Procedure ForwardBackwardSASG (s,k)
{
  //This procedure generates semi active schedules through a Forward Backward semi-active generator method
  //s is the output schedule and k is a parameter controlling the diversity of schedules
  Initialize forward_BinaryHeap with the first operations of each job;
  Initialize backward_BinaryHeap with the last operations of each job;
  Set direction to FORWARD;
  while (there is an unscheduled operation)
  {
    if (direction==FORWARD)
      From the top k elements of forward_BinaryHeap chose an unscheduled operation, o, at random;
    else //direction is equal to BACKWARD
      From the top k elements of backward_BinaryHeap, chose an unscheduled operation, o, at random;
    Schedule the operation o and update the solution s.
    Add the successors (predecessors) of the operation o to the forward (backward) binaryHeap;
    direction=!direction;  //reversing the direction from Forward to Backward and vice versa
  }
}//end of procedure