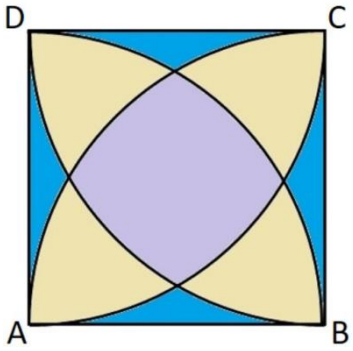
Programming Assignment 5: Riemann Sum--Sectors in Square

The following is a figure of sectors embedded in a square ABCD of side a. The four arcs are drawn by treating vertices A, B, C, and D as centers and a as the radius. The square is than partitioned into three areas as shown in three different colors blue, purple, and yellow. Write a C program to input a real number a as the side of the square and compute the area of the three areas using the Riemann sum approximation. Repeat the steps until the input side is 0.



The solution of the programming assignment is refer to proof_sectors_in_square.pdf. In this assignment, you must submit two files: the source code of the solution **assgn5_DXXXXXXX.c** (**80%**) and the assignment report **assgn5_DXXXXXXX.pdf** (**20%**), where **DXXXXXXX** is your student ID. The assignment report should explain how you solve the problem and include **pseudo code** and **flowchart** of your solution. Sample outputs: Programming assignment 5 is due by **11:59 pm, Sunday, December 11**. Submit your solution and the report to **iLearn2**.

Example of program execution:

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命令提示字元

D:\>sector_area
Enter the side of square a: 1
Area R1: 0.3151, Area R2: 0.5113 Area R3: 0.1736

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Enter the side of square a: 20
Area R1: 126.0587, Area R2: 204.5186 Area R3: 69.4227

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Enter the side of square a: 0.5
Area R1: 0.0788, Area R2: 0.1278 Area R3: 0.0434

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Enter the side of square a: 100
Area R1: 3151.4675, Area R2: 5112.9649 Area R3: 1735.5675

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Enter the side of square a: 0
微軟注音 半 :
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