EXPLANATION OF BASH SCRIPT

6 sed commands are used in this script. These commands use the -i and -E flags, the -i flag indicates that the changes made to rectangle.txt will be permanent. The -E flag enables the use of extended regular expression in the commands. The $ value represent the value that matches the regular expression. The | character is used as an alternative delimiter for sed to make it easier to read the sed commands as escape characters are used in the commands. The following sections describe in detail the sequential steps involved in the bash script.

## BACKUP FILES

As the script will modify the rectangle.txt the file is copied to rectangle.bak to be restored at the end of the script.

## REMOVE HEADERS FROM RECTANGLE.TXT

The next step is to execute the sed command which strips the first line of the rectangle.txt which contains the headers for the data. The command used is:

sed -i ‘1d’ rectangle.txt

The use of the ‘1d’ deletes the first line from the source file, in this case the column headers.

## PROCESSING THE DATA

For processing 5 sed commands are used, they are executed separately to enable the ‘,’ to be edited individually.

The first sed command formats the name values:

sed -i -E “s|^(Rec)[0-9]+|Name: &|” rectangle.txt

This command uses the substitution argument to find a pattern match for the regular expression ^(Rec)[0-9]+ This pattern finds the values Rec0 to Rec999… at the beginning of the line and then prepends the string with ‘Name: ‘

The second command formats the height values:

sed -i -E “s|\,|\tHeight:\t|” rectangle.txt

The command searches for the first instance of ‘,’ character and then replace that character with the string \tHeight:\t. The ‘\t’ is an escaped tab space that ensures that the spacing around the name value is evenly spaced.

The 3rd to 5th sed commands are almost identical to the previous command, the difference is what the comma is replaced with (Height, Width and Area).

The final sed command is:

sed -i -E “s|\,|\tHeight: |” rectangle.txt

The command differs from the previous commands in that only one \t is used rather than two.

## SCRIPT ‘HOUSEKEEPING’

In this section all the ‘loose ends’ are finalised the commands used are:

cp rectangle.txt rectangle\_f.txt

This command copies the modified rectangle.txt into the final rectangle\_f.txt file.

cp rectangle.bak rectangle.txt

This command restores the rectangle.txt file back to its pre-script state by overwriting rectangle.txt with the pre-script backup file rectangle.bak.

rm rectangle.bak

This removes the pre-script backup to restore the directory back to its pre-script state.