Algorithm 3 Decompose

function DECOMPOSE(Region r, a set of turnning points P, threshold T_{shape})
  if r is concave **then**
    let $R(r)$ be the **MBR** of r;
    select a *turning point* $t \in P$ on r's boundary, such that t is closer to the middle of r;
    draw a splitting line perpendicular to the longer dimension d to divide r into two or more regions: $\{r_i\}$;
    for each r_i in $\{r_i\}$ **do**
      `Decompose(`r_i`,` $P - \{t\}$`,` T_{shape}`);`
  else
    if $\frac{len(R(r)_1)}{len(R(r)_2)} > T_{shape}$ or $\frac{len(R(r)_1)}{len(R(r)_2)} < T_{shape}$ **then**
      find the middle point m on r's longer dimension d;
      draw a splitting line perpendicular to d to divide r into two regions: r_1 and r_2;
      `Decompose(`r_1`,` P`,` T_{shape}`);`
      `Decompose(`r_2`,` P`,` T_{shape}`);`