

BCA-3

SCS291: Linux and Shell Programming Lab

Linux shell scripts

a) Factorial of Numbers

```
#!/bin/bash
```

```
echo "Enter a number:"
```

```
read num
```

```
fact=1
```

```
for ((i=1; i<=num; i++))
```

```
do
```

```
    fact=$((fact * i))
```

```
done
```

```
echo "Factorial of $num is $fact"
```

b) Even/Odd Numbers

```
#!/bin/bash
```

```
echo "Enter a number:"
```

```
read num
```

```
if (( num % 2 == 0 ))
```

```
then
```

```
    echo "$num is Even"
```

```
else
```

```
    echo "$num is Odd"
```

```
fi
```

c) Fibonacci Series

```
#!/bin/bash
```

```
echo "Enter the number of terms:"
```

```
read n
```

```
a=0
```

```
b=1
```

```
echo "Fibonacci series:"
```

```
for ((i=0; i<n; i++))
```

```
do
```

```
    echo -n "$a "
```

```
    fn=$((a + b))
```

```
    a=$b
```

```
    b=$fn
```

```
done
```

```
echo
```

d) Prime Numbers

```
#!/bin/bash
```

```
echo "Enter a number:"
```

```
read num
```

```
is_prime=1
```

```
for ((i=2; i*i<=num; i++))
```

```
do
```

```
    if ((num % i == 0))
```

```
    then
```

```
        is_prime=0
```

```
        break
```

```
    fi
```

```

done

if ((num > 1 && is_prime == 1))
then

    echo "$num is a Prime number"

else

    echo "$num is not a Prime number"

fi

```

```

e) Arrange Numbers

#!/bin/bash

echo "Enter numbers separated by
space:"

read -a arr

sorted=$(echo ${arr[@]} | tr ' ' '\n' | sort -
n))

echo "Sorted Numbers: ${sorted[@]}"

```

```

f) Reverse a Number

#!/bin/bash

echo "Enter a number:"

read num

rev=0

while [ $num -gt 0 ]
do

    rem=$((num % 10))

    rev=$((rev * 10 + rem))

    num=$((num / 10))

done

echo "Reversed number is $rev"

```

g) Lower Case to Upper Case

```

#!/bin/bash

echo "Enter a string:"

read str

echo "Upper case: ${str^^}"

```

h) Greatest of Three Numbers

```

#!/bin/bash

echo "Enter three numbers:"

read a b c

if ((a > b && a > c))
then

    echo "$a is the greatest"

elif ((b > c))
then

    echo "$b is the greatest"

else

    echo "$c is the greatest"

fi

```

To Write a Program to Use Applet
Function to Draw the Shape of a Car

To draw a car using an applet, you'll
need Java.

```
import java.applet.Applet;
import java.awt.*;

public class CarShape extends Applet {
    public void paint(Graphics g) {
        // Body
        g.setColor(Color.BLUE);
        g.fillRect(50, 100, 200, 50);

        // Roof
        g.fillRect(90, 70, 120, 30);

        // Wheels
        g.setColor(Color.BLACK);
        g.fillOval(60, 150, 40, 40);
        g.fillOval(200, 150, 40, 40);
    }
}
```

To run this applet:

1. Save the file as “CarShape.java”.
2. Compile using “javac CarShape.java”.
3. Run with an applet viewer:
“appletviewer CarShape.java”.