

OUTPUT

The following output has been observed for Apriori and FPGrowth, and their output on the shell window is copied here for reference.

Apriori output:

```
{0, }
{9, }
{40, }
{<=50K, }
{White, }
{HS-grad, }
{Married-civ-spouse, }
{Private, }
{Husband, }
{Never-married, }
{United-States, }
{Male, }
{Female, }
{Not-in-family, }
{>50K, }
{0, 9, }
{0, 40, }
{0, <=50K, }
{0, White, }
{0, HS-grad, }
{0, Married-civ-spouse, }
{0, Private, }
{0, Husband, }
{0, Never-married, }
{0, United-States, }
{0, Male, }
{0, Female, }
{0, Not-in-family, }
{0, >50K, }
{9, <=50K, }
{9, White, }
{9, HS-grad, }
{9, Private, }
{9, United-States, }
{40, <=50K, }
{40, White, }
{40, Private, }
{40, United-States, }
{40, Male, }
{<=50K, White, }
{<=50K, HS-grad, }
{<=50K, Married-civ-spouse, }
{<=50K, Private, }
{<=50K, Never-married, }
{<=50K, United-States, }
{<=50K, Male, }
{<=50K, Female, }
```

{White, HS-grad, }
{White, Married-civ-spouse, }
{White, Private, }
{White, Husband, }
{White, Never-married, }
{White, United-States, }
{White, Male, }
{White, Female, }
{HS-grad, Private, }
{HS-grad, United-States, }
{Married-civ-spouse, Private, }
{Married-civ-spouse, Husband, }
{Married-civ-spouse, United-States, }
{Married-civ-spouse, Male, }
{Private, Husband, }
{Private, Never-married, }
{Private, United-States, }
{Private, Male, }
{Private, Female, }
{Husband, United-States, }
{Husband, Male, }
{Never-married, United-States, }
{United-States, Male, }
{United-States, Female, }
{United-States, Not-in-family, }
{0, 9, <=50K, }
{0, 9, White, }
{0, 9, HS-grad, }
{0, 9, Private, }
{0, 9, United-States, }
{0, 40, <=50K, }
{0, 40, White, }
{0, 40, Private, }
{0, 40, United-States, }
{0, 40, Male, }
{0, <=50K, White, }
{0, <=50K, HS-grad, }
{0, <=50K, Married-civ-spouse, }
{0, <=50K, Private, }
{0, <=50K, Never-married, }
{0, <=50K, United-States, }
{0, <=50K, Male, }
{0, <=50K, Female, }
{0, White, HS-grad, }
{0, White, Married-civ-spouse, }
{0, White, Private, }
{0, White, Husband, }
{0, White, Never-married, }
{0, White, United-States, }
{0, White, Male, }
{0, White, Female, }
{0, HS-grad, Private, }

{0, HS-grad, United-States, }
{0, Married-civ-spouse, Private, }
{0, Married-civ-spouse, Husband, }
{0, Married-civ-spouse, United-States, }
{0, Married-civ-spouse, Male, }
{0, Private, Husband, }
{0, Private, Never-married, }
{0, Private, United-States, }
{0, Private, Male, }
{0, Private, Female, }
{0, Husband, United-States, }
{0, Husband, Male, }
{0, Never-married, United-States, }
{0, United-States, Male, }
{0, United-States, Female, }
{0, United-States, Not-in-family, }
{9, <=50K, HS-grad, }
{9, <=50K, United-States, }
{9, White, HS-grad, }
{9, White, United-States, }
{9, HS-grad, Private, }
{9, HS-grad, United-States, }
{40, <=50K, White, }
{40, <=50K, Private, }
{40, <=50K, United-States, }
{40, <=50K, Male, }
{40, White, Private, }
{40, White, United-States, }
{40, White, Male, }
{40, Private, United-States, }
{40, Private, Male, }
{40, United-States, Male, }
{<=50K, White, Private, }
{<=50K, White, Never-married, }
{<=50K, White, United-States, }
{<=50K, White, Male, }
{<=50K, White, Female, }
{<=50K, HS-grad, United-States, }
{<=50K, Private, Never-married, }
{<=50K, Private, United-States, }
{<=50K, Private, Male, }
{<=50K, Never-married, United-States, }
{<=50K, United-States, Male, }
{<=50K, United-States, Female, }
{White, HS-grad, United-States, }
{White, Married-civ-spouse, Private, }
{White, Married-civ-spouse, Husband, }
{White, Married-civ-spouse, United-States, }
{White, Married-civ-spouse, Male, }
{White, Private, Husband, }
{White, Private, United-States, }
{White, Private, Male, }

