

Step I: Type Inference Location Extraction (TILE) Algorithm

Source Code

```
1 public SimpleDateFormat(String pattern) {  
2     this (  
3         pattern,  
4         Locale.getDefault(Locale.Category.FORMAT)  
5     );  
6 }
```

Annotated Code

```
1 public SimpleDateFormat( [blank].String pattern) {  
2     [blank].SimpleDateFormat (  
3         pattern,  
4         [blank].Locale.getDefault(Locale.Category.FORMAT)  
5     );  
6 }
```

TILE
~>

java.text

java.util

java.lang

Step II: Training Data Prep. for Infilling Language Model (ILM)

ILM Input public SimpleDateFormat ([blank].String pattern) { [blank].SimpleDateFormat ... Locale.Category.FORMAT)); }

ILM Target java.lang [a-sep] java.text [a-sep] java.util [a-sep]

Step III: FQN Resolution with ILM Framework

Given code

Predicting

ILM Input

Output
with FQNs

Causal Language
Model (CLM)

ILM Target

Training

ILM Input
[sep]

ILM Target