PROBLEM

1. Write a program that computes and displays the perimeter and area of a circle when the radius is input by the user.

ANALYSIS

IPO Chart

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variable | Type | Input | Processing | Output |
| *radius* | Float | X |  | X |
| *perimeter* | Float |  | X | X |
| *area* | Float |  | X | X |

CONSTANTS

PI = 3.141593

FORMULAS

perimeter 🡨 2 x PI x radius

area 🡨 PI x radius x radius

TEST DATA

|  |  |  |  |
| --- | --- | --- | --- |
| # | radius | perimeter | area |
| 0 | 0.0000 | 0.0000 | 0.0000 |
| 1 | 11.0000 | 69.1150 | 380.1327 |
| 2 | 55.6540 | 349.6844 | 9730.6677 |
| 3 | 99.6000 | 626.2237 | 31206.7943 |

DESIGN (PSEUDOCODE)

**Declare** PI As Float Constant = 3.14

**Declare** radius, perimeter, area As Float

**Write** “Please Input the radius”

**Input** radius

**Set** perimeter 🡨 2 x PI x radius

**Set** area 🡨 PI x radius x radius

**Write** "The radius is: " + radius + " units"

**Write** "The perimeter equals: " + perimeter + " units"

**Write** "The area equals: " + area + " units^2"