Algorithm 1 Test Case Generation

Input: FUT (focal method under test), STC (seed test case) [might be None], maxGenCnt (maximum generation count), maxStallLen (maximum stall Length)
Output: An archive of test cases
genCnt ← 0
stallLen ← 0
if STC is None **then**
  while genCnt ≤ maxGenCnt **do**
    STC ← LLM(FUT + Strategy_Two)
    genCnt ← genCnt + 1
    if STC is not passed **then**
      STC, X ← feedbackToLLM(NTC)
      genCnt ← genCnt + X
    else
      break
    end if
    if STC is passed **then**
      break
    end if
  end while
end if
if STC is None **then**
  return [] {The empty tcArchive}
end ifcoverageMax ← calCoverage(STC) tcArchive ← [STC] coverageBefore ← calCoverage(tcArchive)
while genCnt ≤ maxGenCnt **do**
  if stallLen < maxStallLen **then**
    NTC ← LLM(FUT + STC + Strategy_One)
  else
    NTC ← LLM(FUT + Strategy_Two)
  end if
  if NTC is not passed **then**
    NTC, X ← feedbackToLLM(NTC)
  end if
  if NTC is not passed **then**
    genCnt ← genCnt + X
    continue
  end if
  if calCoverage(NTC) > coverageMax **then**
    STC ← NTC
    coverageMax ← calCoverage(NTC)
  end ifcoverageNow ← calCoverage(tcArchive + NTC)
  if coverageNow == coverageBefore **then**
    stallLen ← stallLen + 1
  else
    tcArchive ← tcArchive + NTC
    coverageBefore ← coverageNow
    stallLen ← 0
  end if
  genCnt ← genCnt + 1
end while
return tcArchive