

# Homework Programming 1: session 3

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## 1 Conditional statements

### 1.1 Exercise on conditional statements

Let's build a function that classifies what a person does on each day of the week. The input may be each day of the week: Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday.

- (1) Build a conditional statement (i.e. an `if-else` clause) that returns a variable named `action` that is equal to `work` if the input is a working day and `rest` else. Inside the `if` clause, you may use `%in%` to check if the input belongs to the vector `c('Saturday', 'Sunday')`

```
day <- 'Sunday'  
if (day %in% c('Saturday', 'Sunday')){  
  action <- 'rest'  
} else {  
  action <- 'work'  
}
```



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```

action_day <- function(day){
  if (day %in% c('Saturday', 'Sunday')){
    action <- 'rest'
  } else {
    action <- 'work'
  }
  print(action)
}

```

- (3) Invoke the function seven times, each time with a different day. (Do NOT copy paste the loop seven times).

```
action_day('Monday')
```

```
## [1] "work"
```

```
action_day('Tuesday')
```

```
## [1] "work"
```

```
action_day('Wednesday')
```

```
## [1] "work"
```

```
action_day('Thursday')
```

```
## [1] "work"
```

```
action_day('Friday')
```

```
## [1] "work"
```



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```
action_day('Sunday')
```

```
## [1] "rest"
```

- (4) Modify the function so that it provides a different action for each day according to the following list. You may use a nested `if-else` construction like the one in the solved example.

day	action
Monday	walk
Tuesday	play
Wednesday	jog
Thursday	sleep
Friday	party
Saturday	pray
Sunday	study

```
action_day <- function(day){  
  if (day == 'Monday'){  
    action <- 'walk'  
  } else if (day == 'Tuesday') {  
    action <- 'play'  
  } else if (day == 'Wednesday') {  
    action <- 'jog'  
  } else if (day == 'Thursday') {  
    action <- 'sleep'  
  } else if (day == 'Friday'){  
    action <- 'party'  
  } else if (day == 'Saturday'){  
    action <- 'pray'  
  } else if (day == 'Sunday'){  
    action <- 'study'  
  }  
  print(action)  
}
```

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```
action_day('Monday')
```

```
## [1] "walk"
```

```
action_day('Tuesday')
```

```
## [1] "play"
```

```
action_day('Wednesday')
```

```
## [1] "jog"
```

```
action_day('Thursday')
```

```
## [1] "rest"
```

```
action_day('Friday')
```

```
## [1] "party"
```

```
action_day('Saturday')
```

```
## [1] "pray"
```

```
action_day('Sunday')
```

```
## [1] "study"
```

**1.2 Solved exercise on conditional statements - Note that this is not identical to the exercise you need to do and is just meant as a warm-up**



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```

period <- 'morning'
if (period %in% c('morning', 'afternoon')){
  activity <- 'hunt'
} else {
  if (period == 'evening'){
    activity <- 'work'
  } else {
    activity <- 'rest'
  }
}
}

```

(2) Put the if-else clause inside a function named `action_period` that prints activity.

```

activity_period <- function(period){
  if (period %in% c('morning', 'afternoon')){
    activity <- 'hunt'
  } else {
    if (period == 'evening'){
      activity <- 'work'
    } else {
      activity <- 'rest'
    }
  }
  print(activity)
}

```

(3) Invoke the function four times, each time with a different day. (Do NOT copy paste the loop four times).

```
activity_period('morning')
```

```
## [1] "hunt"
```

```
activity_period('afternoon')
```



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```
activity_period('night')
```

```
## [1] "rest"
```

- (4) Modify the function so that it provides a different action for each month according to the following list.

month	activity
Jan	hunt
Feb	feed
Mar	play
Apr	rest
May	fight
Jun	heal
rest	hibernate

```
activity_month <- function(month){  
  if (month == 'Jan'){  
    activity <- 'hunt'  
  } else if (month == 'Feb') {  
    activity <- 'feed'  
  } else if (month == 'Mar') {  
    activity <- 'play'  
  } else if (month == 'Apr') {  
    activity <- 'rest'  
  } else if (month == 'May'){  
    activity <- 'fight'  
  } else if (month == 'Jun'){  
    activity <- 'heal'  
  } else {  
    activity <- 'hibernate'  
  }  
  print(activity)  
}
```

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```
activity_month('Feb')
```

```
## [1] "feed"
```

```
activity_month('Mar')
```

```
## [1] "play"
```

```
activity_month('Apr')
```

```
## [1] "rest"
```

```
activity_month('May')
```

```
## [1] "fight"
```

```
activity_month('Jun')
```

```
## [1] "heal"
```

```
activity_month('Jul')
```

```
## [1] "hibernate"
```



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