

Generics



CMSC 132
Department of Computer Science
University of Maryland, College Park

Overview

- **Generic Programming**
- **Generic Classes**

Generic Programming

■ Generic Programming

Defining constructs that can be used with different types

■ In Java we can use **inheritance** or **type variables** in order to implement generic programming

■ Generic class

■ **Class with one or more type variables**

■ **Example: class ArrayList<E>**

Generic Class

- **To use a generic class you must provide an actual type**
- **Valid types**
 - **Class or interface**
- **Invalid types**
 - **Primitive type (you must use wrappers)**

Generic Class

- You can define your own generic classes
 - Define a class and follow the class name with the type variable(s) in angle brackets.
 - Use the type variable to define the type of variables, type of method arguments, return type of a method, or in object allocation
- You can use any name for the type variable but usually uppercase short names (E, K) are used.
- Example: see Queue.java in code distribution