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Module-12
Assignment
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1. Explain SAS Array Processing using SAS program?
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/* SOLUTION */
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/* ===== SAS ARRAY PROCESSING =====
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--- Arrays are groups of same-data-type same-length variables
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--- They are used to perform mass operations on variables
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--- Array Processing:
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--- Arrays contain homogeneous variables
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--- Which makes it easier to perform operations on those variables
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--- Since all the variables are of same data-type and same length
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--- If a task is to be performed on a certain number of variables  
or all the variables in a data-set, an array is created
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--- Only the homogeneity condition regarding data-type and length  
must be met
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--- Once the array is formed with such variables, loops can be  
used
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--- By using do-loop or (while/until) loops we can perform  
repetitive tasks
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/* In the below example:

--- An array of days-in-a-week is created.
--- Starting from Monday till Sunday as variables.

--- There is only one row of observations, containing temperature
for each day of the week.

--- The goal is to convert the temperature from degrees farenheit
to degrees celcius.

--- As the operation has to be performed for all the days of the
week, an array is the best choice.
--- Since, all the variables are of the same data-type (i.e.
numeric) containing data with same length (i.e.2).
--- That satisfies the homogeneity condition as specified above.

--- In order to convert the unit of temperature from fareheit to
celcius, certain calculation has to be performed,
for temperature value of each day of the week.
--- The calculation can be performed using a do-loop.

--- The do-loop can perform the same calculation on all the
elements of the array.
--- In turn saving the effort required to perform the opearation
individually on each day's temperature.

--- That clarifies the array-processing and provides proof as to
how arrays can be so much efficient in coding.
*/

data work.temp;

input mon tue wed thu fri sat sun;
datalines;
98 97 96 94 95 98 99
;

data work.temp_array(drop=day);

set temp;

array week{7} mon tue wed thu fri sat sun;
do day= 1 to dim(week);
    week{day}=week{day}-26;
end;

proc print data=work.temp_array noobs;

run;

```

OUTPUT (1):

The screenshot displays the SAS Studio web interface. The left sidebar, titled 'Server Files and Folders', shows a tree structure under 'odaws02-apse1'. The 'output' folder is selected. The main workspace shows the 'RESULTS' tab for a program named '*all_assignments.sas'. Below the tab bar, there is a 'Table of Contents' section containing a data table.

mon	tue	wed	thu	fri	sat	sun
72	71	70	68	69	72	73

At the bottom right of the interface, a status bar indicates 'Messages: 22' and 'User: u58427518'.