

Vellore Institute of Technology
Principles of Operating Systems Lab (CBS1006)

Digital Assignment 2

Date: 11 September 2022

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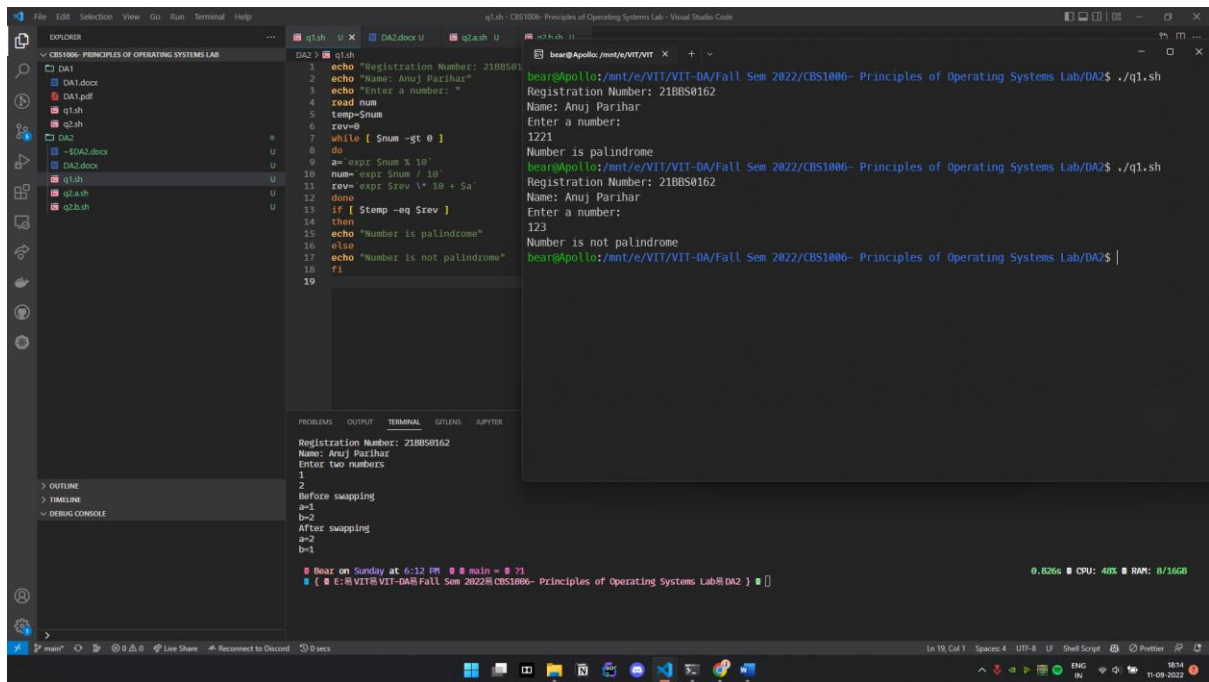
Registration Number: 21BBS0162

Question 1: . Create a shell script programme that checks whether an input number is a palindrome.

Code:

```
echo "Registration Number: 21BBS0162"
echo "Name: Anuj Parihar"
echo "Enter a number: "
read num
temp=$num
rev=0
while [ $num -gt 0 ]
do
a=`expr $num % 10`
num=`expr $num / 10`
rev=`expr $rev \* 10 + $a`
done
if [ $temp -eq $rev ]
then
echo "Number is palindrome"
else
echo "Number is not palindrome"
fi
```

Screenshot:



```
bear@Apollo:/mnt/e/VIT/VIT-DA/Fall Sem 2022/CBS1006- Principles of Operating Systems Lab/DA2$ ./q1.sh
Registration Number: 21BBS0162
Name: Anuj Parihar
Enter a number:
1221
Number is palindrome
bear@Apollo:/mnt/e/VIT/VIT-DA/Fall Sem 2022/CBS1006- Principles of Operating Systems Lab/DA2$ ./q1.sh
Registration Number: 21BBS0162
Name: Anuj Parihar
Enter a number:
123
Number is not palindrome
bear@Apollo:/mnt/e/VIT/VIT-DA/Fall Sem 2022/CBS1006- Principles of Operating Systems Lab/DA2$
```

Question 2 a: Write a shell script program to swap two numbers with third variable.

