CSC332  Fall 2018       HW4 (Race Conditions)  
Due: Nov 19  
  
In these questions, assume C++ semantics on arithmetic operations. So Maxint+1 is   
Does not generate an error; instead, the value is (–Maxint-1), i.e., most negative integer.  
  
Q1.  
Consider the following code.  
  
                        i=40;  
  
                        cobegin  
  
S11:    while (i > 1)                   S21:    while (i > 5)  
  
S12:            i= i - 1;                       S22:            i= i - 1;  
  
                        coend;  
          
                        print(i);

Ans:

          
What are all the possibilities regarding the output from this program?  
Give a scenario for each such possibility.  
  
Q2. Consider the following code.  
  
  
                        i=5;  
  
                        cobegin  
  
  
S11:    while i > -1 do                 S21:    while i < 1 do  
  
S12:            i= i - 1;               S22:            i= i+1;  
  
  
                        coend;  
          
                        print(i);  
                  
  
What are all the possibilities regarding the output from this program?  
Give a scenario for each such possibility.  
  
  
Q3.  
Consider the following code.  
  
  
                x=1;  
                i=1;  
                cobegin  
S11:    while (i< 4)            S21:    while (i< 4)  
        { S12: x= x\*2;                  { S22: x= x\*2;  
          S13: i= i+1;                     S23: i= i+1;  
        }                                       }         
  
                coend;  
                print(x);  
  
a) What is the MINIMUM value printed?  
  
(b) What is the MAXIMUM value printed?  
  
                                          
Q4.  
Consider the following code.  
  
                int i, j;  
                i=100;  
                j=100;  
  
                cobegin  
  
S11:    while (i==j)            S21:    while (i==j)   
S12:            i= i +1;                S22:            j= j +1;  
  
                coend;  
                print(i);  
                  
What are all the possibilities regarding the output from this program?  
Give a scenario (specific sequences of events, or a generic forms of such sequences) for each such possibility.