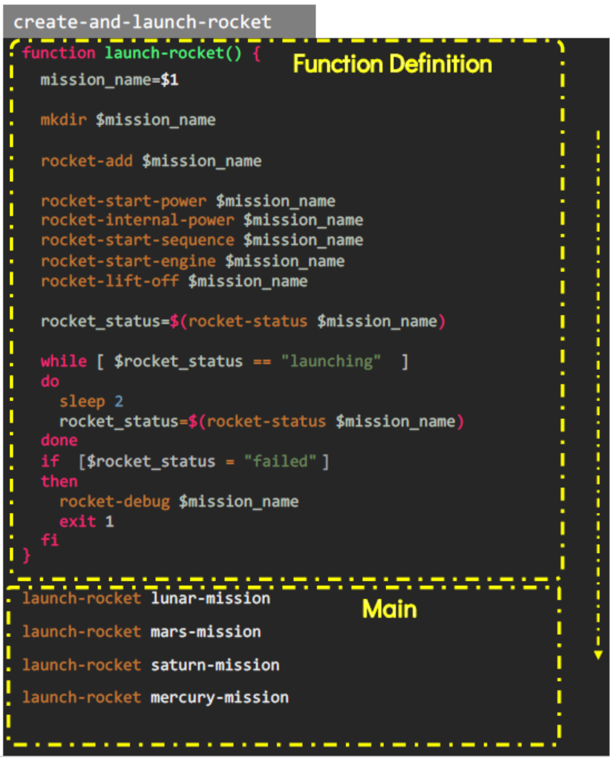
Functions

- Functions within a shell script is a piece of code or a block of code that perform a particular function that can be reused.



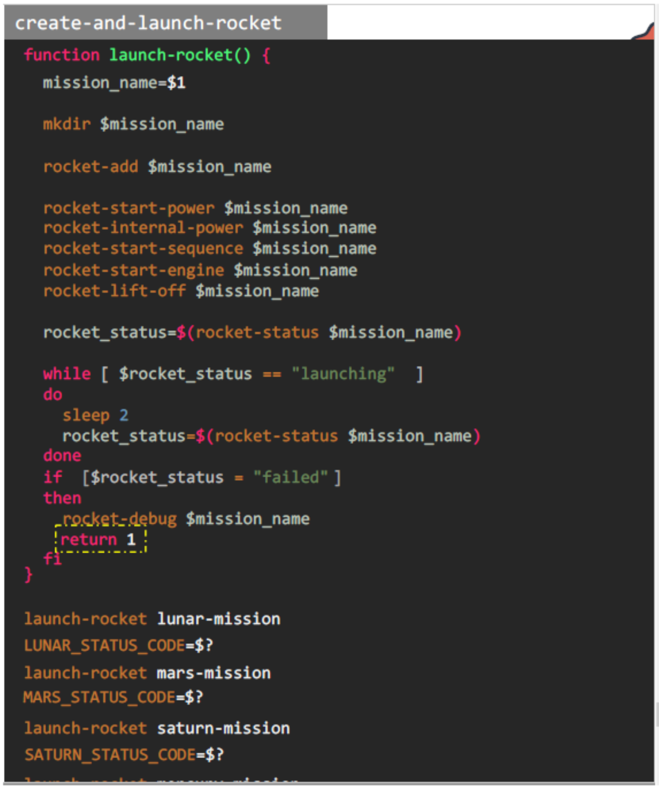
```
create-and-launch-rocket
```

```
function launch-rocket() {
  mission_name=$1

  mkdir $mission_name

  rocket-add $mission_name

  rocket-start-power $mission_name
  rocket-internal-power $mission_name
  rocket-start-sequence $mission_name
  rocket-start-engine $mission_name
  rocket-lift-off $mission_name

  rocket_status=$(rocket-status $mission_name)

  while [ $rocket_status == "launching"  ]
  do
    sleep 2
    rocket_status=$(rocket-status $mission_name)
  done
  if  [$rocket_status = "failed" ]
  then
    rocket-debug $mission_name
    exit 1
  fi
}
```

```
launch-rocket lunar-mission

launch-rocket mars-mission

launch-rocket saturn-mission

launch-rocket mercury-mission
```

- When a shell script runs it runs line-by-line. So your Function must `always be defined first` before calling it, if not then it will give error.

- The return statement within a function call helps in specifying the exit code for that function. It is just like the exit code for the entire script but in this case it wont exit the script but the function.

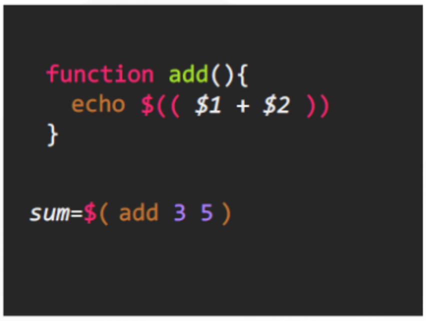


create-and-launch-rocket

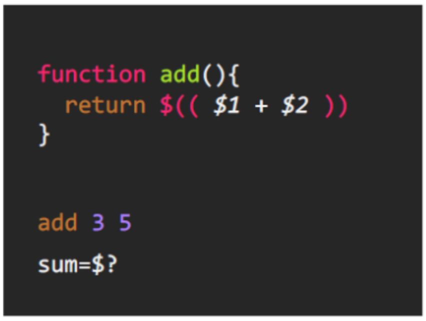
```
function launch-rocket() {
  mission_name=$1

  mkdir $mission_name

  rocket-add $mission_name

  rocket-start-power $mission_name
  rocket-internal-power $mission_name
  rocket-start-sequence $mission_name
  rocket-start-engine $mission_name
  rocket-lift-off $mission_name

  rocket_status=$(rocket-status $mission_name)

  while [ $rocket_status == "launching"  ]
  do
    sleep 2
    rocket_status=$(rocket-status $mission_name)
  done
  if  [$rocket_status = "failed" ]
  then
    rocket-debug $mission_name
    return 1
  fi
}

launch-rocket lunar-mission
LUNAR_STATUS_CODE=$?
launch-rocket mars-mission
MARS_STATUS_CODE=$?
launch-rocket saturn-mission
SATURN_STATUS_CODE=$?
```

- When to use Functions?
  - Break up large script that performs many different tasks
  - Installing packages
  - Adding users
  - Configuring firewalls
  - Perform Mathematical calculations

- Function to add two numbers, returning the value of addition to a variable called `sum` and outputing the exit code of previouly run command



```
function add(){
  echo $(( $1 + $2 ))
}

sum=$( add 3 5 )
```



```
function add(){
  return $(( $1 + $2 ))
}

add 3 5
sum=$?
```