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REPORT FOR CUT THE CAKE FOR A GIVEN VALUE OF N

AS A PROJECT WORK FOR THE COURSE

PYTHON PROGRAMMING (INT 108)

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SEMESTER: FIRST SEMESTER

**SCHOOL OF COMPUTER SCIENCE AND ENGINEERING
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INDIA.**

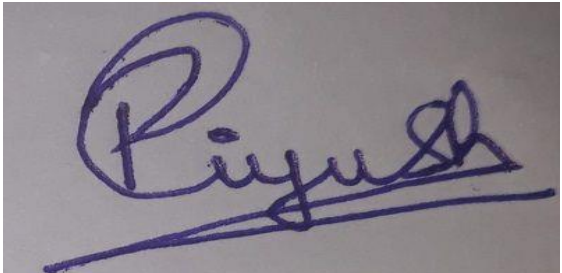
DECLARATION

I hereby Piyush Srivastava (Reg No. 12215551) declare that the project work reported entitled “CUT THE CAKE FOR A GIVEN VALUE OF N” in partial fulfilment of the requirement for the award of Degree for Bachelors of Technology in CSE at Lovely Professional University, Phagwara, Punjab is an authentic work carried out under supervision of my supervisor Ms. Manbir Kaur. The content of this project represents authentic and honest effort conducted, in its entirety, by me. I am fully responsible for the contents of my project work.

Student Name: Piyush Srivastava

Registration Number: 12215551

Student Signature:

A photograph of a handwritten signature in blue ink. The signature is written in a cursive style, starting with a large 'P' and ending with a horizontal line. The name 'Piyush' is clearly legible.

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PYTHON

1.1 INTRODUCTION:

Python is a high-level, interpreted, and general-purpose dynamic programming language that focuses on code readability. It has fewer steps when compare to Java and C. It was founded in 1991 by developer Guido Van Rossum. Python ranks among the most popular and fastest-growing language in the world. Python is a Powerful, flexible and easy-to-use language. In addition, the community is very active there. It is used in many organizations as it supports multiple programming paradigms. It also performs automatic memory management.

- Python has many reasons for being popular and in demand. A few of the reasons are mentioned below.
- Emphasis on code readability, shorter codes, ease of writing.
- Programmers can express logical concepts in fewer lines of code in comparison to languages such as C++ or Java.
- Python supports multiple programming paradigms, like object-oriented, imperative and functional programming or procedural.
- It provides extensive support libraries (Django for web development, Pandas for data analytics etc.)
- Dynamically typed language (Data type is based on value assigned)
- Philosophy is “Simplicity is the best”.

1.2 LOOPS/FUNCTION:

- **IF STATEMENT-:**

If statement is the most simple decision-making statement. It is used to decide whether a certain statement or block of statements will be executed or not i.e. if a certain condition is true then a block of statement is executed otherwise not.

Syntax:

if condition:

 # Statements to execute if

 # condition is true

- **STRING FORMAT-:**

Python string format() function has been introduced for handling complex string formatting more efficiently. Sometimes we want to make generalized print statements in that case instead of writing print statement every time we use the concept of formatting.

Syntax: { }.format(value)

1.3 PROJECT:

Our task is to find if it is possible to cut the cake in the below mentioned ways for a given value of N .

We have given an integer N and a cake which can be cut into pieces, each cut should be a straight line going from the center of the cake to its border. Also, the angle between any two cuts must be a positive integer. Two pieces are equal if their appropriate angles are equal.

The given cake can be cut in following three ways:

- Cut the cake into N equal pieces.
- Cut the cake into N pieces of any size.
- Cut the cake into N pieces such that no two of them are equal.

1.4 CODE:

```
File Edit Format Run Options Window Help
#User enters N i.e the number of pieces
N=int(input("Enter the value of N: "))

#if cake can be cut into N equal pieces
if 360%N==0:
    print("Yes it is possible to cut into N:{} equal pieces :D".format(N))
else:
    #else return No
    print("No it's not possible to cut into N:{} pieces :(".format(N))

#if cake can be cut into N pieces of any sizes
if N<=360:
    print("Yes you can cut cake in any size")
else:
    #else return No
    print("No you can't cut the cake in any size")

#if no two of pieces are equal
if (N*(N+1/2))<=360:
    print("Yes possible to cut with no two of them are equal in size")
else:
    #else return No
    print("Not possible to cut with no two of them equal in size")
```

1.5 RESULTS:

```
File Edit Shell Debug Options Window Help
Python 3.10.6 (tags/v3.10.6:9c7b4bd, Aug 1 2022, 21:53:49) [MSC v.1932 64 bit (AMD64)]
on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:\Users\PIYUSH SRIVASTAVA\AppData\Local\Programs\Python\Python310\python pro
ject.py
Enter the value of N: 3
Yes it is possible to cut into N:3 equal pieces :D
Yes you can cut cake in any size
Yes possible to cut with no two of them are equal in size
>>>
= RESTART: C:\Users\PIYUSH SRIVASTAVA\AppData\Local\Programs\Python\Python310\python pro
ject.py
Enter the value of N: 7
No it's not possible to cut into N:7 pieces :(
Yes you can cut cake in any size
Yes possible to cut with no two of them are equal in size
>>>
= RESTART: C:\Users\PIYUSH SRIVASTAVA\AppData\Local\Programs\Python\Python310\python pro
ject.py
Enter the value of N: 15
Yes it is possible to cut into N:15 equal pieces :D
Yes you can cut cake in any size
Yes possible to cut with no two of them are equal in size
>>>
= RESTART: C:\Users\PIYUSH SRIVASTAVA\AppData\Local\Programs\Python\Python310\python pro
ject.py
Enter the value of N: 19
No it's not possible to cut into N:19 pieces :(
Yes you can cut cake in any size
Not possible to cut with no two of them equal in size
>>>
= RESTART: C:\Users\PIYUSH SRIVASTAVA\AppData\Local\Programs\Python\Python310\python pro
ject.py
Enter the value of N: 22
No it's not possible to cut into N:22 pieces :(
Yes you can cut cake in any size
Not possible to cut with no two of them equal in size
>>>
= RESTART: C:\Users\PIYUSH SRIVASTAVA\AppData\Local\Programs\Python\Python310\python pro
ject.py
Enter the value of N: 29
No it's not possible to cut into N:29 pieces :(
Yes you can cut cake in any size
Not possible to cut with no two of them equal in size
>>>
= RESTART: C:\Users\PIYUSH SRIVASTAVA\AppData\Local\Programs\Python\Python310\python pro
ject.py
Enter the value of N: 40
Yes it is possible to cut into N:40 equal pieces :D
Yes you can cut cake in any size
Not possible to cut with no two of them equal in size
```