{White, Husband, United-States, }
{White, Husband, Male, }
{White, Never-married, United-States, }
{White, United-States, Male, }
{White, United-States, Female, }
{Married-civ-spouse, Private, Husband, }
{Married-civ-spouse, Private, United-States, }
{Married-civ-spouse, Private, Male, }
{Married-civ-spouse, Husband, United-States, }
{Married-civ-spouse, Husband, Male, }
{Married-civ-spouse, United-States, Male, }
{Private, Husband, United-States, }
{Private, Husband, Male, }
{Private, United-States, Male, }
{Husband, United-States, Male, }
{0, 9, <=50K, HS-grad, }
{0, 9, <=50K, United-States, }
{0, 9, White, HS-grad, }
{0, 9, White, United-States, }
{0, 9, HS-grad, Private, }
{0, 9, HS-grad, United-States, }
{0, 40, <=50K, White, }
{0, 40, <=50K, Private, }
{0, 40, <=50K, United-States, }
{0, 40, <=50K, Male, }
{0, 40, White, Private, }
{0, 40, White, United-States, }
{0, 40, White, Male, }
{0, 40, Private, United-States, }
{0, 40, Private, Male, }
{0, 40, United-States, Male, }
{0, <=50K, White, Private, }
{0, <=50K, White, Never-married, }
{0, <=50K, White, United-States, }
{0, <=50K, White, Male, }
{0, <=50K, White, Female, }
{0, <=50K, HS-grad, United-States, }
{0, <=50K, Private, Never-married, }
{0, <=50K, Private, United-States, }
{0, <=50K, Private, Male, }
{0, <=50K, Never-married, United-States, }
{0, <=50K, United-States, Male, }
{0, <=50K, United-States, Female, }
{0, White, HS-grad, United-States, }
{0, White, Married-civ-spouse, Private, }
{0, White, Married-civ-spouse, Husband, }
{0, White, Married-civ-spouse, United-States, }
{0, White, Married-civ-spouse, Male, }
{0, White, Private, Husband, }
{0, White, Private, United-States, }
{0, White, Private, Male, }
{0, White, Husband, United-States, }

{0, White, Husband, Male, }
{0, White, Never-married, United-States, }
{0, White, United-States, Male, }
{0, White, United-States, Female, }
{0, Married-civ-spouse, Private, Husband, }
{0, Married-civ-spouse, Private, United-States, }
{0, Married-civ-spouse, Private, Male, }
{0, Married-civ-spouse, Husband, United-States, }
{0, Married-civ-spouse, Husband, Male, }
{0, Married-civ-spouse, United-States, Male, }
{0, Private, Husband, United-States, }
{0, Private, Husband, Male, }
{0, Private, United-States, Male, }
{0, Husband, United-States, Male, }
{9, <=50K, HS-grad, United-States, }
{9, White, HS-grad, United-States, }
{40, <=50K, White, United-States, }
{40, <=50K, Private, United-States, }
{40, White, Private, United-States, }
{40, White, United-States, Male, }
{<=50K, White, Private, United-States, }
{<=50K, White, Private, Male, }
{<=50K, White, Never-married, United-States, }
{<=50K, White, United-States, Male, }
{<=50K, Private, United-States, Male, }
{White, Married-civ-spouse, Private, Husband, }
{White, Married-civ-spouse, Private, United-States, }
{White, Married-civ-spouse, Private, Male, }
{White, Married-civ-spouse, Husband, United-States, }
{White, Married-civ-spouse, Husband, Male, }
{White, Married-civ-spouse, United-States, Male, }
{White, Private, Husband, Male, }
{White, Private, United-States, Male, }
{White, Husband, United-States, Male, }
{Married-civ-spouse, Private, Husband, United-States, }
{Married-civ-spouse, Private, Husband, Male, }
{Married-civ-spouse, Private, United-States, Male, }
{Married-civ-spouse, Husband, United-States, Male, }
{Private, Husband, United-States, Male, }
{0, 9, <=50K, HS-grad, United-States, }
{0, 9, White, HS-grad, United-States, }
{0, 40, <=50K, White, United-States, }
{0, 40, <=50K, Private, United-States, }
{0, 40, White, Private, United-States, }
{0, 40, White, United-States, Male, }
{0, <=50K, White, Private, United-States, }
{0, <=50K, White, Private, Male, }
{0, <=50K, White, Never-married, United-States, }
{0, <=50K, White, United-States, Male, }
{0, <=50K, Private, United-States, Male, }
{0, White, Married-civ-spouse, Private, Husband, }
{0, White, Married-civ-spouse, Private, United-States, }

