Question 2

Input:-

Fixed input:

1. Pie, π, PI = 3.142

User’s input:

1. Circumference of the pizza in centimeter
2. Price of the pizza

Output:-

1. Circumference of the pizza in centimeter
2. Price of the pizza
3. Radius of the pizza
4. Price of the pizza per square centimeter

Problem analysis:-

The question required us to find the radius of the pizza and also the price of the pizza per square centimeter. Circumference of the pizza in centimeter and the price of the pizza are needed in order to find the radius of the pizza and the price of the pizza per square centimeter. First, enter the circumference of the pizza in centimeter and price of the pizza. Then, radius of the pizza will be calculated by using the formula.

radius = circumference / ( 2 \* PI )

The area is also calculated by using the following formula.

area = PI \* radius \* radius

The price of the pizza per square centimeter will also be calculated by using the formula.

pricepersq = price / area

Algorithm design:-

1. Get the circumference of the pizza in centimeter.
2. Get the price of the pizza.
3. Calculate the radius of the pizza.
   1. The formula for the radius of the pizza:

radius = circumference / ( 2 \* PI )

1. Calculate the area of the pizza.
   1. The formula for the area of the pizza:

area = PI \* radius \* radius

1. Calculate the price per centimeter square of the pizza.
   1. The formula for the price per centimeter square of the pizza:

pricepersq = price / area

1. Output the circumference of the pizza in centimeter.
2. Output the price of the pizza.
3. Output the radius of the pizza.
4. Output the price per centimeter square of the pizza.

Variables:-

1. double circumference – indicating the circumference of the pizza in centimeter.
2. double price – indicating the price of the pizza.
3. double radius – indicating the radius of the pizza.
4. double pricepersq – indicating the radius of the pizza.
5. const double PI = 3.142 – indicating the value of pie, π.

Named constants:-

1. Pie, π , PI = 3.142

Main algorithm:-

Pseudo code:

1. BEGIN
2. Prompt the user to input.
3. Get the circumference of the pizza in centimeter.
4. Get the price of the pizza.
5. Calculate the radius of the pizza.
   1. The formula for the radius of the pizza:

radius = circumference / ( 2 \* PI )

1. Calculate the area of the pizza.
   1. The formula for the area of the pizza:

area = PI \* radius \* radius

1. Calculate the price per centimeter square of the pizza.
   1. The formula for the price per centimeter square of the pizza:

pricepersq = price / area

1. Output the circumference of the pizza in centimeter.
2. Output the price of the pizza.
3. Output the radius of the pizza.
4. Output the price per centimeter square of the pizza.
5. END

Sample output:

Please enter the circumference of the pizza in centimeter: 100

Please enter the price of the pizza: 50

Circumference of the pizza in centimeter: 100

Price of the pizza: 50

Radius of the pizza in centimeter: 16.6667

Price of the pizza per square centimeter: 0.06