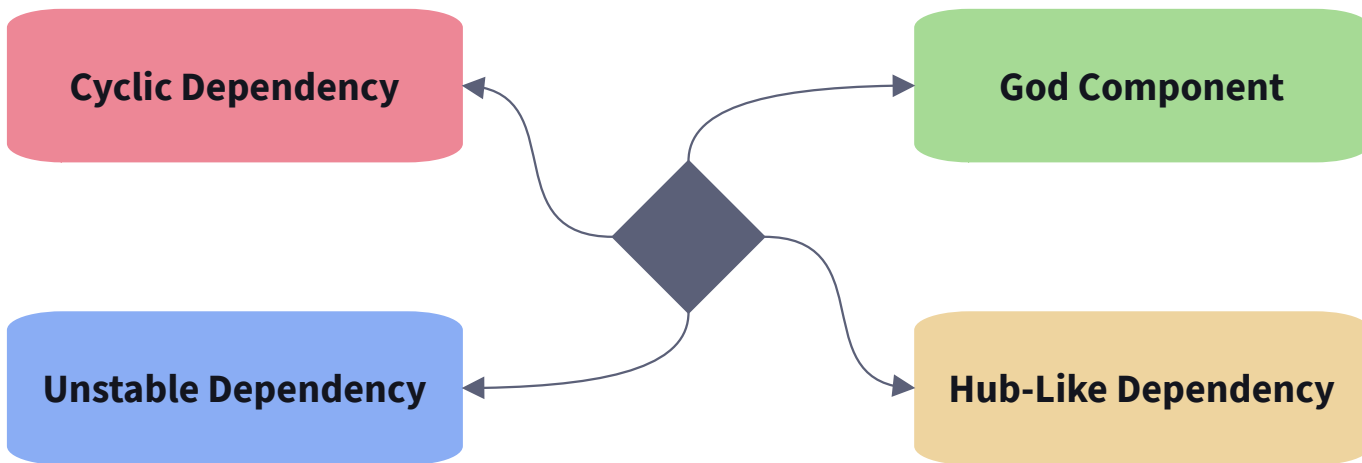
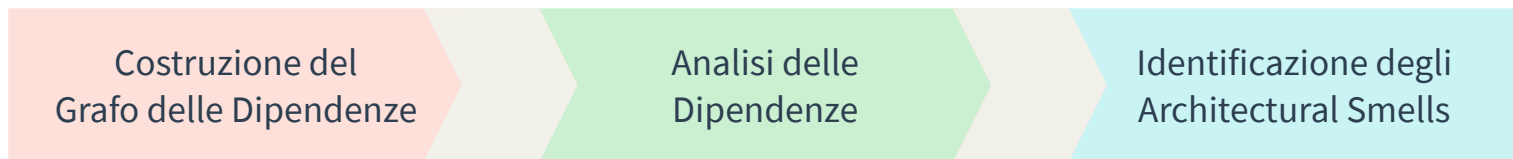


Un framework multi-linguaggio per l'identificazione delle dipendenze del codice sorgente

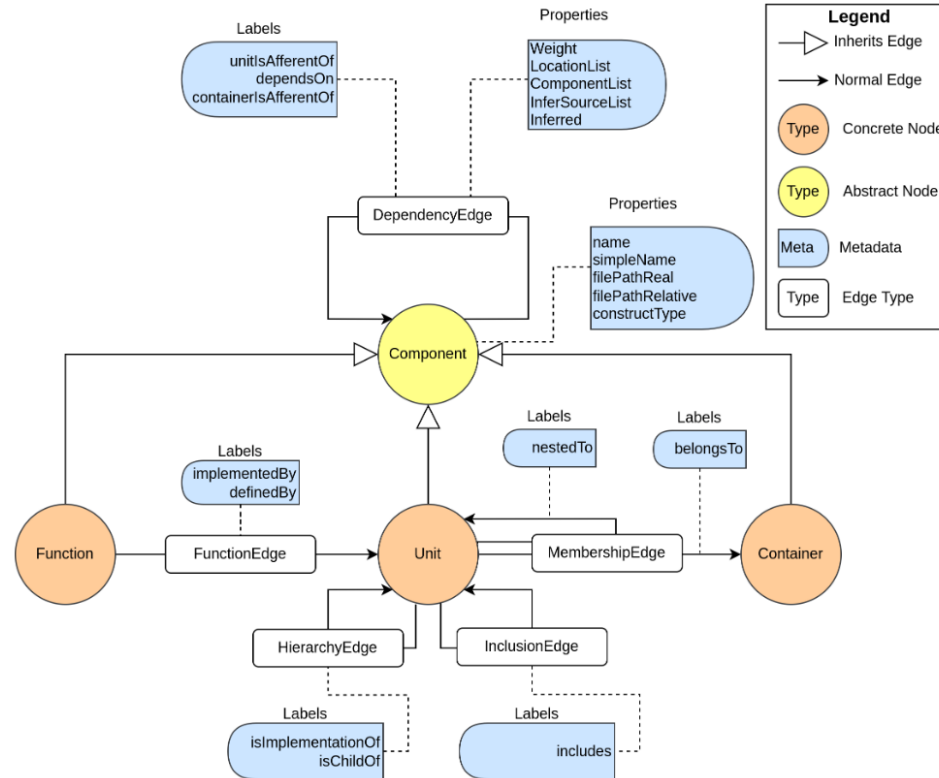
Relatore: Prof.ssa Francesca Arcelli Fontana
Correlatore: Dr. Darius Sas

