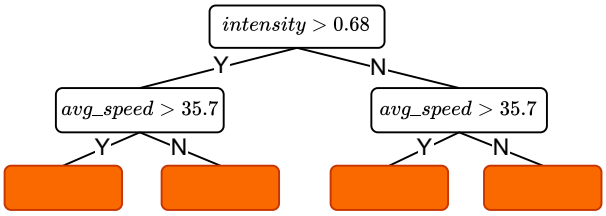
Step 1 : Generate a permutation $\sigma$ of the dataset

| $\sigma$ | $y(avg\_power\_comb)$ | $intensity$ | $avg\_speed$ | $type$ |
|---|---|---|---|---|
| 2 | 253 | 0.7 | 42 | mixed |
| 4 | 258 | 0.83 | 35.7 | sprinter |
| 1 | 265 | 0.84 | 44.8 | sprinter |
| 3 | 228 | 0.62 | 26.1 | climber |
| 5 | 242 | 0.68 | 33 | mixed |

Note 1 : A model $M_i^{t-1}$ consist of a symmetric decision tree. Those have the same splitting criterion at each level.




Step 2 : Sort the dataset in order of (\sigma\) and calculate the models $M_i^{t-1}$ using only $1, \ldots, i$ observations of the dataset

| $\sigma$ | $y(avg\_power\_comb)$ | $intensity$ | $avg\_speed$ | $type$ |
|---|---|---|---|---|
| 1 | 265 | 0.84 | 44.8 | sprinter |
| 2 | 253 | 0.7 | 42 | mixed |
| 3 | 228 | 0.62 | 26.1 | climber |
| 4 | 258 | 0.83 | 35.7 | sprinter |
| 5 | 242 | 0.68 | 33 | mixed |

$\rightarrow M_4^{t-1}$ Note 1

Step 4 : Calculate the residuals of the $i$-th observation using the only the knowledge of model $M_{i-1}^{t-1}$ for the prediction of $\hat{y}_i$

$\rightarrow r^t(\mathbf{x}_5, y_5) = y_5 - M_4^{t-1}(\mathbf{x}_5)$