PCA2 Assignment

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Sub	**: UNIX & SHELL PROGRAMMING**
Sub Code	**: BCAC691**
Sem	**: 6**

1. **Write a shell script to find whether an input integer is even or odd.**

```
echo "Enter a Num : "
read num
if [ $((num % 2)) -eq 0 ];
then
    echo "$num is Even Number."
else
    echo "$num is Odd Number."
fi
```

OUTPUT :

```
❯ sh prog1.sh
Enter a Num :
7
7 is Odd Number.
❯ sh prog1.sh
Enter a Num :
78
78 is Even Number.
^ ~/Documents/UNIX_PCA2 ❯
```

2. Write a shell script to find out the greatest among three inputs.

```
echo "Enter num1 : "
read num1
echo "Enter num2 : "
read num2
echo "Enter num3 : "
read num3
if [ $num1 -gt $num2 ] && [ $num1 -gt $num3 ]
then
    echo "$num1 is the greatest."
elif [ $num2 -gt $num1 ] && [ $num2 -gt $num3 ]
then
    echo "$num2 is the greatest."
else
    echo "$num3 is the greatest."
fi
```

OUTPUT :

```
❯ sh prog2.sh
Enter num1 :
8
Enter num2 :
11
Enter num3 :
7
11 is the greatest.
λ ~/Documents/UNIX_PCA2 ❯
```

3. Write a shell script to calculate the net salary of an employee in a particular month considering various allowances (TA, DA, HRA) and deductions (INCOME TAX, PROVIDENT FUND) as:
TA=15 percent of basic salary
b. DA=2 percent of basic salary
c. HRA=10 percent of basic salary
d. INCOME TAX=5 percent of salary
e. PROVIDENT FUND=10 percent of salary

```
echo "Enter the base pay of the employee :"
read basePay
TA=$((basePay*15/100))
DA=$((basePay*2/100))
HRA=$((basePay*10/100))
IT=$((basePay*5/100))
PF=$((basePay*10/100))
netSalary=$((basePay+TA+DA+HRA-IT-PF))
echo "The Net Salary is : $netSalary"
~
~
~
```

OUTPUT :

```
❯ sh prog3.sh
Enter the base pay of the employee :
1000
The Net Salary is : 1120
^ ~/Documents/UNIX_PCA2 ❯
```

4. A departmental store announces its festival scheme to customers on cash payment. The scheme is as follows-
a. If the purchase amount is less than 1000 then Tax=2% and discount=10%.
b. If the purchase amount is greater than 1000 then Tax=5 % and discount=20%.

```
echo "Enter the Price :  "
read price
if [ $price -ge 1000 ]
then
    Tax=$((price*5/100))
    discount=$((price*20/100))
    sp=$((price+Tax-discount))
    echo "The Selling Price is : $sp "
else
    Tax=$((price*2/100))
    discount=$((price*10/100))
    sp=$((price+Tax-discount))
    echo "The Selling Price is : $sp "
fi
~
```

OUTPUT :

```
❯ sh prog4.sh
Enter the Price :
1200
The Selling Price is : 1020
❯ sh prog4.sh
Enter the Price :
5000
The Selling Price is : 4250
 ~/Documents/UNIX_PCA2 ❯
```

5. The XYZ construction company plans to give a 5% year-end bonus to each of its employees earning Rs.5,000 or more per year and a fixed bonus of Rs 250 to all other employees. Print the bonus of any employee.

```
echo "Enter the Salary : "
read salary
fBonus=250
eBonus=$((salary*5/100))
if [ $salary -lt 5000 ]
then
    echo "The Bonus of the Employee is : $fBonus"
else
    tBonus=$((fBonus+eBonus))
    echo "The Bonus of the Employee is : $tBonus"
fi
~
~
```

OUTPUT :

```
❯ sh prog5.sh
Enter the Salary :
5000
The Bonus of the Employee is : 500
❯ sh prog5.sh
Enter the Salary :
4000
The Bonus of the Employee is : 250
 ~/Documents/UNIX_PCA2 ❯
```

6. Write a shell script to perform an arithmetic operation upon two inputs. The operation should also be input by the user.

```
#!/bin/bash

read -p "Enter the first number: " num1
read -p "Enter the second number: " num2
read -p "Enter the operation (+, -, *, /, %): " operation
case $operation in
    +)
        result=$((num1 + num2))
        ;;
    -)
        result=$((num1 - num2))
        ;;
    \*)
        result=$((num1 * num2))
        ;;
    /)
         result=`expr $num1 / $num2`
            ;;
    %)
        result=`expr $num1 % $num2`
                ;;
esac
echo "Result: $result"
```

OUTPUT :

```
❯ sh prog6.sh
Enter the first number: 5
Enter the second number: 4
Enter the operation (+, -, *, /, %): +
Result: 9
❯ sh prog6.sh
Enter the first number: 5
Enter the second number: 2
Enter the operation (+, -, *, /, %): -
Result: 3
❯ sh prog6.sh
Enter the first number: 5
Enter the second number: 4
Enter the operation (+, -, *, /, %): *
Result: 20
❯ sh prog6.sh
Enter the first number: 20
Enter the second number: 5
Enter the operation (+, -, *, /, %): /
Result: 4
 ~/Documents/UNIX_PCA2 ❯
```

