

COBOL

Linkage Section

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<https://github.com/KarenArteagaMendoza/COBOL-ProgrammingLanguages>

WHAT IS THE LINKAGE SECTION?

Part of the Data Division

Used in subprograms (programs that are called by others)

Declares data items that will be received from a CALL

USING

Main Program → Subprogram

STRUCTURE OF A SUBPROGRAM WITH LINKAGE

VARIABLES IN THE LINKAGE SECTION MUST BE

- Declared just like in Working-Storage
- Listed in the PROCEDURE DIVISION USING clause to be usable

```
DATA DIVISION.
```

```
LINKAGE SECTION.
```

```
01 CUSTOMER-NAME    PIC X(30).
```

```
01 CUSTOMER-ID      PIC 9(5).
```

```
PROCEDURE DIVISION USING CUSTOMER-NAME CUSTOMER-ID.
```

CALLING A SUBPROGRAM WITH CALL USING

```
WORKING-STORAGE SECTION.
```

```
01 WS-NAME  PIC X(30) VALUE "Alice".
```

```
01 WS-ID    PIC 9(5)  VALUE 12345.
```

```
CALL 'PrintCustomer' USING WS-NAME, WS-ID.
```

CALL sends data by reference

The order matters: arguments must match the subprogram's USING list

FULL EXAMPLE: CALLER + CALLEE

MAIN PROGRAM: CALLER

```
CALL 'PrintCustomer' USING CUSTOMER-NAME, CUSTOMER-ID.
```

TIP: Use the same structure and types on both sides to avoid runtime errors.

SUBPROGRAM: CALLEE

```
IDENTIFICATION DIVISION.  
PROGRAM-ID. PrintCustomer.
```

```
DATA DIVISION.
```

```
LINKAGE SECTION.
```

```
01 CUSTOMER-NAME PIC X(30).
```

```
01 CUSTOMER-ID PIC 9(5).
```

```
PROCEDURE DIVISION USING CUSTOMER-NAME CUSTOMER-ID.
```

```
    DISPLAY "Customer: " CUSTOMER-NAME
```

```
    DISPLAY "ID: " CUSTOMER-ID
```

```
    STOP RUN.
```

QUICK QUIZ: LINKAGE LOGIC

1. What happens if the USING variables don't match in number or type?

- a) Compiler fixes it
- b) Runtime error or unpredictable behavior

2. True or False: You use the Linkage Section in every COBOL program.

3. In the CALL statement, what keyword sends values to the subprogram?

QUICK QUIZ: LINKAGE LOGIC

1. What happens if the **USING** variables don't match in number or type?

- a) Compiler fixes it
- b) Runtime error or unpredictable behavior

B: COBOL passes parameters by reference, so mismatches in number, order, or type can cause data corruption or crashes.

2. True or False: You use the Linkage Section in every COBOL program.

FALSE: The Linkage Section is only used in called (sub)programs, not in standalone or main programs.

3. In the **CALL** statement, what keyword sends values to the subprogram?

USING