

```
/*
```

```
=====
Module-3
Assignment
=====
```

```
1. Write a program using Arithmetic operators.
=====
```

```
*/
```

```
/* SOLUTION */
```

```
data work.data2;
```

```
add_res = 100 + 20; /*Addition*/
```

```
sub_res = 225 - 180; /*Subtraction*/
```

```
mul_res = 10 * 50; /*Multiplication*/
```

```
div_res = 24 / 8; /*Division*/
```

```
expo_res = 4 ** 2; /*Exponentiation*/
```

```
proc print data = work.data2 noobs;
```

```
run;
```

OUTPUT (1):

The screenshot shows the SAS Studio web interface. The browser address bar indicates the URL: https://odamid-apse1.oda.sas.com/SASStudio/main?locale=en_US. The interface includes a top navigation bar with 'SAS OnDemand for Academic' and 'SAS Studio' tabs, and a 'SAS Programmer' role indicator. The left sidebar, titled 'Server Files and Folders', shows a tree structure with folders like 'odaws02-apse1', 'Files (Home)', 'my_shared_file_links', 'erchetanchawla0', 'Output', 'sasuser.v94', 'sas_assignments', 'sas_submissions', 'code', 'data', 'raw_data', 'Revenue2-1.txt', and 'output'. The main workspace displays the 'RESULTS' tab for a program named '*all_assignments.sas'. It features a 'Table of Contents' section with a data table:

add_res	sub_res	mul_res	div_res	expo_res
120	45	500	3	16

The bottom status bar shows 'Messages: 5' and 'User: u58427518'.

