CS22510Assignment 2
C++, C and Java Programming Paradigms

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1   Introduction

2   C

C was developed in 1972 by Dennis Ritchie, and was used to create the Unix operating system. Since then it has continued to be used to this day for a variety of purposes, generally anywhere that software needs to interact directly with hardware, such as operating systems, hardware drivers and embedded devices. The Linux Kernel for example is written almost entirely in C.[1] The reason for this is that C allows a lot better access to low level memory than other languages. The programmer can directly manipulate the memory of the machine by using pointers to access variables memory locations; due to this it is seen as a more difficult language to learn and use as the programmer needs to manually manage their memory without any kind of garbage collection.

C is historic, but interwoven with all Unix-like operating systems, as well as being a prime choice of language for systems that require a precise amount of performance; whether that be due to limited resources on an embedded system, or in an environment where performance is crucial.

3   C++

C++ was developed in 1983 by Bjarne Stroustrup, its core concept is to bring object orientation to the C language. Object Orientation is a very

4   Java

Java was developed in 1995 by James Gosling for Sun Microsystems. It was designed to be almost entirely object orientated, and most interestingly to be compiled once and ran anywhere. This was achieved by having the code compile down to Java byte code which could then be ran on any Java virtual machine (JVM) on any platform.

References

[1] 95% of the Linux Kernel is written in C `https://github.com/torvalds/linux`