Shell Scripting – Lab Exercises with Solutions

Session 6 – Basics & Automation

Lab 1: Swapping Two Variables

```
#!/bin/bash
echo -n "Enter value for A and B: "
read a b
t=$a
a=$b
b=$t
echo "Values after Swapping:"
echo "A = $a, B = $b"

or
#!/bin/bash
echo -n "Enter value for A and B: "
read a b
echo "Values after Swapping:"
echo "A = $b, B = $a"
```

Lab 2: Fahrenheit to Celsius

```
#!/bin/bash
echo -n "Enter Fahrenheit: "
read f
c=$(( (f - 32) * 5 / 9 ))
echo "Celsius is: $c"
```

Lab 3 Mini Calculator

```bash
#!/bin/bash
echo -n "Enter two numbers: "
read a b
echo "1. Addition"
echo "2. Subtraction"
echo "3. Multiplication"
echo "4. Division"
echo -n "Choose an option: "
read op
case $op in
  1) echo "$a + $b = $((a + b))";;
  2) echo "$a - $b = $((a - b))";;
  3) echo "$a * $b = $((a * b))";;
  4) echo "$a / $b = $((a / b))";;
  *) echo "Invalid option";;
esac
```

Lab 4 Biggest of Three Numbers

```bash
#!/bin/bash
echo -n "Enter values for A B and C: "
read a b c
if [ $a -gt $b ] && [ $a -gt $c ]; then
  echo "A is the biggest"
elif [ $b -gt $c ]; then
  echo "B is the biggest"
else
  echo "C is the biggest"
fi
```

Lab 5: Grade Determination

```bash
#!/bin/bash
echo -n "Enter your mark: "
read mark
```

```bash
if [ $mark -gt 90 ]; then
  echo "S Grade"
elif [ $mark -gt 80 ]; then
  echo "A Grade"
elif [ $mark -gt 70 ]; then
  echo "B Grade"
elif [ $mark -gt 60 ]; then
  echo "C Grade"
elif [ $mark -gt 55 ]; then
  echo "D Grade"
elif [ $mark -ge 50 ]; then
  echo "E Grade"
else
  echo "U Grade"
fi
```

Lab 6: Vowel or Consonant

```bash
#!/bin/bash
echo -n "Enter a lowercase character: "
read choice
case $choice in
  a|e|i|o|u) echo "It's a vowel";;
  *) echo "It's a consonant";;
esac
```

Lab 7: Check lines and words

```bash
#!/bin/bash
echo "Enter the file name:"
read filename
if [ -f "$filename" ]; then
  echo "Counting lines and words in '$filename'..."
  echo "Number of lines: $(wc -l < "$filename")"
  echo "Number of words: $(wc -w < "$filename")"
else
  echo "File '$filename' not found."
```

fi