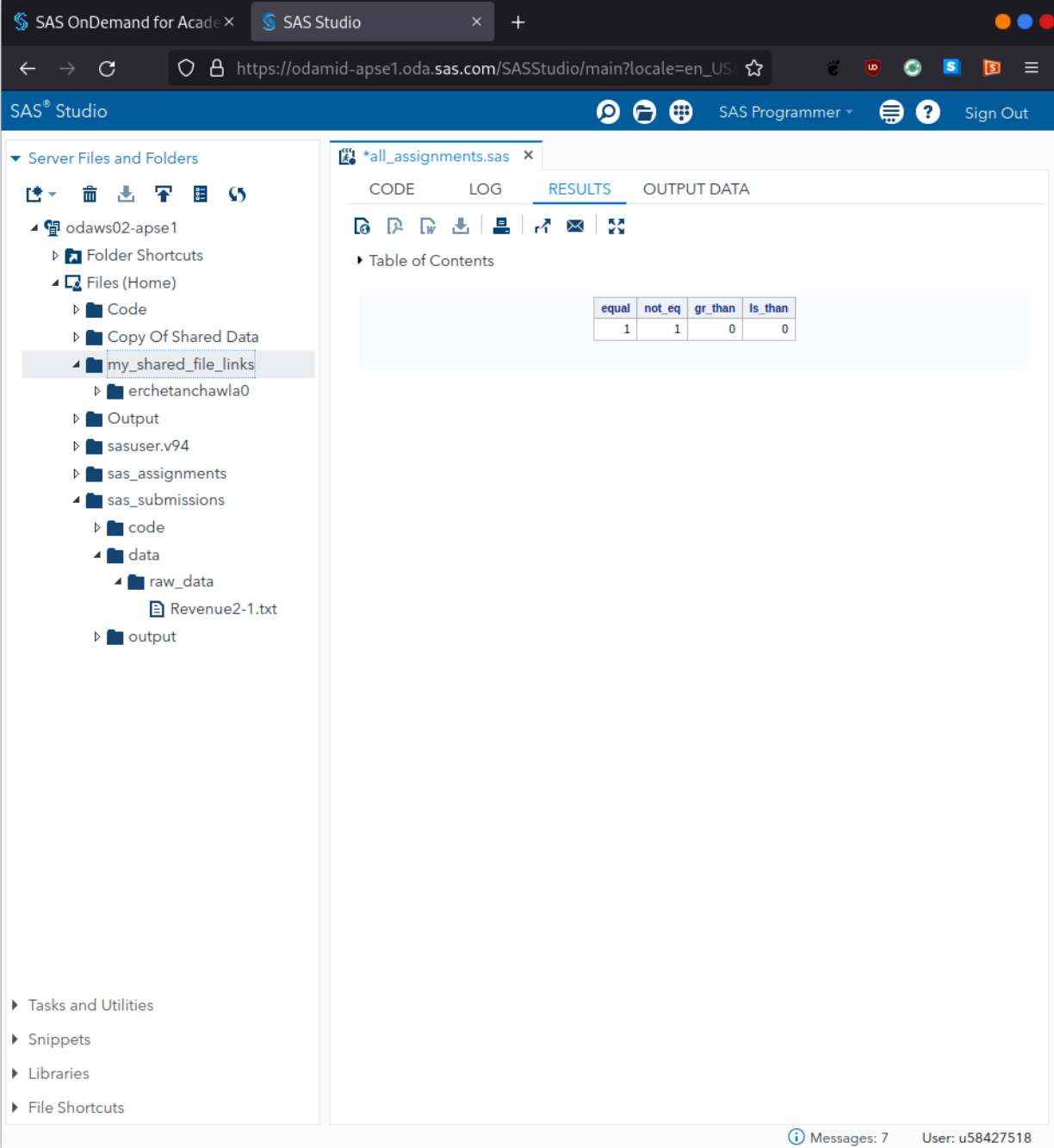
```
/*  
=====
```

2. Write a SAS program using comparision operator.

```
=====
```

```
*/  
  
/* SOLUTION */  
  
data work.data3;  
  
equal = (25 = 25); /*Equals To*/  
  
not_eq = (88 ^= 90); /*Not Equals To*/  
  
gr_than = (5 >= 8); /*Greater Than Equals To*/  
  
ls_than = (15 <= 12); /*Less Than Equals To*/  
  
proc print data = work.data3 noobs;  
  
run;
```

OUTPUT (2) :



The screenshot shows the SAS Studio web interface. The browser address bar indicates the URL: https://odamid-apse1.oda.sas.com/SASStudio/main?locale=en_US. The interface includes a top navigation bar with 'SAS Studio' and 'SAS Programmer' tabs, and a 'Sign Out' button. The left sidebar, titled 'Server Files and Folders', shows a tree structure under 'odaws02-apse1'. The 'Files (Home)' section is expanded, showing folders like 'Code', 'Copy Of Shared Data', 'my_shared_file_links' (highlighted), 'erchetanchawla0', 'Output', 'sasuser.v94', 'sas_assignments', 'sas_submissions', 'code', 'data', 'raw_data', 'Revenue2-1.txt', and 'output'. The main workspace displays the 'RESULTS' tab for a SAS program named '*all_assignments.sas'. Below the tab are icons for file operations and a 'Table of Contents' section. The table of contents shows a single table with the following data:

equal	not_eq	gr_than	ls_than
1	1	0	0

At the bottom right of the interface, there is a status bar showing 'Messages: 7' and 'User: u58427518'.

```

/*
=====
3. Explain the use of LIKE function and MOD function using SAS
program ?
=====
*/

/* SOLUTION */

/* 1. LIKE FUNCTION */
/*
--- Is used when we know only part of a string or a sub-string
--- and we need to check if its present in a record.

--- 2 wild-card-operators are used with this function:

i) '%'
--- to search any number of characters

ii) '_'
--- to search one single character
*/

/* LIKE-FUNCTION-EXAMPLE */

/* Print only those records where age is between 10 and 20 */
proc print data=sashelp.class;
var Name Age;
where Age between 10 and 20;
run;

/* Print only those records where name variable contains 'a' */
proc print data=sashelp.class;
var Name Sex Height Weight;
where Name ? 'a';
run;

/* Print only those records where name variable contains 'e'
and where there can be any number of alphabets before 'e' */
proc print data=sashelp.class;
where Name like '%e';
run;

/* Print only those records where second alphabet in name is 'a'
*/
proc print data=sashelp.class;
where Name like '_a%';
run;

```

```
/* 2. MOD FUNCTION */
```

```
/*
```

```
--- MOD function returns the remainder from the division of  
dividend  
    by divisor.
```

```
--- returns zero if the remainder is very close to zero  
--- or very close to the value of the second argument.
```

```
--- returns a null or missing value if the remainder cannot be  
computed to a
```

```
--- upto three digits or more.
```

```
*/
```

```
/* MOD FUNCTION EXAMPLE */
```

```
data work.data4;
```

```
a=mod(25,2);
```

```
proc print data=work.data4 noobs;
```

```
run;
```

OUTPUT (3-1):

The screenshot displays the SAS Studio web interface. The left sidebar shows the 'Server Files and Folders' tree, with 'my_shared_file_links' selected. The main panel shows the 'RESULTS' tab for a SAS program named 'all_assignments.sas'. A 'Table of Contents' is visible, followed by a table of 19 observations.

Obs	Name	Age
1	Alfred	14
2	Alice	13
3	Barbara	13
4	Carol	14
5	Henry	14
6	James	12
7	Jane	12
8	Janet	15
9	Jeffrey	13
10	John	12
11	Joyce	11
12	Judy	14
13	Louise	12
14	Mary	15
15	Philip	16
16	Robert	12
17	Ronald	15
18	Thomas	11
19	William	15

At the bottom right, the status bar indicates 'Messages: 8' and 'User: u58427518'.

