

Internal Table Operations

Internal table operations are most important for a ABAP developer, below are some of the most important internal table operations

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Using APPEND in SAP ABAP

APPEND statement is used to append or add a record from work area to internal table, the new record will be added at the end of the internal table.

Syntax: APPEND <WA> TO <ITAB>

DATA : IT_MARA TYPE TABLE OF MARA.

DATA : WA_MARA TYPE MARA.

WA_MARA-MATNR = '00001'.

```
WA_MARA-MTART = 'FERT'.  
WA_MARA-MEINS = 'EA'.  
APPEND WA_MARA TO IT_MARA . "APPEND WORK AREA TO INTERNAL TABLE
```

Using INSERT in SAP ABAP

INSERT statement is used to insert or add a record from work area into internal table at specified location

```
Syntax: INSERT <WA> INTO <ITAB> INDEX <index><index></index>  
DATA : IT_MARA TYPE TABLE OF MARA.  
DATA : WA_MARA TYPE MARA.  
WA_MARA-MATNR = '00001'.  
WA_MARA-MTART = 'FERT'.  
WA_MARA-MEINS = 'EA'.  
INSERT WA_MARA INTO IT_MARA INDEX 2 . "The record will be inserted into internal table at 2nd position
```

Using SORT in SAP ABAP

SORT is used to sort a Internal table data in ascending order or descending order, by default it will sort data in ascending order. In addition to this we can able to sort data based on specified fields.

```
Syntax1 : SORT <ITAB> . "Default sorts data in ascending order  
Syntax2 : SORT <ITAB> DESCENDING . " Sort in descending order  
Syntax3 : SORT <ITAB> BY <FIELD1> <FIELD2>...ASCENDING/DESCENDING ."It sorts data by specified fields  
<FIELD1>,<FIELD2>..
```

Using DESCRIBE TABLE in SAP ABAP

DESCRIBE TABLE is used to count the no of records in a internal table

```
Syntax: DESCRIBE TABLE <ITAB> LINES <v_lines> ." Count the no. of  
record of a internal table, here v_lines stores count  
DATA : V_LINES TYPE I. "Type integer  
DESCRIBE TABLE IT_MARA LINES V_LINES ." Count the no. of record of a internal table  
Write : v_lines .
```

Using READ TABLE WITH KEY in SAP ABAP

READ TABLE WITH KEY .. BINARY SEARCH is used to read a single record from an internal table into work area specified by field name and field value .

BINARY SEARCH is a search mechanism which is used to read a record from internal table into work area very fast, the functionality of binary search it divides the into parts and searches, for full details [Binary Search](#)

[mechanism in SAP ABAP](#). **The internal table must be sorted in ascending order before using binary search .**

Syntax: READ TABLE <ITAB> INTO <WA> WITH KEY <FIELD1> = <FIELD1 VALUE> <FIELD1> = <FIELD1 VALUE>

BINARY SEARCH .

." Read a record into work area where some field = some value

READ TABLE IT_MARA INTO WA_MARA WITH KEY MATNR = '0001' BINARY SEARCH . "Read a

record into work area where MATNE is '0001'

Using READ TABLE WITH INDEX in SAP ABAP

READ TABLE WITH INDEX is used to read a single record from an internal table into work area specified by index.

Syntax: READ TABLE <ITAB> INTO <WA> INDEX <index_no>

." Read a record into work area using index (position)

READ TABLE IT_MARA INTO WA_MARA INDEX '2' . "Read a record into work area where

index is 2.

Using LOOP....ENDLOOP. in SAP ABAP

Loop...Endloop. is also used to read data from a internal table into work area, this is used to read multiple records serially one after one .

Syntax1: LOOP AT <ITAB> INTO <WA> .

ENDLOOP.

Syntax2: LOOP AT <ITAB> INTO <WA> WHERE <FIELDS1> =

<VALUE> .

ENDLOOP.

Syntax3: LOOP AT <ITAB> INTO <WA> FROM <INDEX1> TO

<INDEX2> .

ENDLOOP.

Using MODIFY in SAP ABAP

MODIFY is used to modify single or multiple internal table records based on condition

TRANSPORTING is a keyword which is used to specify list of fields to be modified instead of all fields.

```
Syntax1: MODIFY <ITAB> FROM <WA> INDEX <INDEX NO> TRANSPORTING <FIELD1> <FIELD2>
```

```
Syntax1: MODIFY <ITAB> FROM <WA> TRANSPORTING <FIELD1>  
<FIELD2> WHERE <CONDITION>
```