Code:

```
echo "Registration Number: 21BBS0162"
```

```
echo "Name: Anuj Parihar"
```

```
echo "Enter two numbers"
```

```
read a
```

```
read b
```

```
echo "Before swapping"
```

```
echo "a=$a"
```

```
echo "b=$b"
```

```
temp=$a
```

```
a=$b
```

```
b=$temp
```

```
echo "After swapping"
```

```
echo "a=$a"
```

```
echo "b=$b"
```

Screenshot:

The screenshot shows the Visual Studio Code interface with a C program in `q2.b.c` and its execution output in the terminal. The program prompts for a registration number, name, and two numbers, then swaps them and displays the results.

```
1 echo "Registration Number: 21BBS0162"
2 echo "Name: Anuj Parihar"
3 echo "Enter two numbers"
4 read a
5 read b
6 echo "Before swapping"
7 echo "a=$a"
8 echo "b=$b"
9 temp=$a
10 a=$b
11 b=$temp
12 echo "After swapping"
13 echo "a=$a"
14 echo "b=$b"
15
```

Terminal Output:

```
bear@Apollo:/mnt/e/VIT/VIT-DA/Fall Sem 2022/CBS1006- Principles of Operating Systems Lab/DA2$ ./q2.a.sh
Registration Number: 21BBS0162
Name: Anuj Parihar
Enter two numbers
23
446
Before swapping
a=23
b=446
After swapping
a=446
b=23
bear@Apollo:/mnt/e/VIT/VIT-DA/Fall Sem 2022/CBS1006- Principles of Operating Systems Lab/DA2$
```

This is a close-up view of the terminal window showing the execution of the program. The output matches the one in the first screenshot, showing the input values and the swapped results.

```
bear@Apollo:/mnt/e/VIT/VIT-DA/Fall Sem 2022/CBS1006- Principles of Operating Systems Lab/DA2$ ./q2.a.sh
Registration Number: 21BBS0162
Name: Anuj Parihar
Enter two numbers
23
446
Before swapping
a=23
b=446
After swapping
a=446
b=23
bear@Apollo:/mnt/e/VIT/VIT-DA/Fall Sem 2022/CBS1006- Principles of Operating Systems Lab/DA2$
```

Question 2 b: Write a shell script program to swap two numbers without third variable.

Code:

```
echo "Registration Number: 21BBS0162"
```

```
echo "Name: Anuj Parihar"
```

```
echo "Enter two numbers"
```

```
read a
```

```
read b
```

```
echo "Before swapping"
```

```
echo "a=$a"
```

```
echo "b=$b"
```

```
a=`expr $a + $b`
```

```
b=`expr $a - $b`
```

