CS29003 Algorithms Laboratory
Class Test 1
Date: February 22, 2021

General instruction to be followed strictly

1. Do not use any global or static variable unless you are explicitly instructed so.
2. Do not use Standard Template Library (STL) of C++.
3. Use proper indentation in your code and comment.
4. **Name your file as `<roll_no>_test1`. For example, if your roll number is 14CS10001, then name your file as `14CS10001_test1.c` or `14CS10001_test1.cpp` as applicable.**
5. **Write your name, roll number, and assignment number at the beginning of your program.**
6. Make your program as efficient as possible. Follow best practices of programming.
7. Submit your program on Moodle before deadline. Submissions by email or any other means will NOT be considered for evaluation.

There are n objects. You have a circular container. Each object is a pie which can fit in your container only from a start angle from an end angle. Angles are in degrees and in the range from 0 to 360. For example, an object may fit only from 20° to 40°. You cannot put two objects in your container if they overlap, that is the start degree of one object is not more than the end degree of other object. For example, an object from 20° to 40° overlaps with another object from 30° to 50° and also overlaps with another object from 40° to 70° and thus you cannot have both these objects. You want to take as many objects as possible. Write a program which takes n objects each with a start degree and an end degree and outputs the maximum number objects that you can take. Also take n as input from the users. Hint: use greedy algorithms.

Submit a single .c or .cpp file. Your code should get compiled properly by gcc or g++ compiler.

Sample Output

```
palash@palash-ThinkPad-X1-Yoga-3rd:~$ ./a.out
Write the number of objects: 5
Write the start and end angles of 5 objects
start=350 end=30
start=40 end=50
start=20 end=80
start=70 end=100
start=90 end=110
Objects selected:
start=350 end=30
start=40 end=50
start=70 end=100
palash@palash-ThinkPad-X1-Yoga-3rd:~$
```

Policy on Plagiarism

Academic integrity is expected from all the students. Ideally, you should work on the assignment/exam consulting only the material we share with you. You are required to properly mention/cite anything else you look at. Any student submitting plagiarised code will be penalised heavily. Repeated violators of our policy will be deregistered from the course. Read this to know what is plagiarism.