

Commands should be run from inside the folder 170101008\_annanya provided.

---

## 1) Implement Haskell Functions for basic Set Operations

To load the haskell program run:

```
$ ghci
Prelude>:load first
```

Functions available are:

### isEmptySet

Works for all **String**, **Int** and **Float** lists

```
*Main> isEmptySet [1, 2]
```

### unionSet

Works for all **String**, **Int** and **Float** lists

```
*Main> unionSet [1, 2] [3, 4]
```

### intersectionSet

Works for all **String**, **Int** and **Float** lists

```
*Main> intersectionSet [1, 2] [1, 3]
```

### subtractionSet

Works for all **Strings**, **Int** and **Float** lists

```
*Main> subtractionSet [1, 2] [1, 3]
```

### additionSet

Works for **only Int** and **Float** lists as addition is not defined on **Strings**

```
*Main> additionSet [1, 2] [1, 3]
```

---

## 2) IITG Football League

To load the haskell program run:

```
$ ghci
Prelude>:load second
```

If **System.Random** is not already installed install it using

```
$ sudo apt-get install libghc-random-dev
```

Generating all fixtures:

```
*Main> fixture "all"
```

```
*Main> fixture "all"
CS vs EE      1-12-2020  9:30
DS vs CV      1-12-2020  7:30
CM vs CH      2-12-2020  9:30
HU vs BS      2-12-2020  7:30
MA vs ME      3-12-2020  9:30
PH vs ST      3-12-2020  7:30
```

Match Details of a particular team:

```
*Main> fixture "CS"
```

```
*Main> fixture "CS"
CS vs EE    1-12-2020  9:30
```

#### Next Match Details:

```
*Main> nextMatch 1 13.25
```

```
*Main> nextMatch 1 13.25
DS vs CV    1-12-2020  7:30
```

---

### 3) House Planner

To load the haskell program run:

```
$ ghci
Prelude>:load third
```

To Run the designer use

```
*Main> design spaceArea bedroomCount hallCount
```

#### Examples

Average Running time example takes around 5 sec:

```
*Main> design 1000 2 3
Bedroom: 2 (10 x 10)
Hall: 3 (15 x 10)
Kitchen: 1 (7 x 5)
Bathroom: 3 (4 x 5)
Balcony: 1 (9 x 10)
Garden: 1 (11 x 15)
Unused Space:: 0
```

Worst Case Running time example takes around 60 sec:

```
*Main> design 10000 12 14
Bedroom: 12 (15 x 15)
Hall: 14 (20 x 15)
Kitchen: 4 (15 x 13)
Bathroom: 13 (8 x 9)
Balcony: 1 (10 x 10)
Garden: 1 (20 x 20)
Unused Space:: 884
```