COMPARING PROGRAMMING LANGUAGES

1. INTRODUCTION

- In this project, we intend to compare different programming languages based on whether they are procedure-oriented or Object-Oriented such as C vs C++ and Static language with Dynamic languages such as Java vs Python.

- Programming in the high-level languages such as COBOL, FORTRAN, C, etc. is known as procedure-oriented programming. Procedure-oriented programming basically contains group of instructions known as function. There are multiple functions into the program. Object-oriented programming (OOP) is a computer programming model that organizes software design around data, or objects, rather than functions and logic. An object can be defined as a data field that has unique attributes and behavior.

- In statically typed programming languages, type checking occurs at compile time. At compile time, source code in a specific programming language is converted to a machine-readable format. This means that before source code is compiled, the type associated with each and every single variable must be known.

- We can define that any programming language which allows Run-time modification, is a dynamic language. Run-time modification is nothing but we can change the program while it is running. The original definition also included the need of the language to be high level, dynamically typed, and open source.

1.1 Project Overview

This project focuses on the comparison of programming languages. Our aim is to bring out the differences between procedure oriented and object oriented programming languages as well as statically typed and dynamically typed languages by using various examples with code snippets.

Statement of Proposal

We propose on comparing and contrasting the features of an Object Oriented programming language with a Procedure Oriented language, and also a Static programming language with a Dynamic language, including source code for each feature.

1.2 Project Scope and Objective:

- The objective is to compare different types of languages such as Procedural with Object-Oriented and Dynamic with static languages.
- C(procedural) is compared with C++(Object Oriented).
- Java (static) is compared with Python (Dynamic).

2. PLANS

2.1. TASKS:
1. Comparing Object Oriented Programming vs Procedure Oriented Programming
    1.1. Object Oriented- C++ Language
    1.2. Procedure Oriented- C Language
2. Comparing Static vs Dynamic Languages
    2.1. Static- Java
    2.2. Dynamic- Python
3. Report

2.2. PROJECT PLAN:

Task No	Assigned To	Student Id	Estimated Date of Completion
1, 1.1, 3	Mrunal Tilekar	801257239	06/26/2022
2, 2.2, 3	Sreelekha Pasikanti	801209427	06/26/2022
1.2, 2.1, 3	Pratheeka Thummala	801255442	06/26/2022

3. PROJECT RESOURCES

3.1 TOOLS USED:
- Pycharm
- Visual Studio Code

3.2 GROUP MEMBERS
- PRATHEEKA THUMMALA(801255442)
- MRUNAL TILEKAR(801257239)
- SREELEKHA PASIKANTI(801209427)

4. CONCLUSION:

 Every programming language has its own pros and cons, based on the requirement we can select the specific programming language.

Advantages:

- When latency is an important parameter, C++ is the best choice.
- For developing embedded system drivers and applications, the C programming language is preferred.
- Java is used to create applications for a variety of platforms that run the Java Runtime Environment (JRE), as well as applications that run on a single device such as a desktop or mobile phone.
- Python is good for AI building and machine learning, data analysis - especially when dealing with enormous datasets - and scripting.