Candidato: Francesco Refolli
Matricola: 865955

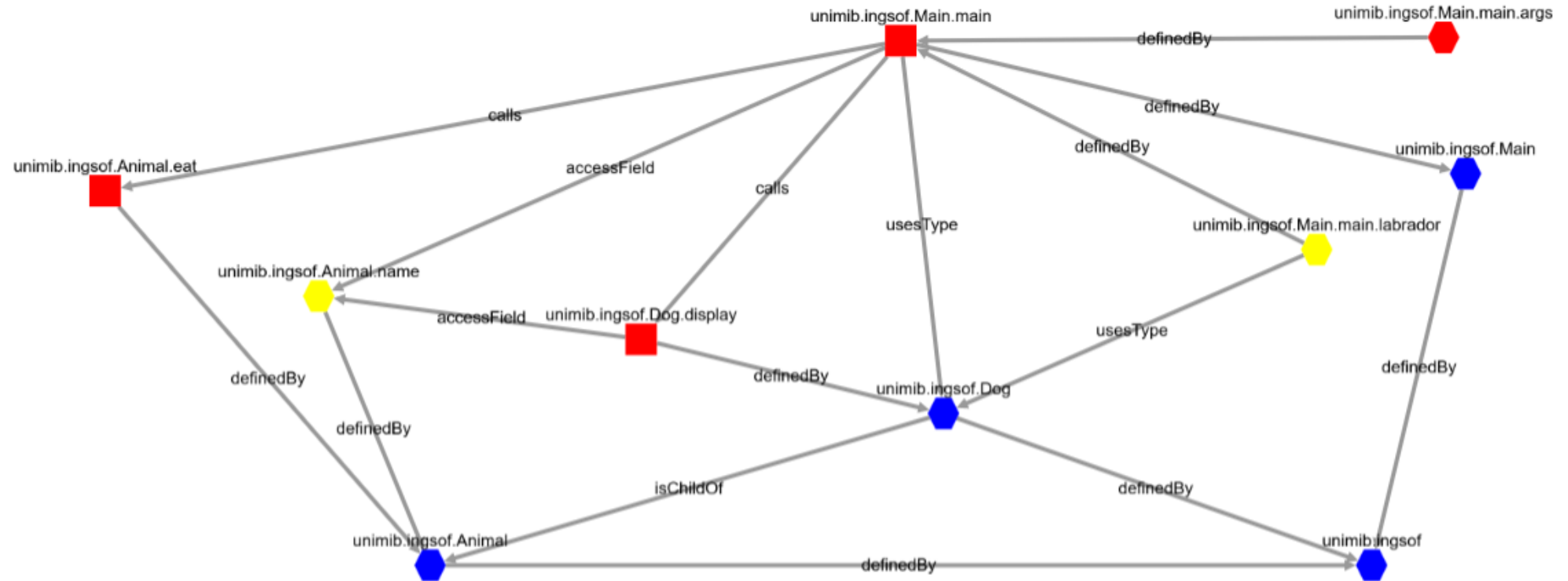
Arcan



Arcan

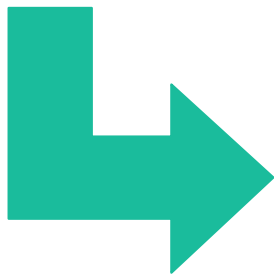


Dependency Graph



Tree Sitter

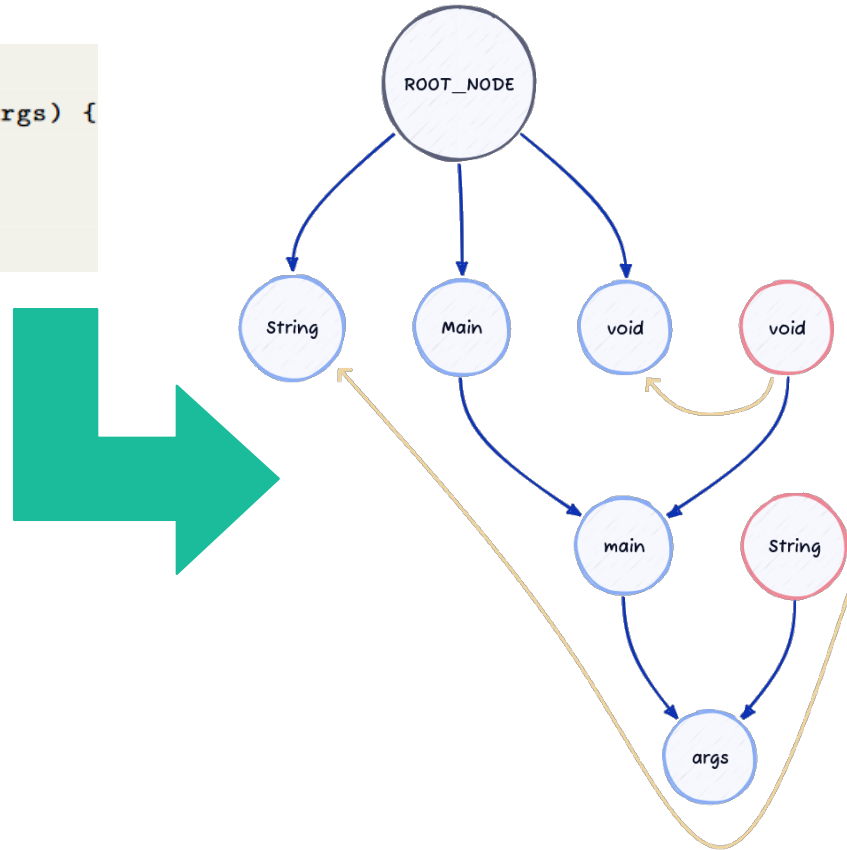
```
class Main {  
  public static void main(String[] args) {  
    // comment  
  }  
}
```



```
(program  
  (class_declaration  
    name: (identifier)  
    body: (class_body  
      (method_declaration  
        (modifiers)  
        type: (void_type)  
        name: (identifier)  
        parameters: (formal_parameters  
          (formal_parameter  
            type: (array_type  
              element: (type_identifier)  
              dimensions: (dimensions))  
            name: (identifier)))  
        body: (block  
          (line_comment))))))
```

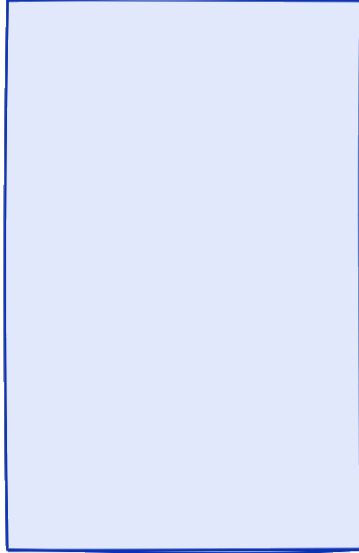
Stack Graph

```
class Main {  
    public static void main(String[] args) {  
        // comment  
    }  
}
```