7. Write a shell script to find out the length of an input string.

```
#!/bin/bash
read -p "Enter a string: " input_string
length=${#input_string}
echo "Length of the input string is: $length"
~
~
~
```

OUTPUT :

```
❯ sh prog7.sh
Enter a string: Hello World!
Length of the input string is: 12
 ~/Documents/UNIX_PCA2 ❯
```

8. Write a shell script to find whether an input year is leap year or not.

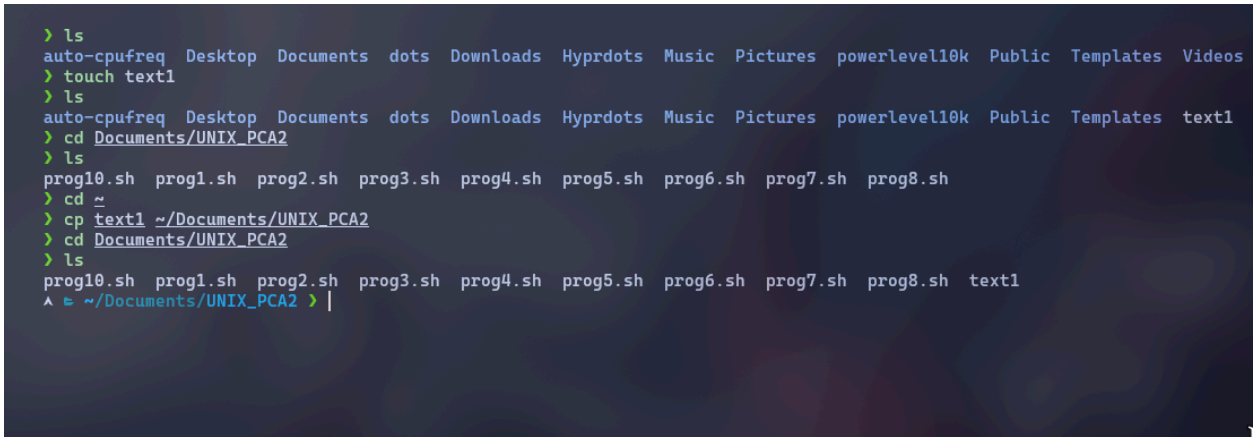
```
#!/bin/bash

read -p "Enter a year: " year
if (( ($year % 4 == 0 && $year % 100 != 0) || $year % 400 == 0 )); then
    echo "$year is a leap year."
else
    echo "$year is not a leap year."
fi
```

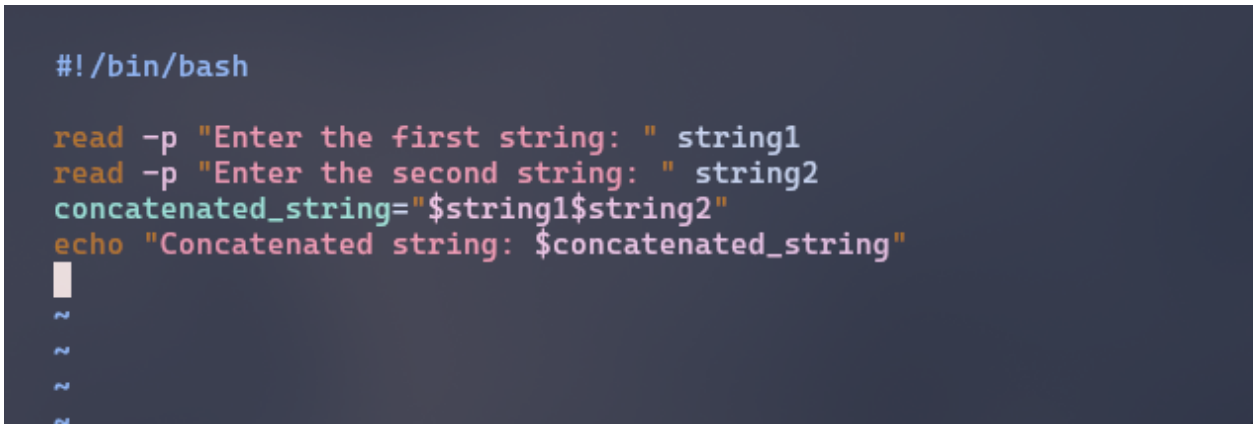
OUTPUT :

```
❯ sh prog8.sh
Enter a year: 2024
2024 is a leap year.
❯ sh prog8.sh
Enter a year: 2023
2023 is not a leap year.
 ~/Documents/UNIX_PCA2 ❯
```

9. Make a duplicate copy of a specified file through command-line.



10. Write a shell script to concatenate two strings input by the user.



OUTPUT :