OUTPUT (3-2):

The screenshot shows the SAS Studio web interface. The left sidebar displays the 'Server Files and Folders' tree, with 'my_shared_file_links' selected under 'Files (Home)'. The main area shows the 'RESULTS' tab for the program '*all_assignments.sas'. Below the 'Table of Contents' header, a data table is displayed with the following content:

Obs	Name	Sex	Height	Weight
3	Barbara	F	65.3	98.0
4	Carol	F	62.8	102.5
6	James	M	57.3	83.0
7	Jane	F	59.8	84.5
8	Janet	F	62.5	112.5
14	Mary	F	66.5	112.0
17	Ronald	M	67.0	133.0
18	Thomas	M	57.5	85.0
19	William	M	66.5	112.0

At the bottom right of the interface, the status bar shows 'Messages: 9' and 'User: u58427518'.

OUTPUT (3-3):

The screenshot displays the SAS Studio web interface. The left sidebar shows the 'Server Files and Folders' tree, with 'my_shared_file_links' selected. The main panel shows the 'RESULTS' tab for a file named '*all_assignments.sas'. Below the 'Table of Contents' header, a data table is displayed with the following content:

Obs	Name	Sex	Age	Height	Weight
2	Alice	F	13	56.5	84.0
7	Jane	F	12	59.8	84.5
11	Joyce	F	11	51.3	50.5
13	Louise	F	12	56.3	77.0

At the bottom right of the interface, the status bar indicates 'Messages: 10' and 'User: u58427518'.

OUTPUT (3-4):

The screenshot displays the SAS Studio web interface. The left sidebar shows the 'Server Files and Folders' tree, with 'my_shared_file_links' selected. The main panel shows the 'RESULTS' tab for the file '*all_assignments.sas'. It includes a 'Table of Contents' section and a data table with 6 columns: Obs, Name, Sex, Age, Height, and Weight. The table contains 6 rows of data. The bottom status bar indicates 'Messages: 11' and 'User: u58427518'.

Table of Contents

Obs	Name	Sex	Age	Height	Weight
3	Barbara	F	13	65.3	98.0
4	Carol	F	14	62.8	102.5
6	James	M	12	57.3	83.0
7	Jane	F	12	59.8	84.5
8	Janet	F	15	62.5	112.5
14	Mary	F	15	66.5	112.0

OUTPUT (3-5):

The screenshot displays the SAS Studio web interface. The browser address bar shows the URL `https://odamid-apse1.oda.sas.com/SASStudio/main?locale=en_US`. The interface is divided into several sections:

- Left Panel (Server Files and Folders):** A tree view showing the file structure. The folder `my_shared_file_links` is selected. Below it, the folder `erchetanchawla0` is visible. Other folders include `odaws02-apse1`, `Folder Shortcuts`, `Files (Home)`, `Code`, `Copy Of Shared Data`, `Output`, `sasuser.v94`, `sas_assignments`, `sas_submissions`, `code`, `data`, `raw_data`, `Revenue2-1.txt`, and `output`.
- Top Panel:** Contains tabs for `CODE`, `LOG`, `RESULTS` (active), and `OUTPUT DATA`. Below the tabs are icons for file operations (new, open, save, print, etc.).
- Right Panel (RESULTS):** Displays a `Table of Contents` with a single entry labeled `1`.
- Bottom Panel:** Includes a status bar at the bottom right showing `Messages: 13` and `User: u58427518`.

```
/*
```

```
=====
```

```
4. Write a program using BETWEEN-AND function.
```

```
=====
```

```
*/
```

```
/* SOLUTION */
```

```
proc print data=sashelp.class;
```

```
var Name Age;
```

```
where Age BETWEEN 10 AND 20;
```

```
run;
```

OUTPUT (4):

The screenshot displays the SAS Studio web interface. The left sidebar shows the 'Server Files and Folders' tree, with 'my_shared_file_links' selected. The main panel shows the 'all_assignments.sas' file with the 'RESULTS' tab active, displaying a 'Table of Contents' table.

Obs	Name	Age
1	Alfred	14
2	Alice	13
3	Barbara	13
4	Carol	14
5	Henry	14
6	James	12
7	Jane	12
8	Janet	15
9	Jeffrey	13
10	John	12
11	Joyce	11
12	Judy	14
13	Louise	12
14	Mary	15
15	Philip	16
16	Robert	12
17	Ronald	15
18	Thomas	11
19	William	15

At the bottom right, the status bar shows 'Messages: 14' and 'User: u58427518'.