Costruzione del Dependency Graph

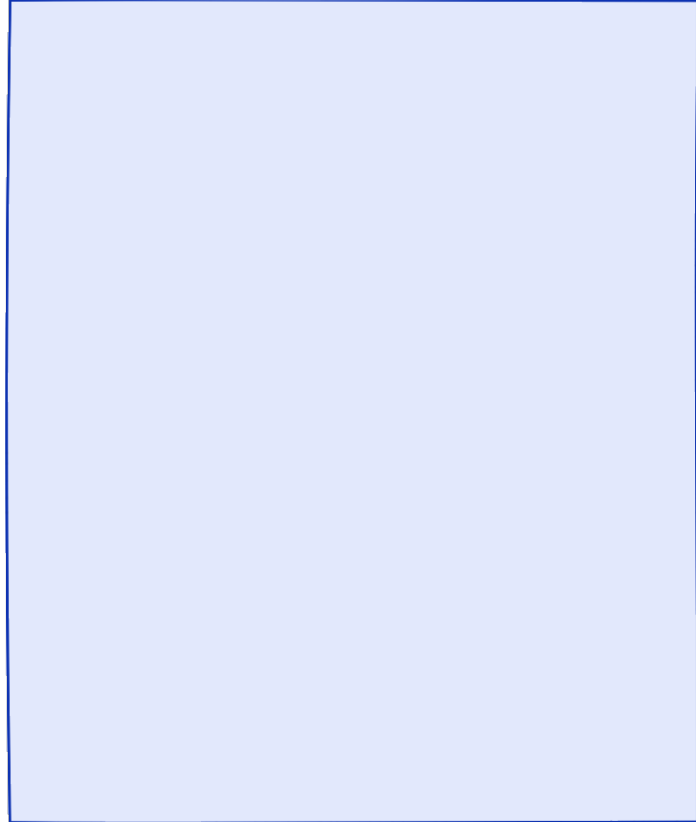
Building Stack Graph



Resolving References

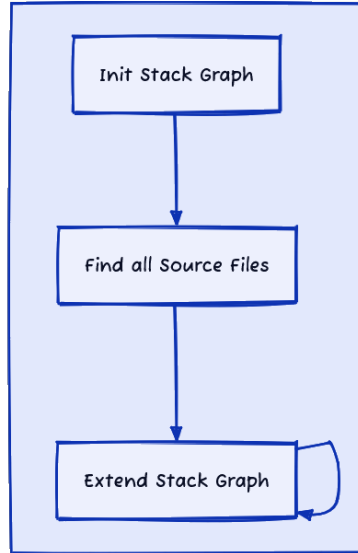


Building DepGraph Graph



Costruzione del Dependency Graph

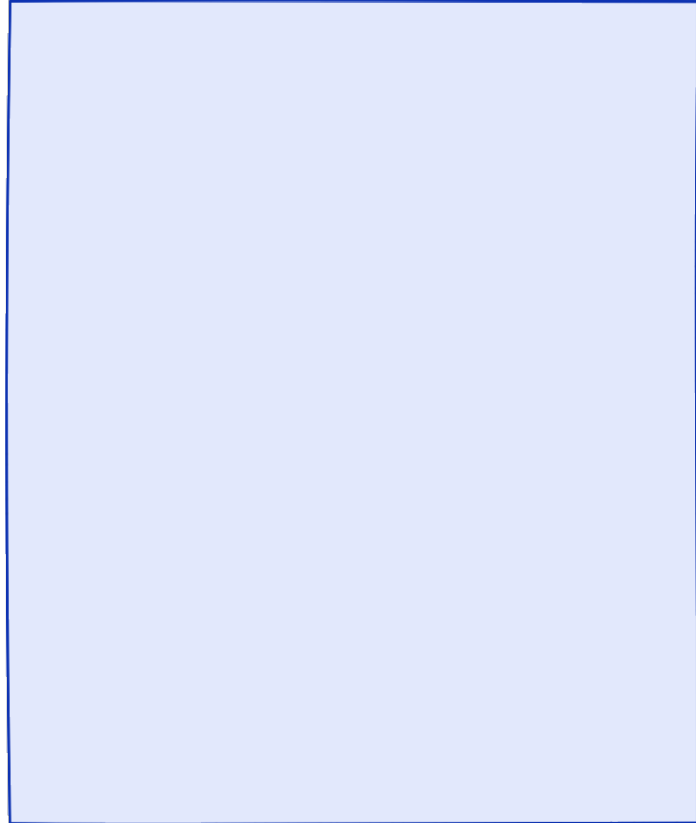
Building Stack Graph



Resolving References

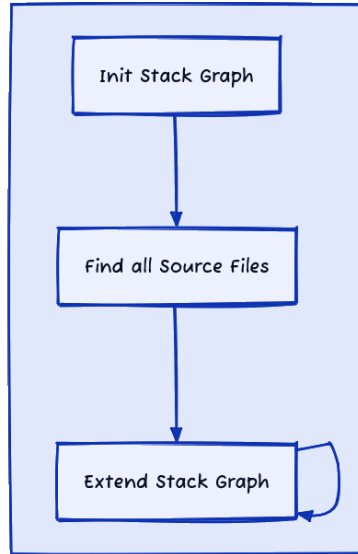


