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Project Emerald: Designing a Language to be Fun

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Project Emerald

Designing a Language to be Fun

What makes a language fun?

Easy to use

Flexible

Powerful

C

Racecar Fast

Requires a lot of work

Requires special knowledge

Ruby

Humvee

Slow

Can do anything

Anyone can use it

Java

Luxury
SUV

Not slow

Can be complicated

Anyone can do simple things

Emerald

Hybrid language

Easy collection manipulation

Easy lambdas

Collection Manipulation

Java:

```
public static ArrayList<String> findByName(String[] students, String name){  
    ArrayList<String> results = new ArrayList<String>();  
    for(int i = 0; i<students.length; i++){  
        if(students[i].equals(name)){  
            results.add(students[i]);  
        }  
    }  
    return results;  
}
```

Emerald:

```
public String[] findByName(String[] students, String name){  
    return students.select(s => s == name);  
}
```


Switch statements

Emerald:

```
public Int scoreWord(Char[] word){
    Int score = 0;
    foreach(Char c in word) {
        switch(c) {
            when 'A' || 'E' || 'I' || 'O' || 'U' || 'N' || 'R' || 'T' || 'L' || 'S':
                score++;
            when 'D' || 'G':
                score+=2;
            when 'B' || 'C' || 'M' || 'P':
                score+=3;
            when 'F' || 'H' || 'V' || 'W' || 'Y':
                score+=4;
            when 'K':
                score+=5;
            when 'J' || 'X':
                score+=8;
            when 'Q' || 'Z':
                score+=10;
        }
    }
    return score;
}
```

Java:

```
public static int scoreWord(char[] word){
    int score = 0;
    for(int i = 0; i < word.length; i++){
        switch (word[i]){
            case 'A':
            case 'E':
            case 'I':
            case 'O':
            case 'U':
            case 'N':
            case 'R':
            case 'T':
            case 'L':
            case 'S':
                score++;
                break;
            case 'D':
            case 'G':
                score+=2;
                break;
            case 'B':
            case 'C':
            case 'M':
            case 'P':
                score+=3;
                break;
            case 'F':
            case 'H':
            case 'V':
            case 'W':
            case 'Y':
                score+=4;
                break;
            case 'K':
                score+=5;
                break;
            case 'J':
            case 'X':
                score+=8;
                break;
            case 'Q':
            case 'Z':
                score+=10;
                break;
        }
    }
    return score;
}
```

Conclusion

- Emerald is a...?