{0, White, Married-civ-spouse, Private, Male, }
 {0, White, Married-civ-spouse, Husband, United-States, }
 {0, White, Married-civ-spouse, Husband, Male, }
 {0, White, Married-civ-spouse, United-States, Male, }
 {0, White, Private, Husband, Male, }
 {0, White, Private, United-States, Male, }
 {0, White, Husband, United-States, Male, }
 {0, Married-civ-spouse, Private, Husband, United-States, }
 {0, Married-civ-spouse, Private, Husband, Male, }
 {0, Married-civ-spouse, Private, United-States, Male, }
 {0, Married-civ-spouse, Husband, United-States, Male, }
 {0, Private, Husband, United-States, Male, }
 {<=50K, White, Private, United-States, Male, }
 {White, Married-civ-spouse, Private, Husband, Male, }
 {White, Married-civ-spouse, Husband, United-States, Male, }
 {Married-civ-spouse, Private, Husband, United-States, Male, }
 {0, <=50K, White, Private, United-States, Male, }
 {0, White, Married-civ-spouse, Private, Husband, Male, }
 {0, White, Married-civ-spouse, Husband, United-States, Male, }
 {0, Married-civ-spouse, Private, Husband, United-States, Male, }
 The runtime is 154 seconds.

EPGrowth:

{Male, 0, Husband, White, Married-civ-spouse, }
 {Male, 0, Husband, United-States, Married-civ-spouse, }
 {Never-married, 0, }
 {Husband, Private, United-States, }
 {Husband, Private, United-States, 0, }
 {Married-civ-spouse, Private, Male, }
 {United-States, 9, <=50K, }
 {Male, Husband, Private, United-States, Married-civ-spouse, }
 {Male, Private, United-States, }
 {0, 9, <=50K, }
 {0, Never-married, United-States, }
 {0, <=50K, United-States, }
 {Male, Husband, Married-civ-spouse, }
 {40, <=50K, 0, }
 {Male, Private, <=50K, White, }
 {United-States, 40, Male, White, }
 {Husband, Private, White, 0, }
 {United-States, 0, Private, White, }
 {United-States, 0, 40, Male, White, }
 {United-States, 0, Male, Private, <=50K, White, }
 {Husband, United-States, }
 {0, Private, <=50K, White, }
 {United-States, 0, 9, <=50K, }
 {9, United-States, }
 {Husband, White, Married-civ-spouse, }
 {Husband, United-States, Married-civ-spouse, }
 {0, 40, Private, White, }
 {40, Male, White, }
 {United-States, Private, White, }