Building DepGraph Graph

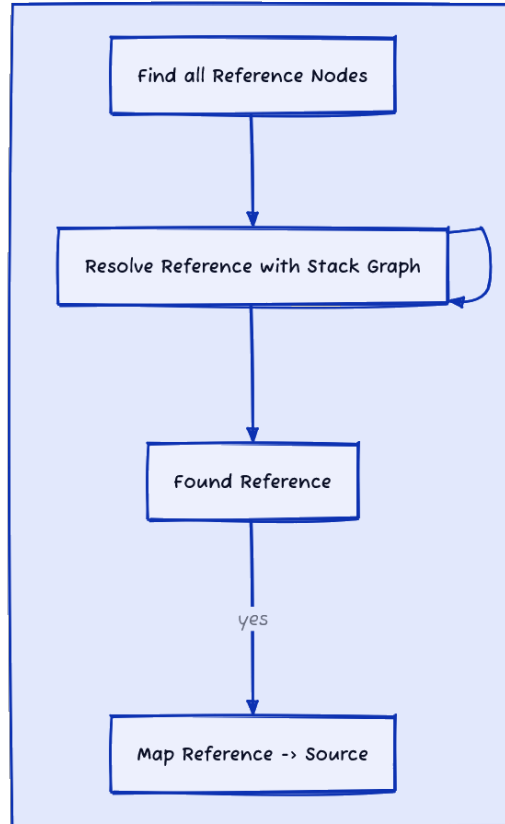


Costruzione del Dependency Graph

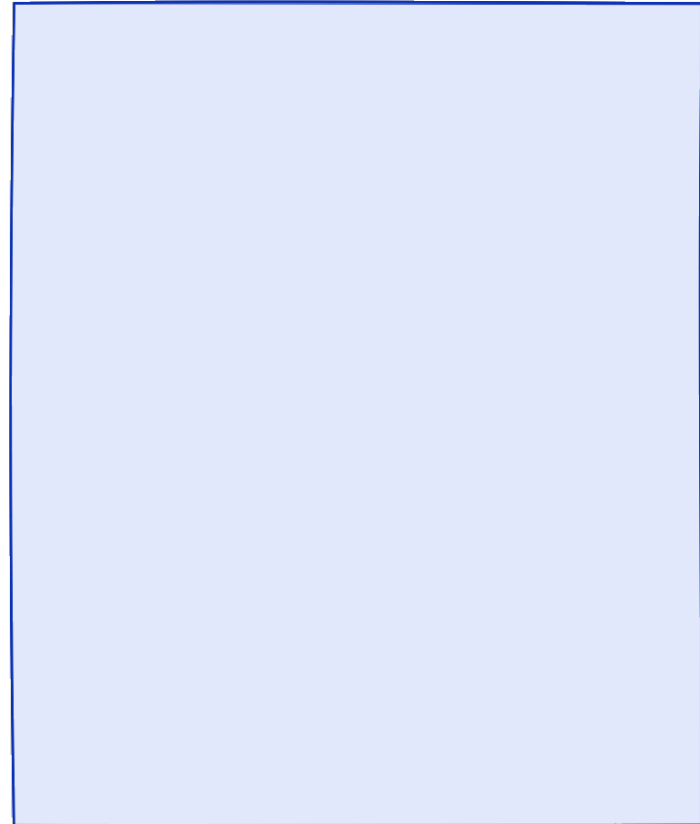
Building Stack Graph



Resolving References

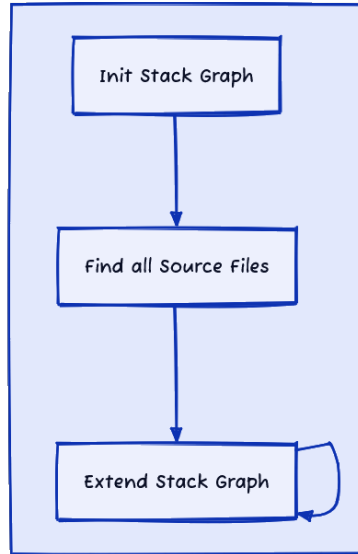


Building DepGraph Graph

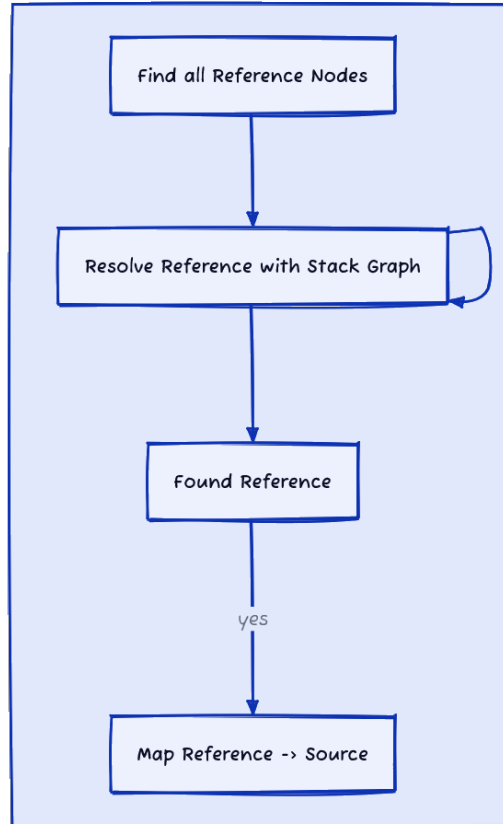


Costruzione del Dependency Graph

