

This document describes the components for generating a question template in the randomized quiz generator.

- a. Any statement of the code that should NOT be displayed can be hidden by putting a `//HIDE` comment at the end of the statement.
- b. General structure of question is as follows where the questions is *What is the value of result* when the following code is executed,

```
1 class ExampleProgram { //HIDE
2     public static void main(String[] args) { //HIDE
3         code visible to the user
4         System.out.println(result); //HIDE
5     }}//HIDE
```

- c. `rand(low,high)`: gives a value in the range [low, high]
- d. `randset(array(item1,item2...))` gives a random item from the set
- e. An existing variable can be accessed in subsequent substitutions by surrounding it with `%`. For example, `s1` can be accessed by including `%s1%`.
- f. Selection from existing variables can be done in the following way, in which `s5` is either `s4 - 1`, or `s4` or `s4 + 1` with equal probabilities. One can manipulate the probabilities, and therefore distribution, using appropriate conditions.

```
1 //Equal chance of any condition happening
2 $decidor=rand(0,2);
3 if($decidor==0) {
4     return %s4% + 1; //First result
5 }
6 elseif($decidor==1) {
7     return %s4%;
8 }
9 else {
10    return %s4% - 1;
11 }
```

- g. `randset` can be used to randomize variables AND operators. Some examples,

- `s1 = randset(array("true", "false"), s3 = randset(array("!!", "!", "!!!")), val = 's3"s1"`.
- `s1 = rand(1,10), s2 = rand(1,5), double val = 's1'. 's2' ;`