Haven's Light is Our Guide
Rajshahi University of Engineering & Technology
Department of Computer Science & Engineering
Couse No. **CSE 2102**

Lab01 :Problem

Suppose we have a group of proposed talks with preset start and end times. Design an algorithm to schedule as the largest possible combined attendance of the scheduled talks, under the assumptions that once a talk starts, it continues until it ends, no two talks can proceed at the same time, and a talk can begin at the same time another one ends. Assume that talk j begins at time s_j (where s stands for start) and ends at time e_j (where e stands for end).

Example: Consider seven talks with these start times, end times and number of attendances,

Talk 1: start 8 a.m., end 10 a.m., attendance = 35

Talk 2: start 9 a.m., end 11 a.m., attendance = 30

Talk 3: start 10:30 a.m., end 12 noon, attendance = 25

Talk 4: start 9:30 a.m., end 1 p.m., attendance = 20

Talk 5: start 8:30 a.m., end 2 p.m., attendance = 15

Talk 6: start 11 a.m., end 2 p.m., attendance = 10

Talk 7: start 1 p.m., end 2 p.m., attendance = 5

Solution: selected talk = {1,3,7}, total attendance = 65

Input:

> First n indicate number of talk (n=0 indicates end of file), next n line contains talk number (<100), start times (24H format), end time (24H format) and attendance number (<=1000).

Output:

> Print selected talk no. and total attendances

Sample input output:

Input	Output
7 1 8.00 10.00 35 2 9.00 11.00 30	1 3 7 65

3 10.30 12.00 25 4 9.30 13.00 20 5 8.30 14.00 15 6 11.00 14.00 10 7 13.00 14.00 5 0	

Haven's Light is Our Guide
Rajshahi University of Engineering & Technology
Department of Computer Science & Engineering
Couse No. **CSE 2102**

Problem 2

Rahim is a student of department of CSE, RUET. He loves to play with numbers. One day he thought of a number x that is generated from the multiplication of only two prime numbers (a and b, a < b) and another number y that is generated from the addition of those two prime number. Now he finds another number z that is the largest term from the binomial expansion of $(x + y)^n$ where n is the ceiled average of a and b.

Input:

Only a single integer m.

Output:

Print the prime numbers a, b and final result z (mod 1000). Here a and b can be any prime number less than m. Print the result for all possible combination of a, b.

Sample Input	Sample Output
10	2 3 216 2 5 0 2 7 824 3 5 625 3 7 101 5 7 625

Explanation:
The prime numbers that are less than 10 are 2, 3, 5, 7
If a = 3 and b = 5, then
x = 3*5 = 15
y = 3+5 = 8
n = (3+5)/2 = 4

Now, expand $(x + y)^n$ to get the terms and find the largest term.

N.B.: Think before you code. Best of luck.