Project 1 Solutions

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Collaborators: N/A

TA help:

1) Kim, Question 6, Helped me in understanding the paste() in R.

2) Hanwen Gu, Question 6, Helped me re-structure my answer to demonstrate understanding.

Online resources used: N/A

Question 1

The memory on the 7 frontend nodes is: 4 * 512 + 3 * 768 = 4352 GB = 4.3 TB and 4 * 20 + 3 * 20 = 140 cores.

The memory on the 28 nodes in the sub-cluster is: 24 * 64 + 4 * 192 = 2304 GB = 2.3 TB and 24 * 20 + 4 * 16 = 544 cores.

The memory on Abhimanyu's laptop is 8 GB and 4 cores.

Question 2

The node we are working on is:

```
system("hostname", intern=T)
```

```
[1] "scholar-fe03.rcac.purdue.edu"
```

We are working on Scholar front end number 03.

Question 3

Printed Message Sentence: "You've successfully loaded The Data Mine R settings!"

Question 4

There are 3 chunks of R code, 1 chunk of Python, 1 chunk of Bash and 1 chunk of SQL.

Question 5

Basically 1,2 and 3 are stored into a variable called "my_variable".

```
my_variable <- c(1,2,3)
my_variable
```

```
[1] 1 2 3
```

The displayed output is: 1 2 3

Question 6

Referring back to question 1, we can perform the following arithmetic calculations:

Memory (GB) and Core (Number of Core units) calculations using R for 7 front end respectively:

```
4 * 512 + 3 * 768
```

```
[1] 4352
```

```
4 * 20 + 3 * 20
```

```
[1] 140
```

Memory (GB) and Core (Number of Core units) calculations using R for 28 sub-clusters respectively:

```
24 * 64 + 4 * 192
```

```
[1] 2304
```

```
24 * 20 + 4 * 16
```

```
[1] 544
```

Question 7

We load in given dataset as follows:

```r
dat <- read.csv("/class/datamine/data/disney/splash_mountain.csv")
head(dat)
```

```
        date            datetime SACTMIN SPOSTMIN
1 01/01/2015 2015-01-01 07:51:12      NA        5
2 01/01/2015 2015-01-01 08:02:13      NA        5
3 01/01/2015 2015-01-01 08:09:12      NA        5
4 01/01/2015 2015-01-01 08:16:12      NA        5
5 01/01/2015 2015-01-01 08:23:12      NA        5
6 01/01/2015 2015-01-01 08:29:12      NA        5
```

Question 8

Submitting deliverable: project01.RMD, project01.R and project01.pdf

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