# Example of Data Structure used in Two Pass Macroprocessor

**Sample Program**

```
PRG         START           0
            MACRO
&LAB        INCR            &ARG1, &ARG2, &ARG3
&LAB        A               1, &ARG1
            A               2, &ARG2
            A               3, &ARG3
            MEND

LOOP1       INCR            DATA1, DATA2, DATA3

DATA1       DC              F'5'
DATA2       DC              F'10'
DATA3       DC              F'15'
```

**Pass 1 Output:**

```
PRG         START           0

LOOP1       INCR        DATA1, DATA2, DATA3

DATA1           DC          F'5'
DATA2           DC          F'10'
DATA3           DC          F'15'
```

**Pass 1 Data Structures/Database used:**

**1. Macro Definition Table (MDT)**

| Index | Name | | |
|-------|------|------|------|
| 1 | &LAB | INCR | &ARG1, &ARG2, &ARG3 |
| 2 | #0 | A | 1, #1 |
| 3 | | A | 2, #2 |
| 4 | | A | 3, #3 |
| 5 | | MEND | |

**2. Macro Name Table (MNT)**

| Index | Name | MDT Index |
|-------|------|-----------|
| 1 | INCR | 1 |

### 3. Argument List Array (ALA)

| Index | Arguments |
|-------|-----------|
| 0     |           |
| 1     |           |
| 2     |           |
| 3     |           |

**Pass 2 Output:**

| PRG   | START | 0         |
|-------|-------|-----------|
| LOOP1 | A     | 1, DATA1  |
|       | A     | 2, DATA2  |
|       | A     | 3, DATA3  |
| DATA1 | DC    | F'5'      |
| DATA2 | DC    | F'10'     |
| DATA3 | DC    | F'15'     |

### 1. Argument List Array (ALA)

| Index | Arguments |
|-------|-----------|
| 0     | LOOP1     |
| 1     | DATA1     |
| 2     | DATA2     |
| 3     | DATA3     |