

Feedback on Practical 3

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Suggestions for MAS1343 candidates

- ▶ comment out anything that you don't intend to be an R command, many of you lost marks because your R code could not be loaded e.g

```
# Question 1  
MySD = function() {  
  # ...  
}
```

- ▶ R is case sensitive, if you define a function as Diff, nothing will happen if you call diff

- If you call the same function numerous times in a loop and it returns the same value each time why not have it outside the loop as a variable

```
MySD = function(x){  
  xbar = mean(x)  
  total = 0  
  for(i in 1:length(x))  
    total = (x[i] - xbar)*(x[i] - xbar)  
  # ...  
}  
  
## rather than  
MySD = function(x){  
  total = 0  
  for(i in 1:length(x))  
    total = (x[i] - mean(x))*(x[i] - mean(x))  
  # ...  
}
```

- No need to always re-invent wheel, i.e

```
MeanX = function(x){  
  return(sum(x)/length(x))  
}  
MeanY = function(y){  
  return(sum(y)/length(y))  
}
```

do the same thing. The name of your variable does not matter when you pass it into your function, you give it the name according to the function argument when you pass it in.

```
> z = 1:5  
> MeanX(z) == MeanY(z)  
[1] TRUE
```

- ▶ If you use a variable within your function, make sure it is defined within your function

```
Mean = function(x){  
  total = 0  
  for(i in 1:n){  
    #...  
  }  
  # ... R does not know what value n is here  
}
```

- ▶ For the IsEven question, some interesting solutions to this, for these people remember that we have a modulo operator %%

```
> 2%%2
```

```
[1] 0
```

```
> 3%%2
```

```
[1] 1
```

- ▶ When you call a function, make sure you use the result appropriately, save to a variable when necessary

```
MyMedian = function(x){  
  sort(x)  
  if(length(x) %% 2 == 0){  
    return(x[])  
  }  
  # the x is still unsorted because we haven't  
  #saved it to anything  
}
```

- ▶ To call a function, you always need some ()

```
MyMean2 = function(x, nonzero = TRUE){  
  if(nonzero) y = mean  
    ### sets y to be the function mean  
  else y = mean(x)  
    ### sets it to be the result of mean(x)  
}
```

- ▶ Put default argument values into the function definition

```
> MyMean2 = function(x, nonzero = TRUE){  
+   #...  
+ }
```