CSC 120 – S

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LAB 12 – OBJECT ORIENTED ANALYSIS & DESIGN

ANALYSIS

Domain:

* Girl (actor), Diamond (non-actor)

Function Points:

* Diamond (no action)
* Girl (accepts diamond)

Scenario:

* Girl accepts new diamond if either the girl has no diamond, or the new diamond is more valuable than her current one

DESIGN

Girl Class:

Data

* name: String, non-final, private, immutable, accessible
* diamond: Diamond, non-final, private, mutable, accessible

Method

+ Constructor: initialize name

+ getDiamond: returns the diamond of girl

+ setDiamond: sets the diamond

+ toString: returns name and diamond of girl in string representation

Diamond Class:

Data

* carats: int, non-final, private, immutable, accessible
* value: double, non-final, private, immutable, accessible

Method

+ Default Constructor: initialize carats and value to 0

+ Constructor: initialize carats and value based on input

+ getValue: returns the value of diamond

+ getCarats: returns the carat of diamond

+ setValue: sets the value of diamond

+ setCarats: sets carats of diamond

+ toString: returns the carats and value of diamond in string representation

1. Get Data
   1. Get name of girl
      1. Instantiate girl object
2. Offer Diamond
   1. Get carat and value of new diamond
      1. Instantiate diamond object to be offered
   2. Get diamond of the girl
      1. Compare value of girl’s diamond and diamond to be offered
         1. Set diamond to diamond to be offered if it has a higher value
3. Print Data
   1. Print data about the girl and her diamond