

1.Source Code:

```
#!/bin/bash

check_prime() {
    n=$1
    if [ $n -le 1 ]; then
        echo "Not Prime"
        return
    fi
    for ((i=2;i<=n/2;i++))
    do
        if [ $((n%i)) -eq 0 ]; then
            echo "Not Prime"
            return
        fi
    done
    echo "Prime"
}

check_leap() {
    y=$1
    if (( (y%400==0) || (y%4==0 && y%100!=0) )); then
        echo "Leap Year"
    else
        echo "Not Leap Year"
    fi
}
```

```
sum_series() {  
    n=$1  
    sum=0  
    for ((i=1;i<=n;i++))  
    do  
        sum=$((sum+i))  
    done  
    echo "Sum = $sum"  
}
```

```
read -p "Enter a number: " num
```

```
while true
```

```
do
```

```
    echo "----- MENU -----"
```

```
    echo "1. Check Prime"
```

```
    echo "2. Check Leap Year"
```

```
    echo "3. Print Sum of Series (1 to n)"
```

```
    echo "4. Exit"
```

```
    read -p "Choose option: " ch
```

```
case $ch in
```

```
    1) check_prime $num ;;
```

```
    2) check_leap $num ;;
```

```
    3) sum_series $num ;;
```

```
4) echo "Exiting..."; exit ;;
*) echo "Invalid choice" ;;
esac
done
```

2.Source Code:

```
#!/bin/bash

read -p "Enter starting year: " start
read -p "Enter ending year: " end

count=0
echo "Leap years between $start and $end:"

for ((year=start;year<=end;year++))
do
    if (( (year%400==0) || (year%4==0 && year%100!=0) )); then
        echo $year
        count=$((count+1))
    fi
done

echo "Total Leap Years = $count"
```

3.Source Code:

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

```
pass=0
```

```
fail=0
```

```
read -p "Enter Student ID: " sid
```

```
read -p "Enter marks of Subject 1: " m1
```

```
read -p "Enter marks of Subject 2: " m2
```

```
read -p "Enter marks of Subject 3: " m3
```

```
total=$((m1+m2+m3))
```

```
percent=$((total*100/300))
```

```
if [ $percent -ge 40 ]; then
```

```
    grade="PASS"
```

```
    pass=1
```

```
else
```

```
    grade="FAIL"
```

```
    fail=1
```

```
fi
```

```
echo "----- RESULT SUMMARY -----"
```

```
echo "Student ID: $sid"
```

```
echo "Total Marks: $total / 300"
```

```
echo "Percentage: $percent% "
```

```
echo "Grade: $grade"
```

```
echo "Total Pass: $pass"
```

```
echo "Total Fail: $fail"
```