Lecture # 1

History of Programming Languages

Engr. Fiaz Khan

Today's Agenda

01 **Basic Introduction**

02 **Zuse's Plankalkul**

03 **Fortran**

04 **BCPL**

05 **JAVA**

06 **C#**

اَلْحَمْدُ لِلّٰهِ رَبِّ الْعٰلَمِيْنَ وَ الصَّلٰوةُ وَالسَّلَامُ عَلٰى سَيِّدِ الْمُرْسَلِيْنَ

اَمَّا بَعْدُ فَاَعُوْذُ بِاللّٰهِ مِنَ الشَّيْطٰنِ الرَّجِيْمِ ؕ بِسْمِ اللّٰهِ الرَّحْمٰنِ الرَّحِيْمِ ؕ

اَللّٰهُمَّ افْتَحْ عَلَيْنَا حِكْمَتَكَ وَانْشُرْ

عَلَيْنَا رَحْمَتَكَ يَا ذَا الْجَلَالِ وَالْاِكْرَام

Translation

O Allah عَزَّوَجَلَّ! Open the door of knowledge and wisdom for us, and have mercy on us! O the One Who is the Most Honourable and Glorious! *(Al-Mustatraf, vol. 1, pp. 40)*

Lets Start Learning

Whoever recites Salat upon me one time, Allah عَزَّوَجَلَّ sends ten blessings upon him. *(Sahih Muslim, pp. 216, Hadees 408)*

جس نے مجھ پر ایک بار دُرُودِ پاک پڑھا اللہ عَزَّوَجَلَّ اُس پر دس رَحمتیں بھیجتا ہے۔

(مُسلِم ص۲۱٦ حدیث٤٠٨)

Basic Introduction

- Computer Science
- Programming
- Mathematics

Zuse's Plankalkul

- 1st Programming Language
- German Scientist "Konrad **Zuse**" 1936
- In 1943 proposed in PhD dissertation
- In 1945 World War II
- Published in 1972

Erste program

Pseudo codes

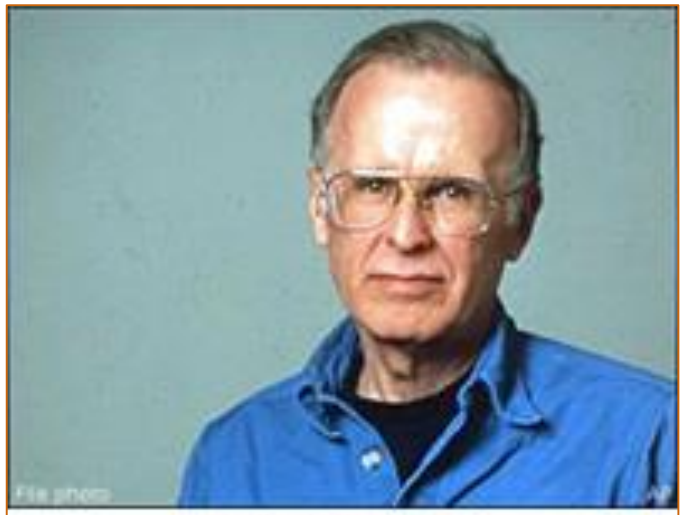
- Minimal Hardware Programming 1940 to 1950

Short Code

- 1949 John Mauchly 1st Stored Program (electronic computers)
- Automatic programming. 50 times slower than Machine Code

Speed Coding

- 1954 John Backus
- Auto increment in registers



John Backus

Fortran in 1955

- IBM & John Backus in 1954
- Release of compiler in 1957
- I, J, K, L, M, and N were implicit integer type in 1st version
- Small Memories, Scientific Computations
- The IBM Mathematical **For**mula **Tran**slating System
- Version: Fortran 0, I, II, III, IV, 77, 90, 95, 2003

LISP

Artificial Intelligence

linguistics, Psychology & Math

ALGOL

IAL (International Algorithm Language)

COBOL

CBL (Common Business Oriented Language)

Basic (Especially for non scientists)

1970 to 1980 GUI VB 1990

VB vs VB.Net (OOP)

BCPL(Basic Combined Programming Language)

Simple System Language 1967 Martin Richards(No integers)

Ken Thompson

B

1970, Thompson, 1st High Level Language, based on BCPL

C

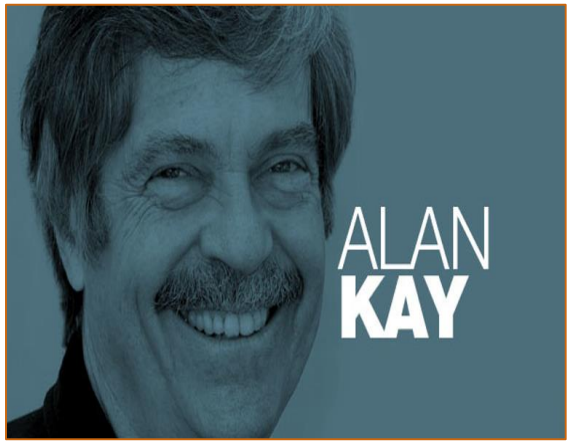
NB(New B), Dannis Ritchie at Bell Laborites in 1972 for System Programming

Dennis Ritchie - Founder Of C Programming Language

Small Talk

1st OOP, late 1960 PhD of Alan Kay to University of Utah.

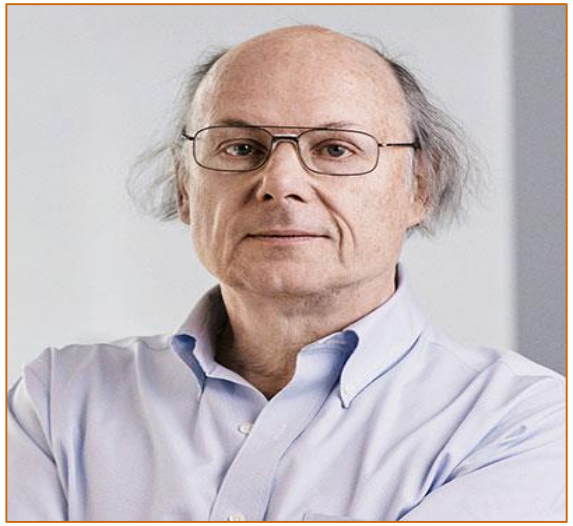
Kay believed that PC would be used by non programmers and need for powerful human interface capabilities



C++

(1983) actual name was “C with classes”

Bjarne Stroustrup at Bell Lab in 1980 in Murray Hill, New Jersey



10 times slower than C

- Green
- DNA
- Silk
- Neon
- Pepper
- Lyric
- Netprase
- WRL(Web Runner Language)
- Web Dancer
- Web Spinner
- JAVA reflects “team’s love for coffee”

JAVA (Oracle)

OAK, Sun Micro Systems 1990, James Gosling

for embedded consumer electronic device

No Pointers but ref variable

Cross Platform

Portable Code

WOCA vs WORA

IL byte code

(no need to reinvent the wheel)

C#

2000, Microsoft, Chief Architect Anders Hejlsberg

C → C++

JAVA

C#

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THANK YOU!

Do you have any questions?