# CICS - PSEUDO PROGRAMMING

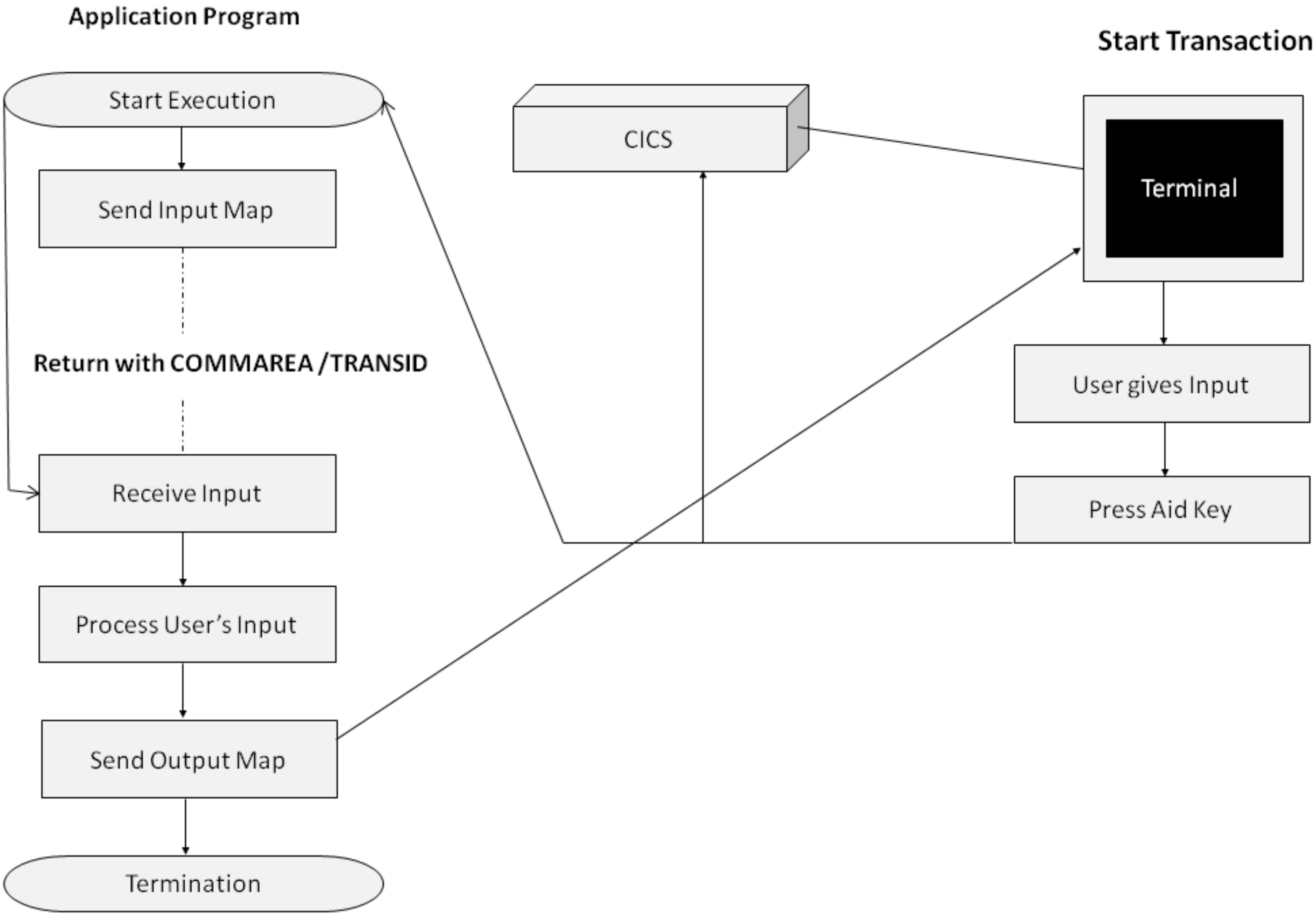
http://www.tutorialspoint.com/cics/cics_pseudo_programming.htm

As of now, we have covered Non-conversion and conversion programs. Conversion programs have major drawback as the think time is considerably high. So due to this pseudo conversion programming came into the picture. We will now discuss more about pseudo conversion programs.

## Pseudo Conversion Program

Following is the sequence of events which take place in pseudo conversion program:

- The system sends a message to the screen and terminates the transaction, specifying the transaction to be started when the user input is received.
- The system allocates the resources used by this transaction to other transactions running in the system. So we can utilize the resources in pseudo conversion program till the user gives the input.
- The system polls the terminal input at regular intervals of time. When the input is received, it is processed and the output is displayed.
- The application program is loaded into the main storage when needed and released when not in use.



## Pseudo Conversion Techniques

The important thing in pseudo-conversation is passing of data between every task. We will discuss about the techniques for passing data.