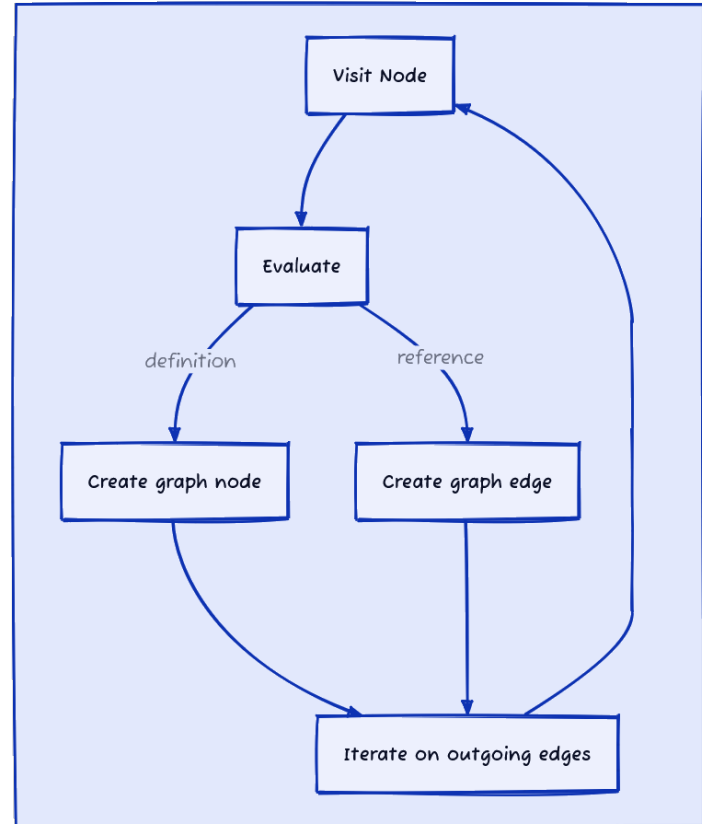
Building Stack Graph



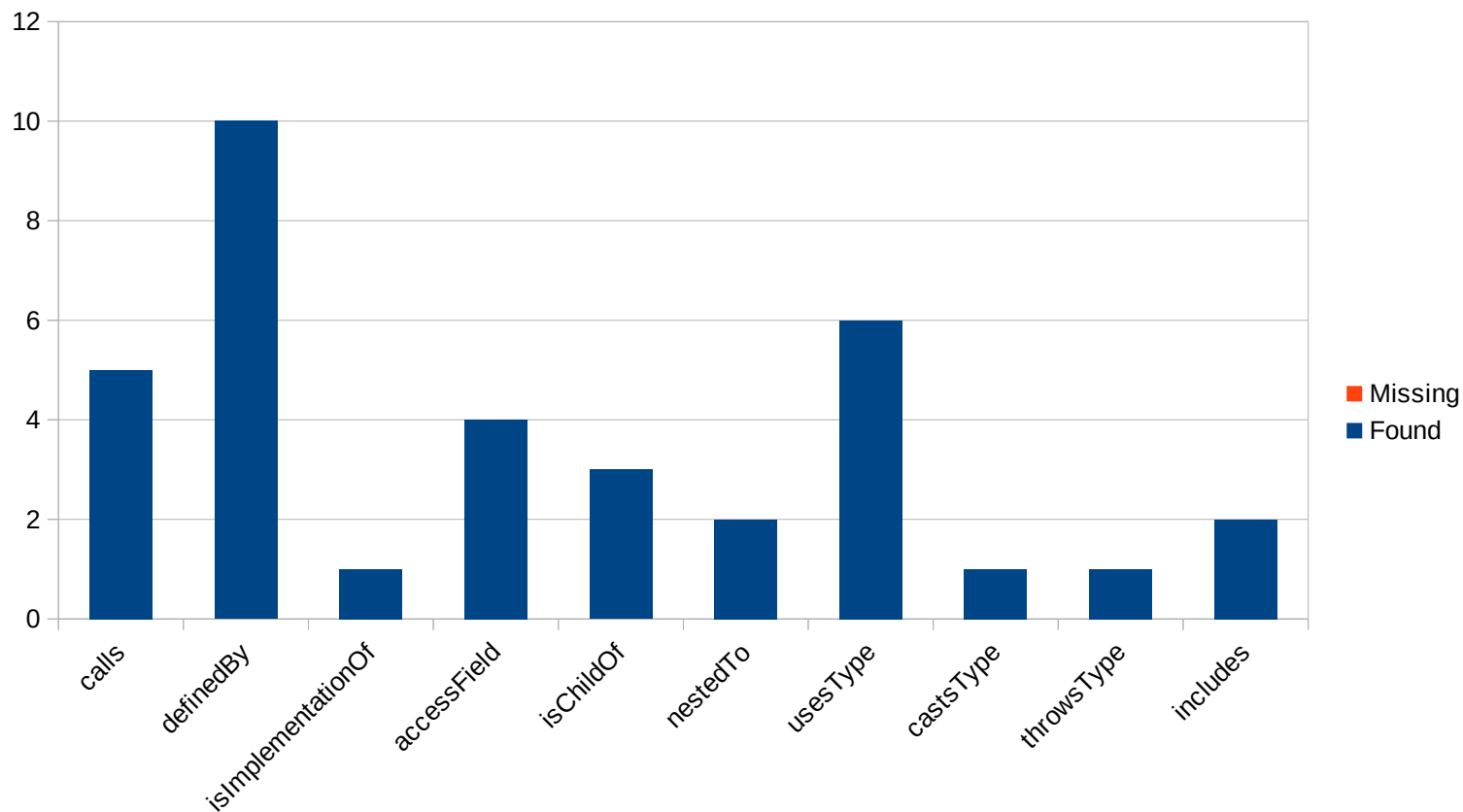
Resolving References



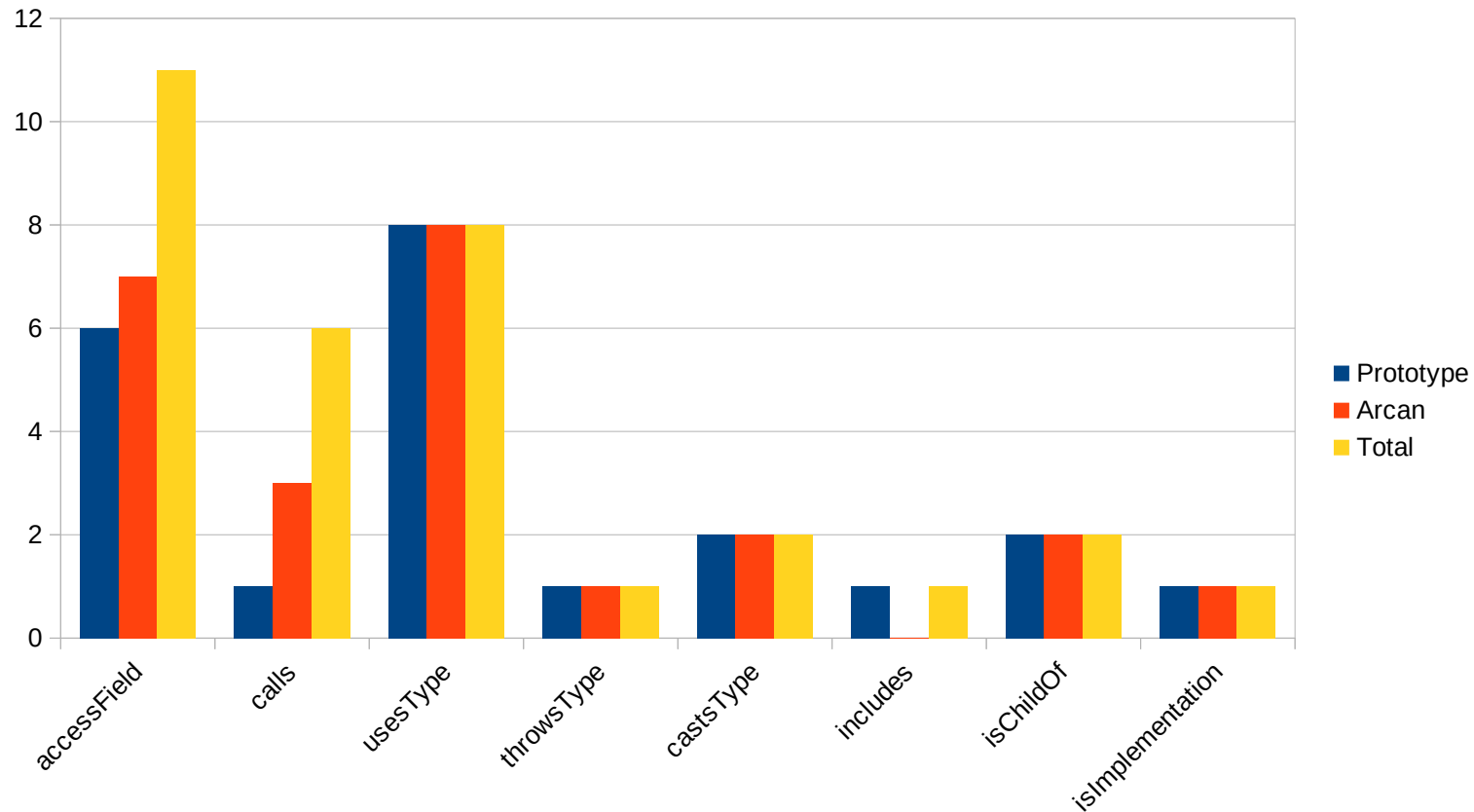
Building DepGraph Graph



Validazione - test ad hoc



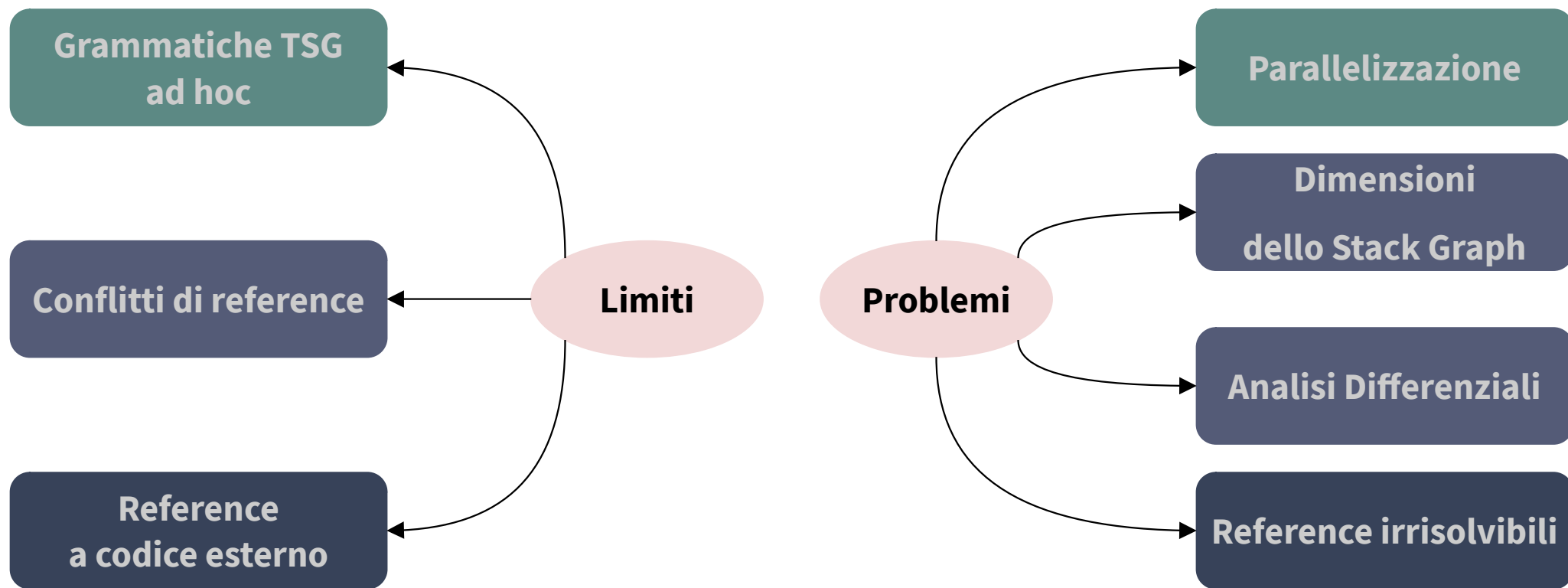
Validazione - Benchmark



Comparazione con Arcan

| progetto | software | tempo minimo | tempo massimo | tempo medio |
|----------|-----------|--------------|---------------|-------------|
| guava | Prototipo | N/A | N/A | N/A |
| guava | Arcan | N/A | N/A | 120~ |
| junit4 | Prototipo | 65,82 | 69,07 | 65,88 |
| junit4 | Arcan | 13,850 | 17,079 | 14,611 |
| junit5 | Prototipo | 132,87 | 134,75 | 134,44 |
| junit5 | Arcan | 42,542 | 47,613 | 44,186 |
| antlr4 | Prototipo | 171,65 | 175,49 | 172,64 |
| antlr4 | Arcan | 19,222 | 20,140 | 19,691 |
| fastjson | Prototipo | N/A | N/A | N/A |
| fastjson | Arcan | 66,932 | 71,094 | 69,071 |

Lezioni Imparate



Laurea in Informatica

GRAZIE PER L'ATTENZIONE

Candidato: Francesco Refolli
Matricola: 865955