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Programming Constructs – Functions

4. Functions

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- Functions in Bash Scripting are a great way to reuse code.
- Think of a function as a small script within a script. It's a small chunk of code which you may call multiple times within your script. They are particularly useful if you have certain tasks which need to be performed several times.

Function Example

```
#!/bin/bash -x

function myfunc() {
  echo $1
}
result="$( myfunc $((RANDOM%2)) )"
if [ $result -eq 1 ]
then
  echo "success"
else
  echo "failure"
fi
functionTest.sh (END)
```

```
++ myfunc 1
++ echo 1
+ result=1
+ '[' 1 -eq 1 ']'
+ echo success
success
```

UC 7

Refactor the Code to write a function to get work hours

Calculating Wages till Number of Working Days or Total Working Hours per month is Reached

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```
#!/bin/bash -x

# CONSTANTS FOR THE PROGRAM
IS_PART_TIME=1;
IS_FULL_TIME=2;
MAX_HRS_IN_MONTH=4;
EMP_RATE_PER_HR=20;
NUM_WORKING_DAYS=20;

# VARIABLES
totalEmpHr=0;
totalWorkingDays=0;

function getWorkingHours() {
   case $1 in
      $IS_FULL_TIME)
         workHours=8
         ;;
      $IS_PART_TIME)
         workHours=4
         ;;
      *)
         workHours=0
         ;;
   esac
   echo $workHours
}

while [[ $totalWorkHours -lt $MAX_HRS_IN_MONTH &&
         $totalWorkingDays  -lt  $NUM_WORKING_DAYS ]]
do
   ((totalWorkingDays++))
   workHours="$( getWorkingHours $((RANDOM%3)) )"
   totalWorkHours=$(($totalWorkHours+$workHours))
done

totalSalary=$(($totalWorkHours*$EMP_RATE_PER_HR));
```

```
Narayans-MacBook-Pro:TerminalCommands narayan$ ./empWageFunction.sh
+ IS_PART_TIME=1
+ IS_FULL_TIME=2
+ MAX_HRS_IN_MONTH=4
+ EMP_RATE_PER_HR=20
+ NUM_WORKING_DAYS=20
+ totalEmpHr=0
+ totalWorkingDays=0
+ [[ '' -lt 4 ]]
+ [[ 0 -lt 20 ]]
+ (( totalWorkingDays++ ))
++ getWorkingHours 2
++ case $1 in
++ workHours=8
++ echo 8
+ workHours=8
+ totalWorkHours=8
+ [[ 8 -lt 4 ]]
+ totalSalary=160
```

Functions Practice Problems

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1. Help user find degF or degC based on their Conversion Selection. Use Case Statement and ensure that the inputs are within the Freezing Point (0 °C / 32 °F) and the Boiling Point of Water (100 °C / 212 °F)
   a. degF = (degC * 9/5) + 32
   b. degC = (degF – 32) * 5/9
2. Write a function to check if the two numbers are Palindromes
3. Take a number from user and check if the number is a Prime then show that its palindrome is also prime
   a. Write function check if number is Prime
   b. Write function to get the Palindrome
   c. Check if the Palindrome number is also prime

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Thank You