CMPS 12A

-Functions/Methods

-Loops

-Classes and Objects

-Recursion

-Arrays

-inheritance

Engineering building 2 building

-E2 249B

-Tuesday 2-4pm, Thursday 3-5pm

[Jbtse@ucsc.edu](mailto:Jbtse@ucsc.edu)

Teaching assistance

Contact:

Yi

[-yyin15@ucsc.edu](mailto:-yyin15@ucsc.edu)

Textbook:

Programming in Java(Online textbook) Lysecky

Resources:

-Canvas

-Piazza

-Opencast

First project

Paycheck

Exam:

Midterm 1:Wednesday, Oct 25

Midterm 2: Monday, November 20

Final Exam: December 13 12:00-3:00

1st Class:

public static void main(String[]args);

-A Variable stores a value; we can change and use the value.

Data type:

Byte 8bits -2n7 to2n7

Short 16bits -2n15 to 2n15

Int 32bits -2n31 to 2n31

long 64b -2n63 to 2n63

float 32b coefficient of 23bits, exponent of 8 bits

Double 64b coefficient of 53bits, exponent of 11 bits

Char 16b ASCII characters

Boolean 1b True or False

Class 2

-.substring( ,);

Math.sqrt(x);

Math.pow(x,y);

Math.round(x);

Math.random(x);

Math.PI

Math.E

(int)(Math.random() \* ((upperbound - lowerbound) + 1) + lowerbound);

replace(str1, str2);

replace(char1, char2);

isLetter(charArg);

Character. isLetter(‘c’);

IsDigit(charArg);

isWhitespace(charAug);

toUpperCase(charAug);

toLowerCase(charAug);

Scope: A variable only exists in the block in which it’s defined. Blocks are denoted by{ , };

Method Overloading: Two methods with the same signature(name), but different parameters.

Data Structures and Array:

Stack:

-Last in, first out(LIFO)

-Queue:

-First in, first out(FIFO);

Push

Pop

Insert

Remove

Objects:

Instance Variables- The data belonging to the class. Aka fields.

Instance Methods-The methods belonging to the class. Aka member method.

Constructor:

Used when initialize the instance variables during the same step we initialize our objects.

Will always have the same name as our class.

If we do not create a constructor, we get a default constructor.

-Private Accessor:

You may not want your instance variables accessed directly

Using private restricts access to that class

Bubble store:

Static vs Instance Methods:

Instance methods are called by individual objects

Static methods are called by the class

Calling a method from the same class only requires the method identifier

Static Variables

-A static variable maintains the same value across all instances of a class

Calling Methods:

Static to Static

Instance to Instance

Instance to Static

No Static to Instance

Linked list:

-push: add item to front of list

-pop: remove item from front of list and return

-insert: insert item at index n

-find: find item at index n and return

-remove: remove item at index n