SY-TABIX is a key word which stores the index no of currently processed record. For full details read [using sy-tabix in sap abap programs](#).

```
DATA : IT_MARA TYPE TABLE OF MARA.
```

```
DATA : WA_MARA TYPE MARA.
```

```
SELECT * FROM MARA INTO TABLE IT_MARA . " GET DATA INTO ITAB IT_MARA
```

```
WA_MARA-MTART = 'FERT'; "ASSIGN A VALUE TO WORKAREA TO MODIFY INTERNAL TABLE
```

```
MODIFY IT_MARA FROM WA_MARA INDEX SY-TABIX TRANSPORTING MTART. " NOW THE VALUE OF
```

```
FIELD MTART WILL BE MODIFIED FOR CURRENT RECORD IN IT_MARA
```

```
DATA : IT_MARA TYPE TABLE OF MARA.
```

```
DATA : WA_MARA TYPE MARA.
```

```
SELECT * FROM MARA INTO TABLE IT_MARA . " GET DATA INTO ITAB IT_MARA
```

```
WA_MARA-MTART = 'FERT'; "ASSIGN A VALUE TO WORKAREA TO MODIFY INTERNAL TABLE
```

```
MODIFY IT_MARA FROM WA_MARA TRANSPORTING MTART WHERE MATNR = '0001'. " NOW THE
```

```
VALUE OF FIELD MTART WILL BE MODIFIED WHERE MATNR = '0001' IN ITAB
```

Using DELETE in SAP ABAP

DELETE is used to delete single or multiple records from an internal table from work area based on some condition.

Syntax1: DELETE <ITAB> INDEX <INDEX NO>.

Syntax2: DELETE <ITAB> WHERE <FIELD1> = <FIELD1 VALUE>

<FIELD2> = <FIELD2 VALUE>.

DELETE IT_MARA INDEX 3. "3rd RECORD WILL BE DELETED IN IT_MARA

DELETE IT_MARA WHERE MTART = 'FERT'. "MATERIALS WITH MTART = 'FERT' WILL BE DELETED

Using DELETE ADJACENT DUPLICATES in SAP ABAP

DELETE ADJACENT DUPLICATES is used to delete delete duplicate records which are adjacent to each-other. **Pre-requisite for this is the internal table must be sorted in ascending order**

Syntax1: DELETE ADJACENT DUPLICATED FROM <ITAB> ."ADJACENT DUPLICATED WILL

BE DELETED IN INTERNAL TABLE COMPARING ALL FIELDS

Syntax2: DELETE ADJACENT DUPLICATES FROM <ITAB> COMPARING <FIELD1>

<FIELD2> . "ADJACENT DUPLICATES WILL BE DELETED COMPARING SPECIFIED FIELDS

SORT IT_MARA ASCENDING.

DELETE ADJACENT DUPLICATES FROM IT_MARA . "3rd RECORD WILL BE DELETED IN IT_MARA

SORT IT_MARA ASCENDING.

DELETE ADJACENT DUPLICATES IT_MARA COMPARING MATR, MTART. "DUPLICATES WILL BE

DELETED BY COMPARING MATNR AND MTART

Using CLEAR, REFRESH, FREE in SAP ABAP

CLEAR is used to clear a value in a work area or in a variable.

REFRESH is used to clear all values in a internal table.

FREE is used to clear (free) memory of a internal table or work area. We all know when ever we declare a internal table or work area, 8kb memory will be allocated.

Syntax clear : CLEAR <WA> "CLEAR WORK AREA OR VARIABLE

Syntax REFRESH : REFRESH <ITAB> "CLEAR ALL RECORDS OF INTERNAL TABLE BUT

MEMORY WILL BE THERE

Syntax FREE : FREE <WA> "FREE INTERNAL TABLE MEMORY

CLEAR WA_MARA.

REFRESH IT_MARA.

FREE IT_MARA.

Using APPEND LINES OF in SAP ABAP

APPEND LINES OF is used to append multiple records to an internal table from another internal table .

Syntax : APPEND LINES OF <ITAB1> FROM <index no> TO <index no2>

TO <ITAB2>.

DATA : IT_MARA TYPE TABLE OF MARA. "FIRST INTERNAL TABLE

DATA : IT_MARA1 TYPE TABLE OF MARA. "SECOND INTERNAL TABLE

APPEND LINES OF IT_MARA FROM 3 TO 5 TO IT_MARA1 . "DATA IN IT_MARA WILL BE APPENDED

TO IT_MARA1 FROM INDEX 3 TO INDEX 5 .

Using INSERT LINES OF in SAP ABAP

INSERT LINES OF is used to INSERT multiple records to an internal table from another internal table at specified location .

Syntax : INSERT LINES OF <ITAB1> FROM <index no> TO <index no2>

INTO <ITAB2> INDEX <index no>.

DATA : IT_MARA TYPE TABLE OF MARA. "FIRST INTERNAL TABLE

DATA : IT_MARA1 TYPE TABLE OF MARA. "SECOND INTERNAL TABLE

INSERT LINES OF IT_MARA FROM 3 TO 5 INTO IT_MARA1 INDEX 3 . "DATA IN IT_MARA WILL
BE INSERTED INTO IT_MARA1 FROM INDEX 3 TO INDEX 5 AT INDEX 3 LOCATION .

Using MOVE in SAP ABAP

MOVE keyword is used to move one internal table data to another.

Syntax : <ITAB2[]> = <ITAB1[]> . "Move ITAB1 to ITAB2

Using COLLECT in SAP ABAP

COLLECT is similar to APPEND, the difference is it (COLLECT) will check whether the work area record already exists with the same key (only C, D, N, T), if exists it will add numerical fields (sum) to the existing record, if work area record does not exist it will append a new record .

Syntax: COLLECT <WA> INTO <ITAB>.