{0, Private, White, }
{>50K, }
{0, Private, United-States, }
{0, 40, Private, United-States, }
{40, Male, United-States, }
{0, 40, <=50K, United-States, }
{<=50K, 0, Never-married, United-States, }
{40, White, }
{<=50K, 0, }
{Male, Husband, Private, White, Married-civ-spouse, }
{United-States, 0, Male, Private, White, }
{40, United-States, }
{10, }
{0, 40, Male, <=50K, }
{0, Married-civ-spouse, White, }
{Female, White, 0, }
{0, Husband, Private, Married-civ-spouse, }
{United-States, Male, Private, White, }
{HS-grad, Private, }
{9, White, }
{40, Male, Private, }
{0, }
{40, Private, }
{United-States, 0, <=50K, White, }
{Private, 0, }
{Husband, White, }
{0, Private, <=50K, United-States, }
{9, }
{Male, White, }
{Never-married, <=50K, }
{Male, Husband, Private, Married-civ-spouse, }
{0, <=50K, White, }
{0, HS-grad, 9, }
{Never-married, White, <=50K, }
{HS-grad, White, }
{Husband, United-States, White, }
{Male, }
{Female, White, <=50K, }
{9, Private, }
{Male, Private, }
{0, Female, <=50K, }
{9, HS-grad, <=50K, }
{Married-civ-spouse, Male, United-States, }
{Male, <=50K, United-States, }
{White, Married-civ-spouse, Private, Male, }
{United-States, }
{0, Married-civ-spouse, Private, United-States, Male, }
{0, Husband, Male, }
{0, 40, Male, Private, }
{Married-civ-spouse, Private, United-States, Male, }
{0, Married-civ-spouse, Private, United-States, White, }
{HS-grad, 0, }

{40, Private, <=50K, }
{Male, <=50K, White, }
{0, Female, United-States, }
{United-States, White, }
{0, Never-married, Private, }
{Private, <=50K, }
{HS-grad, 9, }
{<=50K, 0, Never-married, Private, }
{Husband, Married-civ-spouse, }
{Husband, United-States, White, 0, }
{United-States, 0, White, }
{Husband, Private, Married-civ-spouse, }
{40, }
{0, Husband, United-States, White, Male, }
{0, HS-grad, <=50K, }
{0, 9, Private, }
{0, Male, Private, <=50K, United-States, }
{Married-civ-spouse, Private, United-States, 0, }
{0, Never-married, White, <=50K, }
{Male, 0, Husband, Private, United-States, Married-civ-spouse, }
{0, Married-civ-spouse, United-States, }
{Husband, White, 0, }
{Male, Husband, United-States, White, Married-civ-spouse, }
{Female, }
{Husband, Private, }
{9, 0, HS-grad, <=50K, }
{United-States, 0, Male, White, }
{Married-civ-spouse, <=50K, }
{Married-civ-spouse, Male, White, }
{United-States, 0, Female, <=50K, }
{United-States, 0, 40, Private, <=50K, }
{United-States, 0, Male, <=50K, White, }
{Female, Private, }
{Husband, }
{40, Male, <=50K, }
{United-States, <=50K, White, }
{White, }
{40, Male, }
{9, 0, }
{9, 0, HS-grad, White, }
{Husband, Private, Male, }
{Male, Husband, White, Married-civ-spouse, }
{Husband, Private, White, Male, }
{HS-grad, }
{Male, Private, <=50K, United-States, }
{United-States, Female, <=50K, }
{0, Husband, Private, United-States, Married-civ-spouse, }
{0, Husband, United-States, Male, }
{United-States, Male, White, }
{HS-grad, United-States, }
{9, HS-grad, Private, }
{40, 0, }

{Male, Private, White, }
{Male, <=50K, }
{Husband, United-States, White, Male, }
{Husband, Private, 0, }
{Married-civ-spouse, Private, White, }
{Male, 0, }
{United-States, 40, <=50K, White, }
{0, Male, Private, <=50K, White, }
{<=50K, Never-married, United-States, }
{Female, White, United-States, }
{<=50K, 0, Never-married, White, United-States, }
{0, Male, United-States, }
{0, Female, White, <=50K, }
{Husband, White, Male, }
{0, 40, Male, United-States, }
{Female, <=50K, }
{Never-married, White, }
{Husband, United-States, Male, }
{Male, 0, Husband, Married-civ-spouse, }
{Married-civ-spouse, Private, }
{Married-civ-spouse, Male, 0, }
{9, 0, HS-grad, Private, }
{Private, <=50K, White, }
{Male, Private, <=50K, }
{40, Private, White, }
{9, HS-grad, White, }
{Male, Private, <=50K, 0, }
{White, 0, Married-civ-spouse, Private, Male, }
{0, HS-grad, Private, }
{Male, 0, Husband, United-States, White, Married-civ-spouse, }
{Never-married, United-States, }
{40, <=50K, White, }
{United-States, 0, 40, Private, White, }
{United-States, 0, HS-grad, White, }
{9, HS-grad, United-States, }
{White, 0, Married-civ-spouse, Male, United-States, }
{Husband, United-States, 0, }
{0, Married-civ-spouse, Private, Male, }
{Never-married, White, United-States, }
{Married-civ-spouse, White, }
{Never-married, }
{0, Husband, White, Married-civ-spouse, }
{0, Husband, United-States, Married-civ-spouse, }
{Married-civ-spouse, Private, United-States, }
{0, 40, White, }
{0, White, }
{Husband, Private, White, Married-civ-spouse, }
{0, Not-in-family, }
{0, Husband, Private, White, Male, }
{United-States, 0, 40, <=50K, White, }
{<=50K, }
{United-States, 0, Private, <=50K, White, }