## COMMAREA

COMMAREA is known as communication area. COMMAREA is used to pass data between tasks. Following example shows how to pass COMMAREA where WS-COMMAREA and WS-COMMAREA-LENGTH is declared in Working Storage Section:

```
EXEC CICS RETURN
        TRANSID ('transaction-id')
        COMMAREA (WS-COMMAREA)
        LENGTH  (WS-COMMAREA-LENGTH)
END-EXEC.
```

## DFHCOMMAREA

The fundamental explanation of DFHCOMMAREA is as follows:

- DFHCOMMAREA is special memory area which is provided by CICS to every task.
- It is used to pass data from one program to another program. The programs can exists in the same transaction or in different transaction also.
- It is declared in the Linkage Section of the program at 01 level.
- It should have same picture clause as WS-COMMAREA.
- Data can be moved back from DFHCOMMAREA to WS-COMMAREA using a MOVE statement. MOVE DFHCOMMAREA TO WS-COMMAREA.

### Example

After sending the map, the task ends and waits for user response. At this stage the data needs to be saved, because though the task has ended, the transaction has not. When this transaction is to be resumed it would require the prior status of the task. User enters the input. This now has to be received by the RECEIVE MAP command and then validated. Following example shows how to declare COMMAREA and DFHCOMMAREA:

```
WORKING-STORAGE SECTION.
01 WS-COMMAREA.
   05 WS-DATA PIC X(10).

LINKAGE SECTION.
01 DFHCOMMAREA.
   05 LK-DATA PIC X(10).
```

## Pseudo Code

Following is the logic of pseudo code which we use in pseudo programming:

```
MOVE DFHCOMMAREA TO WS-COMMAREA
IF EIBCALEN = 0
    STEP1: SEND MAP
    STEP2: MOVE  to WS-COMMAREA
    STEP3: ISSUE CONDITIONAL RETURN
ELSE
  IF WS-COMMAREA =
    STEP4: RECEIVE MAP
    STEP5: PROCESS DATA
    STEP6: SEND OUTPUT MAP
    STEP7: MOVE  to WS-COMMAREA
    STEP8: ISSUE CONDITIONAL RETURN
  END-IF
END-IF
STEP8: REPEAT STEP3 TO STEP7 UNTIL EXIT
```

### Example

Following example shows a pseudo conversion program:

```
****************************************************************************
* PROGRAM TO DEMONSTRATE PSEUDO-CONVERSATION                      *
****************************************************************************
 IDENTIFICATION DIVISION.
 PROGRAM-ID. HELLO.
 DATA DIVISION.
 WORKING-STORAGE SECTION.
 01 WS-MESSAGE          PIC X(30).
 01 WS-COMMAREA         PIC X(10) VALUE SPACES.
 LINKAGE SECTION.
 01 DFHCOMMAREA         PIC X(10).
 PROCEDURE DIVISION.
     MOVE DFHCOMMAREA TO WS-COMMAREA
     IF  WS-COMMAREA  =  SPACES
****************************************************************************
* TRANSACTION GETTING EXECUTED FOR THE FIRST TIME                *
****************************************************************************
         MOVE 'HELLO' TO WS-MESSAGE
         EXEC CICS SEND TEXT
              FROM (WS-MESSAGE)
         END-EXEC
         MOVE 'FIRST' TO WS-COMMAREA
****************************************************************************
* TASK ENDS AS A RESULT OF RETURN. IF AID KEY PRESSED, NEXT      *
* TRANSACTION SHOULD BE TP002. DATA PASSED FROM WS-COMMAREA TO   *
* DFHCOMMAREA                                                     *
****************************************************************************
         EXEC CICS RETURN
             TRANSID('TP002')
             COMMAREA(WS-COMMAREA)
         END-EXEC
****************************************************************************
* IF  COMMAREA IS NOT EMPTY , THEN TP002 HAS BEEN EXECUTED ONCE  *
* ALREADY, USER INTERACTION IS FACILITATED BY RECEIVE            *
****************************************************************************
     ELSE
         EXEC CICS RECEIVE
              INTO(WS-MESSAGE)
         END-EXEC
         EXEC CICS SEND TEXT
              FROM (WS-MESSAGE)
         END-EXEC
****************************************************************************
* TASK ENDS AS A RESULT OF RETURN, NO NEXT TRANSACTION SPECIFIED *
* TO BE EXECUTED                                                  *
****************************************************************************
         EXEC CICS RETURN
         END-EXEC
     END-IF.
```

## Advantages of Pseudo Conversion

Following are the advantages of pseudo conversion:

- The resources are best utilized. Resources are released as soon as the program is suspended temporarily.
- It looks as if it is in conversational mode.
- It has better response time.

## Return Statements

Following are the two types of return statements which are used in CICS:

## Return-1

When the below unconditional return statement is issued the task and transaction *program* is terminated.

```
EXEC CICS RETURN
END-EXEC.
```

## Return-2

When the below conditional return i.e return with TRANSID statement is issued, the control returns to CICS with the next transid to be executed. The next transaction, starts when the user presses an AID key.

```
EXEC CICS RETURN
       TRANSID ('trans-id')
       [COMMAREA(WS-COMMAREA)]
END-EXEC.
```