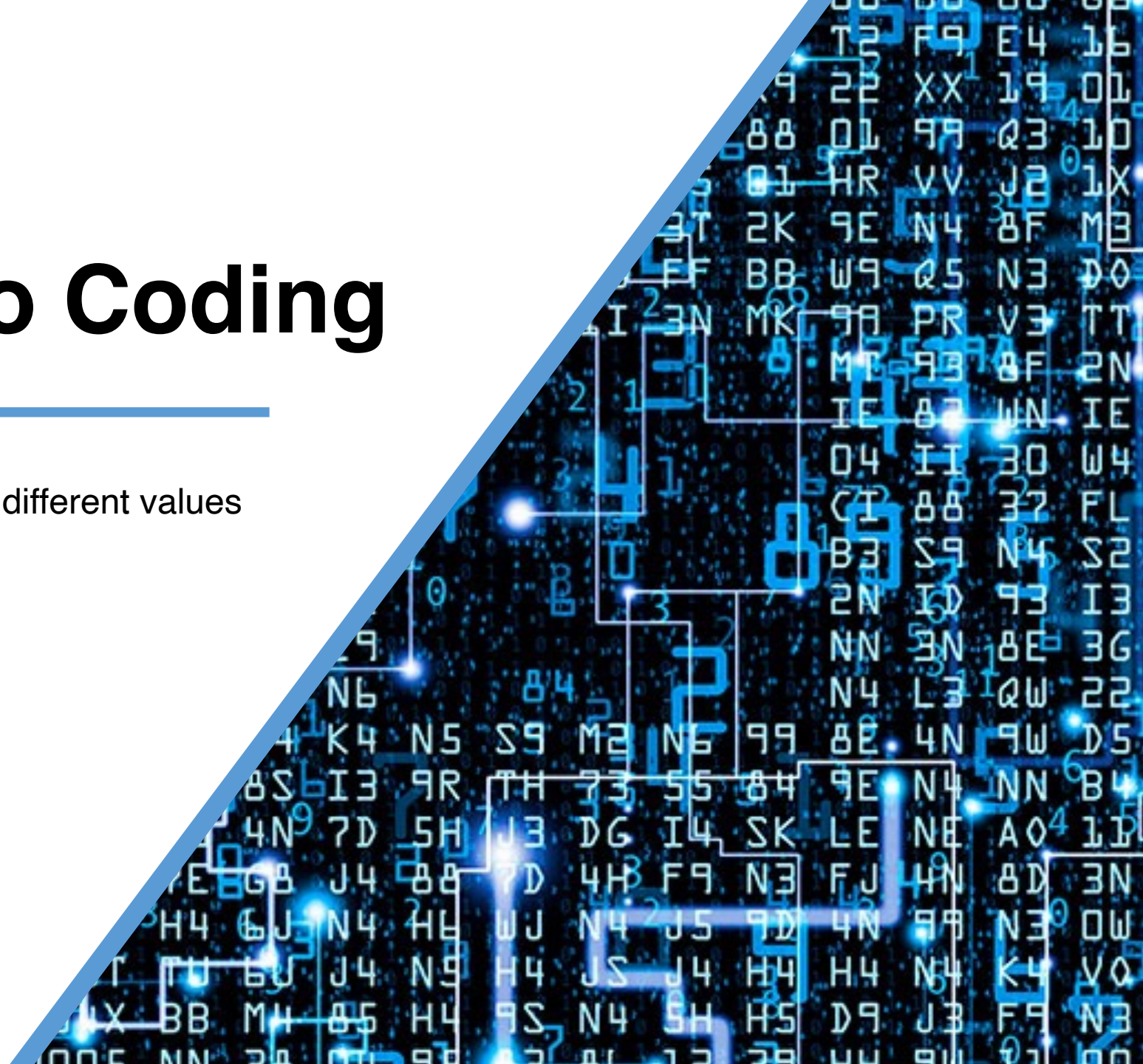


Introduction to Coding

Making Choices, Looping over different values

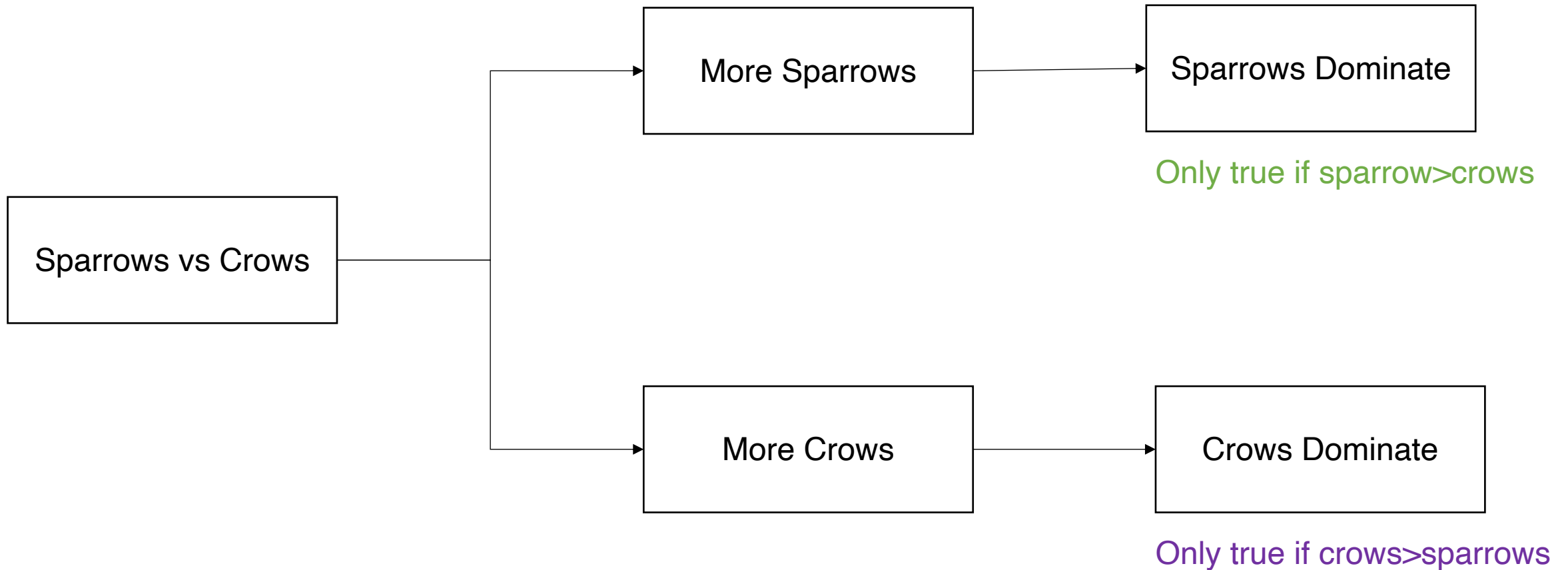
Dr Josh Hodge
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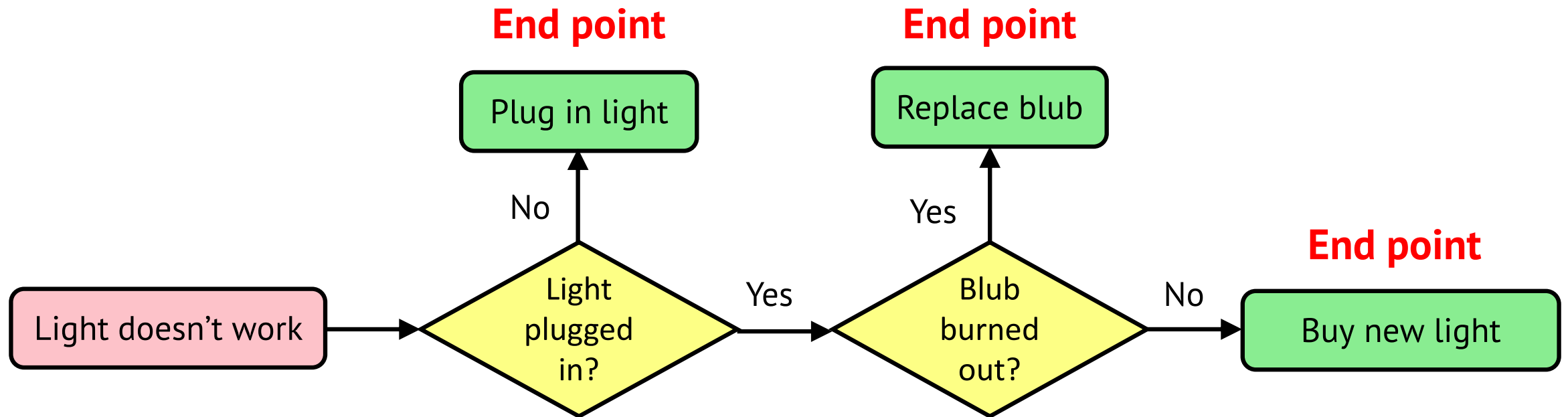
Intended Learning Outcomes

- Identify the R tools needed to make decisions based on conditions
- Create loops over different values
- Apply commands over values and vectors
- Manipulate the R to solve practical problems

Controlling the Logical Flow



Controlling the Logical Flow



if Statements

```
if (logical expression){  
  code block if TRUE  
}
```

- Consists of three elements:
 1. `if`
 2. A single logical expression between parentheses `()`
 3. A block of code between braces `{}` that has to be executed when the logical value is `TRUE`

if...else Statements

```
if (logical expression){  
code block if TRUE  
} else {  
code block if FALSE  
}
```

- Consists of three elements:
 1. else
 2. A block of code between braces {} that has to be executed when the logical value is FALSE

ifelse Statements

`ifelse (logical expression,
code block 1, code block 2)`

- Consists of three elements:
 1. `ifelse` followed by parentheses
 2. A logical expression
 3. A block of code when the logical expression is TRUE
 4. A block of code when the logical expression is FALSE

Looping Through Values

```
for(i in vector){  
... do something...  
}
```

- Consists of the following parts:
 1. `for` followed by parentheses `()`
 2. An identifier between the parentheses, e.g. `i` but can be any object name you like
 3. `in` that follows the identifier
 4. A vector with values to loop over
 5. A code block between braces that has to be carried out for every value in the vector

Looping Statements

```
##File Listing of Folder##
folderCont<-list.files(path="/files/")

##Create New Matrix##
result<-matrix(ncol=length(folderCont),nrow=10)
colnames(result)<- folderCont

##Creating the Loop##
for (i in 1:length(folderCont)){

  #Import File#
  temp<-read.csv(folderCont[i],row.names=1)

  #Calculate wgt/Hgt Ratio#
  result[,i]<- transmute(temp,ratio=wt/hgt)
  rm(temp)
}
```

Practical Time

**MSc's stay for RMarkdown and
Assessment**