



Fig. 6. A simple Java code snippet (the left part) and its corresponding CSN_{WD} (the right part). The text beside each link denotes the coupling types (i.e., CS) that the link represents, the frq_c of each coupling c , the formula to compute the weight associated with each link, and the s_c of each coupling c .

APPENDIX A A SIMPLE EXAMPLE

Figure 6 gives a simple example to illustrate the idea to build the CSN_{WD} for a Java code snippet. There is one interface (viz. `Song`) and four classes (viz. `Composer`, `Copyright`, `Propaganda`, and `Company`) defined in the Java code snippet, and thus we can create five nodes in the CSN_{WD}. Besides, the interface and classes are coupled through ten couplings that have been marked explicitly using comments `“/**/”` in the code snippet. For example, there exist five couplings from `Propaganda` class to `Company` class, i.e., one instance of `GVA` coupling (cf. `private Company myCompany; /*GVA*/`), one instance of `PAR` coupling (cf. `public void setCompany(Company company/*PAR*/)`), two instances of `ACC` couplings (cf. `company.cCnt++/*ACC*/;` and `myCompany.cCnt++/*ACC*/;`), and one instance of `MEC` coupling (cf. `myCompany.desc()/*MEC*/;`). Thus, we can create a link from the node of `Propaganda` class to the node of `Company` class. Note that though there exist five couplings, we keep only one (cf. Definition 1). Then, the weight associated with this link is computed by $w(Propaganda, Company) = 1 \times s_{GVA} + 1 \times s_{PAR} + 2 \times s_{ACC} + 1 \times s_{MEC}$. If we use DWM to assign the weights, then $w(Propaganda, Company) = 1 \times 1 + 1 \times 1 + 2 \times 1 + 1 \times 1 = 5$. Other links in the CSN_{WD} can be similarly created.