Paige-David Peck

CPT 232

Program 3

9/30/11

**Data Dictionary**

**Analysis**

Outputs: customers name, diameter of the pond, diameter of the dome, areas of the pond and the dome, cost of concrete for pond and dome, volume of water, and amount of seats

**Name** **Type** **Description**

customer\_name string name of customer

pond\_diameter double diameter of pond

pond\_radius double ½ of the pond diameter

dome\_diameter double 3 times the pond diameter

dome\_radius double ½ of the dome diameter

pond\_area double PI \* r ^ 2

total\_dome\_area double 3 times the pond area

dome\_area\_minus\_pond double total\_dome\_area – pond\_area

POND\_CONCRETE\_COST const double constant $37 per square foot

pond\_concrete\_total double cost of pond concrete

DOME\_CONCRETE\_COST const double constant $27.50 per square foot

dome\_concrete\_total double cost of dome concrete

dome\_area\_half double using half of the area around the pond for seats

num\_seats int number of seats to fit in dome

volume double volume in cubic feet, not gallons, 11 feet high

dome\_volume double volume of the dome for air-conditioning

PI const double using for most accuracy, 3.141592653589793

**Calculate 12 values**

dome\_diameter = pond\_diameter \* 3.0

pond\_radius = pond\_diameter / 2.0

dome\_radius = dome\_diameter / 2.0

pond\_area = pow (pond\_radius, 2) \* PI

total\_dome\_area = pow (dome\_radius, 2) \* PI

dome\_area\_minus\_pond = total\_dome\_area – pond\_area

dome\_area\_half = dome\_area\_minus\_pond / 2.0

pond\_concrete\_total = POND\_CONCRETE\_COST \* pond\_area

dome\_concrete\_total = DOME\_CONCRETE\_COST \* dome\_area\_minus\_pond

num\_seats = dome\_area\_half / 5.5

volume = 11.0 \* pond\_area

dome\_volume = ( (4.0/3.0) \* PI \*( pow (dome\_radius, 3) ) / 2.0

**Flowchart**

Start

Enter customer\_name, pond\_diameter

dome\_diameter = pond\_diameter \* 3.0

pond\_radius = pond\_diameter / 2.0

dome\_radius = dome\_diameter / 2.0

pond\_area = pow (pond\_radius, 2) \* PI

total\_dome\_area = pow (dome\_radius, 2) \* PI

dome\_area\_minus\_pond = total\_dome\_area – pond\_area

dome\_area\_half = dome\_area\_minus\_pond / 2.0

pond\_concrete\_total = POND\_CONCRETE\_COST \* pond\_area

dome\_concrete\_total = DOME\_CONCRETE\_COST \* dome\_area\_minus\_pond

num\_seats = dome\_area\_half / 5.5

volume = 11.0 \* pond\_area

dome\_volume = ( (4.0/3.0) \* PI \*( pow (dome\_radius, 3) ) / 2

Display customer\_name, pond\_diameter, dome\_diameter, pond\_area, dome\_area\_minus\_pond, pond\_concrete\_total, dome\_concrete\_total, volume, num\_seats, dome\_volume

Stop