

Report for Assignment 3 (if possible see pdf): Programming  
Language Structures  
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## 1 Java Errors

### 1.1 Lexical

Putting the following into your code would result in a lexical error:

```
int spade = ♠;
```

### 1.2 Syntax

Doing something as simple as leaving a semicolon off of a statement would result in a syntax error.

```
int spade = 5
```

### 1.3 Semantic

One might expect the following method to return 7, but Java would raise an error because we never formally declared `b` as an integer.

```
public int return7(){  
    int a = 7;  
    b = a;  
    return b;  
}
```

### 1.4 Dynamic Symantic

Trying to access an array at a point that was not declared will result in a dynamic symantic error.

```
int[] array = new int [10];  
array[15] = 7;
```

## 2 Financial Grammar

### 3 Language Classification

CoffeeScript is a scripting language. Often things are only written in CoffeeScript and actually runned as JavaScript, which is certainly a scripting language.

#### 3.1 Compiled vs. Interpreted

CoffeeScript is a language that compiles into JavaScript. JavaScript is run inside of or linked to HTML files. It allows for a high level of computation to be done on the internet.

#### 3.2 Euclid's Algorithm in CoffeeScript

Gcd = (a,b) -> if b == 0 then a  
else gcd(b,a%b)