{0, HS-grad, White, }
{<=50K, White, }
{Husband, 0, }
{0, Husband, Private, United-States, Male, }
{<=50K, Never-married, White, United-States, }
{Husband, Private, United-States, Married-civ-spouse, }
{0, Male, White, }
{0, Never-married, <=50K, }
{0, Married-civ-spouse, Male, United-States, }
{0, Male, <=50K, United-States, }
{United-States, 9, 0, HS-grad, White, }
{0, Male, Private, United-States, }
{United-States, 9, HS-grad, White, }
{Female, 0, }
{Husband, United-States, White, Married-civ-spouse, }
{Private, White, }
{Married-civ-spouse, Private, United-States, White, }
{0, 9, White, }
{United-States, 9, White, }
{0, Never-married, White, United-States, }
{United-States, 9, HS-grad, <=50K, }
{Male, 0, Husband, Private, Married-civ-spouse, }
{Never-married, White, 0, }
{0, Male, Private, White, }
{Married-civ-spouse, 0, }
{0, Married-civ-spouse, <=50K, }
{0, HS-grad, United-States, }
{0, Married-civ-spouse, Male, White, }
{United-States, 0, 9, White, }
{40, Private, United-States, }
{United-States, 40, Private, <=50K, }
{United-States, Male, <=50K, White, }
{Female, White, }
{Male, 0, Husband, Private, White, Married-civ-spouse, }
{Male, <=50K, 0, }
{9, 0, HS-grad, United-States, }
{United-States, 0, Not-in-family, }
{Husband, Male, }
{0, Husband, Private, Male, }
{United-States, Male, Private, <=50K, White, }
{Married-civ-spouse, Male, }
{United-States, HS-grad, <=50K, }
{Private, <=50K, United-States, }
{0, >50K, }
{0, Husband, Married-civ-spouse, }
{0, Female, White, United-States, }
{Male, Husband, United-States, Married-civ-spouse, }
{40, <=50K, United-States, }
{United-States, 0, 40, White, }
{Never-married, Private, }
{Female, United-States, }
{White, Married-civ-spouse, Male, United-States, }

{0, 40, <=50K, White, }
{United-States, 0, HS-grad, <=50K, }
{Husband, Private, White, }
{Male, Private, 0, }
{0, Husband, United-States, White, Married-civ-spouse, }
{Male, United-States, }
{0, Male, <=50K, White, }
{0, 40, Private, <=50K, }
{40, Private, 0, }
{40, <=50K, }
{United-States, Private, <=50K, White, }
{United-States, 9, 0, HS-grad, <=50K, }
{Husband, Private, United-States, Male, }
{Married-civ-spouse, United-States, }
{Private, United-States, }
{United-States, HS-grad, White, }
{United-States, 40, White, }
{0, 40, Male, White, }
{Married-civ-spouse, }
{0, Husband, Private, White, Married-civ-spouse, }
{HS-grad, <=50K, }
{0, 9, United-States, }
{Married-civ-spouse, Private, 0, }
{0, Female, Private, }
{Not-in-family, }
{0, 40, United-States, }
{0, Husband, White, Male, }
{Private, <=50K, 0, }
{White, 0, Married-civ-spouse, United-States, }
{0, United-States, }
{United-States, Not-in-family, }
{0, Married-civ-spouse, Private, White, }
{Private, }
{United-States, 40, Private, White, }
{<=50K, United-States, }
{9, <=50K, }
{<=50K, Never-married, Private, }
{40, Male, 0, }
{White, Married-civ-spouse, United-States, }
The runtime is 1.503 seconds