

Program Code:

```
#!/bin/bash
#Created by Rohit Karunakaran

show_help()
{
    echo "
Scientific calculator implementation using bash.
Enter 'help' to show this menu.
Enter quit to exit

a+b    Add a and b
a-b    Subtract b from a
a*b    Multiply a and b
a/b    Divide a and b
a^b    Exponential, Raise a to the power of b
a%b    Modulo operation, Remainder of a/b

sin(x)  sine of x, x is in radians
cos(x)  cosine of x, x in radians
log(x)  natural log of x
exp(x)  raise e to the power of x
sqrt(x) Find the square root of x"
}

show_help

echo -n "Sci_calculator>> "

while read command args
do
    case $command
    in
        quit|exit) exit 0 ;;
        help)      show_help ;;
        *)         awk "BEGIN{print $command}" ;;
    esac

    echo -n "Sci_calculator>> "
done
```

Screenshots:

```
rohit@iris:/home/shared/Files/Programing/Bash/CSL204/Experiment 4$ ./scientific_calc.sh

Scientific calcaultor implementaion using bash.
Enter 'help' to show this menu.
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Sci_calculator>> 45+32
77
Sci_calculator>> 30/12
2.5
Sci_calculator>> sin(45)
0.850904
Sci_calculator>> cos(0)
1
Sci_calculator>> log(45)
3.80666
Sci_calculator>> log(exp(32))
32
Sci_calculator>> sqrt(64)
8
Sci_calculator>> 4^2
16
Sci_calculator>> 16%5
1
Sci_calculator>> exit
rohit@iris:/home/shared/Files/Programing/Bash/CSL204/Experiment 4$
```