CSE 215: Programming Language II Lab

Sec – 8, Faculty - MUO

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Lab – 2

Conditional Statements, Loops

Objective:

To learn different kinds loops

- for
- while
- do-while

Loops allow us to perform repetitive tasks within a few blocks of code instead of doing them manually (e.g. copy pasting).

In Java, there are mainly three types of loops:

a. for loop

b. while loop

c. do…while loop

for

```
for(int i = 0; i < 10; i++){
// do something
}
```

while

```
while(condition){
// do something
}
```

Anything that can be done using a `for` loop, can also be done using a `while` loop

Nested loops:

Nested loops are simply loop within a loop.

However, the more loops you have within a nested loop, the more computationally expensive it becomes.

Syntax: Nested for loop

```
for (int i = 1; i <=5; i++) {
// outer loop body
for (int j = 1; j <=5; j++) {
// inner loop body
}
// outer loop body
}
```

Nested while loop

```
while(someCondition) {
// outer while loop body
while(someOtherCondition) {
// inner while loop body
}
// outer while loop body
}
```

Task:

1. Write a program that takes an integer (say, n) and your name as inputs, and then prints your name n times to the console.

2. Write a program that prints the following patterns:

(a)
```
5 4 3 2 1
  4 3 2 1
    3 2 1
      2 1
        1
```

(b)
```
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5
```

(c)
```
    *
   ***
  *****
 *******
*********
```

(d)
```
*********
 *******
  *****
   ***
    *
```

3. Write a program that takes an integer and prints its divisors, i.e. divisors of 12 are 1, 2, 3, 4, 6.

4. Write a program which will use while loop to print all the integers between 100 and 150 which
are divisible by 8 in descending order.
Output: 144 136 128 120 112 104