI to desired recipients)
- You can use SQL file name or just plain text for the notification subject
- Body is HTML Report Output





Similar Use Cases

- Completion of any Training regardless of Report Type
 - Course specific report
 - Customer specific report
 - CAA vs. non-CAA reports
- Training Progress Reports auto-sent upon:
 - Completion of phase (ground, FTD, FFS)
 - Ready for Test/Check
- LMS Completions
- Document/Form Submissions
- Instructor/Student Records Retrieval
- Notification of final schedule





Is it Worth the Effort

- Steep learning curve
- No significant tech skills required
- Helps to have a library of useful expressions (attached)
- Reports will evolve over time as experience/needs dictate
- Bottom line:
 - Implemented by a single user working part-time over 1-2 months
 - As always, MINT Key Account (Kenny Blakely) is a great resource
 - Eliminated 1 full time managerial position
 - Improved accuracy and timeliness of reporting





Where to Practice?

- Oracle Website
 - Play with the emulator and see if code works
 - <https://livesql.oracle.com/apex/f?p=590:1:15131426444506::NO:::>
- Best source for codes so far has been:
 - https://www.oracletutorial.com/oracle-date-functions/oracle-next_day/



Microsoft Word
Document

