CSE 310 Online A1: Out of Ideas

Time: 30 minutes

June 2025

1   Objective

We will borrow syntaxes from python now. In this task, you will extend your offline to handle two loop statements usually seen in python.

2   Requirements

- Extend your code for two new loop structures. Structure 1:

```
forin (i in 0 to 10) {
    statement_list;
}
```

- Structure 2:

```
foreach (x in myArray) {
    statement_list;
}
```

- We need semantic checking. Throw an error if myArray is not an array variable for loop structure 2 or loop variable i is not int for loop structure 1.

You may need to add symbol(s) in the lexer for this assignment.

Sample Input

```
int var(int a, int b){
        return a+b;
}
```

```
int main(){

    float d;
    int i,a[4],x;
    d=var(1,2*3)+3.5*2;

    forin (i in 0 to 10) {
       i = i + 1;
    }

    foreach (x in a) {
       x = x + 1;
    }
        return 0;
}
```

Expected Log Output

The log file will contain the new rules with content matched by that rule, similar to your assignment.

Sample Input

```
int var(int a, int b){
        return a+b;
}


int main(){

    float d;
    int a[4],x;
    float i;
    d=var(1,2*3)+3.5*2;

    forin (i in 0 to 10) {
       i = i + 1;
    }

    foreach (x in i) {
       x = x + 1;
    }
```

```
        return 0;
}
```

Expected Error Output

```
Line No. 15: Loop variable i is not integer
Line No. 19: i is not an array
```

3   Marks Distribution

- Parsing without error - 7

- Detecting errors - 3

4   Submission Instructions

- Zip and submit your parser and lexer files.