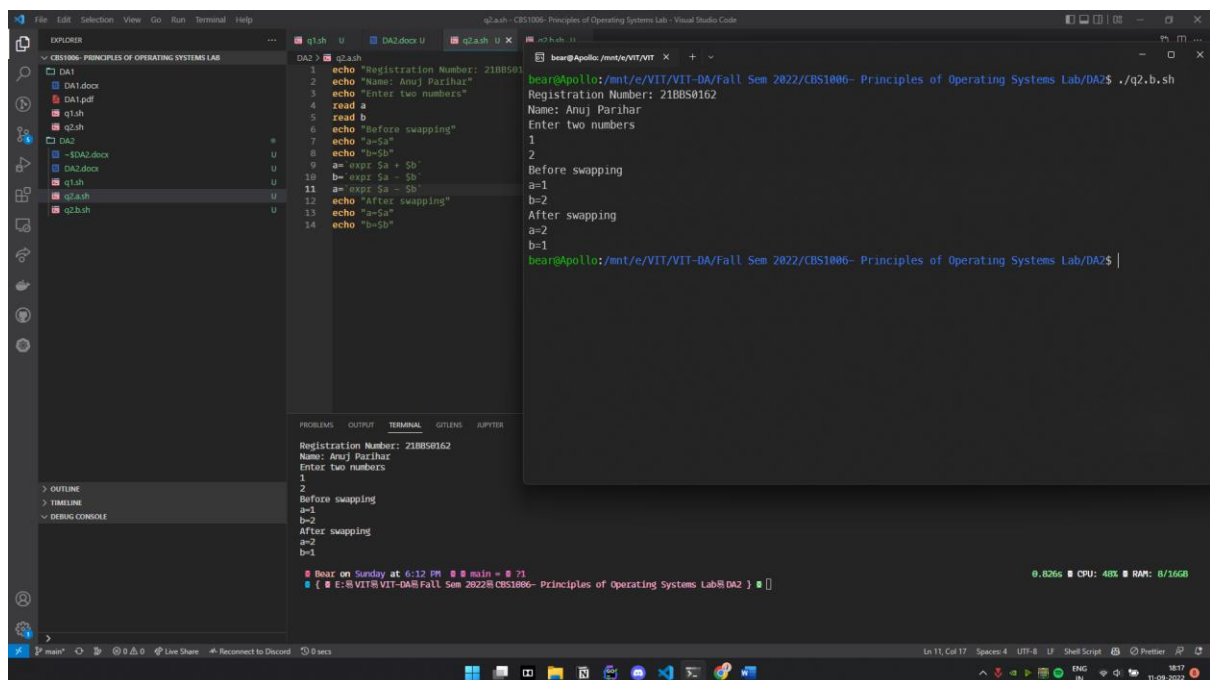
```
a=`expr $a - $b`
```

```
echo "After swapping"
```

```
echo "a=$a"
```

```
echo "b=$b"
```

Screenshot:



The screenshot displays the Visual Studio Code interface. On the left, the Explorer pane shows a project named 'CBS1006- PRINCIPLES OF OPERATING SYSTEMS LAB' with files DA1, DA1.docx, DA1.pdf, q1.sh, q2.sh, DA2, -SDA2.docx, DA2.docx, q1.sh, q2.sh, and q2.b.sh. The central editor pane shows the content of 'q2.b.sh', which is a shell script to swap two numbers without a third variable. The script includes echo statements for registration number, name, and prompts, followed by read commands for variables a and b. It then uses arithmetic expansion with `expr` to perform the swap and echoes the results. The bottom pane shows the terminal output of running the script, which matches the script's content, including the registration number 21BBS0162, name Anuj Parihar, and the swapped values of a and b.

```
q2.b.sh
1 echo "Registration Number: 21BBS0162"
2 echo "Name: Anuj Parihar"
3 echo "Enter two numbers"
4 read a
5 read b
6 echo "Before swapping"
7 echo "a=$a"
8 echo "b=$b"
9 a=`expr $a + $b`
10 b=`expr $a - $b`
11 a=`expr $a - $b`
12 echo "After swapping"
13 echo "a=$a"
14 echo "b=$b"
```

```

bear@Apollo:/mnt/e/VIT-VIT-DA/Fall Sem 2022/CBS1006- Principles of Operating Systems Lab/DA2$ ./q2.b.sh
Registration Number: 21BBS0162
Name: Anuj Parihar
Enter two numbers
1
2
Before swapping
a=1
b=2
After swapping
a=2
b=1
bear@Apollo:/mnt/e/VIT-VIT-DA/Fall Sem 2022/CBS1006- Principles of Operating Systems Lab/DA2$
```

```
bear@Apollo:/mnt/e/VIT/VIT-DA/Fall Sem 2022/CBS1006- Principles of Operating Systems Lab/DA2$ ./q2.b.sh
Registration Number: 21BBS0162
Name: Anuj Parihar
Enter two numbers
1
2
Before swapping
a=1
b=2
After swapping
a=2
b=1
bear@Apollo:/mnt/e/VIT/VIT-DA/Fall Sem 2022/CBS1006- Principles of Operating Systems Lab/DA2$ |
```