



Computer Science Olympiad
Pennsylvania State University
Hazleton Campus
Spring 2015

Deadline: April 30, 2015

Let A_n be the set of all decimal (base 10) positive n -digits integers, $1 \leq n \leq 20$, having the following properties:

- The numbers of A_n consist only of 0s and 1s.
- The numbers of A_n do not contain two adjacent 0s.
- The numbers of A_n do not contain three adjacent 1s.

Example: $n = 5$, $A_5 = \{10101, 10110, 11010, 11011\}$

Write a program that solves the following programming problem for a given value of n .

Problem. Generate and display all numbers of A_n .

Input data: n , $1 \leq n \leq 20$.