2. What is the difference between soft and hard links?
3. Explain about loops and what are the loops available in LINUX?
4. What are absolute and relative paths.
5. How to debug a shell script.

Student Work Area

Algorithm/Flowchart/Code/Sample Outputs/Question Bank Solutions

a)

main.bash

```bash
#!/bin/bash

# Read number of terms from user
echo "Enter the number of terms for the Fibonacci series: "
read n

# Initialize the first two terms of the Fibonacci series
a=0
b=1

# Check if the user input is valid
if [ $n -le 0 ]; then
    echo "Please enter a positive integer."
else
    echo "The Fibonacci series is:"

    # Loop to print the Fibonacci series
    for (( i=0; i<n; i++ ))
    do
        echo -n "$a "
        # Calculate the next term in the Fibonacci series
        fn=$((a + b))
        a=$b
        b=$fn
    done
    echo # Move to a new line after printing the series
fi
```

b)

main.bash

```bash
#!/bin/bash

# Read three numbers from the user
echo "Enter first number: "
read num1
echo "Enter second number: "
read num2
echo "Enter third number: "
read num3

# Compare the numbers and find the largest
if [ $num1 -ge $num2 ] && [ $num1 -ge $num3 ]; then
    echo "The largest number is: $num1"
elif [ $num2 -ge $num1 ] && [ $num2 -ge $num3 ]; then
    echo "The largest number is: $num2"
else
    echo "The largest number is: $num3"
fi
```

c)

main.bash

```bash
#!/bin/bash

# Read the value of N (number of elements)
echo "Enter the number of elements (N): "
read N

# Initialize sum to 0
sum=0

# Loop to read N numbers from the user and calculate the sum
echo "Enter the numbers:"
for (( i=1; i<=N; i++ ))
do
    read num
    sum=$((sum + num))
done

# Calculate the average
average=$(echo "scale=2; $sum / $N" | bc)

# Display the average
echo "The average of the $N numbers is: $average"
```

Answer – 1: Use multi-line comments in shell script:

: <<EOF comment line 1 comment line 2 ... EOF

Or

#

comment line 1

comment line 2

...

Answer – 2: In Linux, links are used to create multiple references to a file. The key differences between soft and hard links are: