Program Requirements Document

CIS 022 Wednesday, February 8th, 2024

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| **Application/ Program name:** | PizzaPerSquareInchPriceFinder |
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| **Purpose or problem definition:** |
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| This program will prompt the user to enter the radius of the pizza, if the radius is negative or zero the program will display the prompt "Enter a radius greater than 0". If the user has entered anything other than numerical input, the program will prompt the user to re-enter their input as numerical data.  If the user has entered a radius greater than 0, the program will calculate the area of the radius to find the number of square inches based on the value the user gave for the radius. The program will prompt the user to enter the price of the pizza, if the radius is negative or zero the program will display the prompt "Enter a price greater than $0". If the user has entered a price greater than $0, the program will calculate the price of pizza per square inch with the square inches and pizza price based on the value the user gave for the price. Once calculations have been completed, the price of their pizza per square inch will then be displayed to the user. |

| **Program Procedures:** |
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| 1. Display prompt - Ask the user to enter the radius of the pizza. 2. Retrieves value of radius. 3. If pizza radius is negative or zero program will close and display the prompt "Enter a radius greater than 0". 4. Calculates the area of the pizza using the expression "r^2(π)" 5. Display prompt - Ask the user to enter the price of the pizza. 6. Retrieves value of pizza price 7. If pizza price is negative or zero program will close and display the prompt "Enter a radius greater than 0" 8. Calculates the price of a square inch of pizza by taking the total square inches/area of the pizza and dividing it by the price of the pizza. 9. Display prompt - Tell the user the price of a square inch of the pizza. 10. Exit the program. |

| **Algorithm/Processing/Conditions:** |
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| **Inputs:** |
| 1. The radius of the pizza 2. The total price of the pizza |
| **Processes:** |
| 1. Calculate the number of square inches of pizza by taking the radius^2 and multiplying it by pi. Add result to a variable. ***Formula: r^2(3.14159)*** 2. Calculate the price of a square inch of pizza by taking the variable from process 1 and dividing it by the value of the total pizza price. |
| **Outputs:** |
| 1. The price of a square inch of pizza. |

| **Notes & Restriction:** |
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| It is assumed that the radius of the pizza (inches) and price of pizza cannot be 0 or less.  It is assumed that the user will only be able to enter numerical input (decimals if needed)  r = radius, given by user  area (total square inches) must be found in order to proceed in finding the price of each square inch |

| **Comments:** |
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| Error handling in place for:   * User entering anything less than/equal to 0 * User entering non-numeric input |