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6. Introduction to Computer Languages

6.1 Introduction to Visual Basic

- Visual Basic is a third-generation event-driven programming language first released by Microsoft in 1991. It evolved from the earlier DOS version called BASIC. BASIC means Beginners' All-purpose Symbolic Instruction Code
- In 2002, Microsoft released Visual Basic.NET(VB.NET) to replace Visual Basic 6. Thereafter, Microsoft declared VB6 a legacy programming language in 2008. Fortunately, Microsoft still provides some form of support for VB6. VB.NET is a fully object-oriented programming language implemented in the .NET Framework



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6.1 Cont.

In VB 6, you can create any program depending on your objective. For math teachers, you can create mathematical programs such as Geometric Progression, Quadratic Equation Solver, Simultaneous Equation Solver, Prime Number Tester, Factors Finder, Quadratic Function Graph Plotter and so on. For science teachers, you can create simulation programs such as Projectile, Simple Harmonic Motion, Star War etc. If you are in business, you can also create business applications such as inventory management system, Amortization Calculator, investments calculator, point-of-sale system, payroll system, accounting program and more to help manage your business and increase productivity



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6.2 Java

JAVA was developed by Sun Microsystems Inc in 1991, later acquired by Oracle Corporation. It was developed by James Gosling and Patrick Naughton. It is a simple programming language. Writing, compiling and debugging a program is easy in java. It helps to create modular programs and reusable code.



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6.2.1 Main Features of JAVA

- Java is a platform independent language
- Compiler(javac) converts source code (.java file) to the byte code(.class file). As mentioned above, JVM executes the bytecode produced by compiler. This byte code can run on any platform such as Windows, Linux, Mac OS etc. Which means a program that is compiled on windows can run on Linux and vice-versa. Each operating system has different JVM, however the output they produce after execution of bytecode is same across all operating systems. That is why we call java as platform independent language.



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6.3 Fortran

Fortran77 programs are typed in lines of up to 72 characters, with the first six columns of each line reserved for special purposes. As a result, Fortran77 statements **ALWAYS BEGIN AT, OR AFTER, COLUMN 7.**



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6.4 C/C++

The C language was developed in 1972 by Dennis Ritchie at Bell Telephone laboratories, primarily as a systems programming language. That is, a language to write operating systems with. Ritchie's primary goals were to produce a minimalistic language that was easy to compile, allowed efficient access to memory, produced efficient code, and did not need extensive run-time support. Thus, for a high-level language, it was designed to be fairly low-level, while still encouraging platform-independent programming.

- C++ (pronounced see plus plus) was developed by Bjarne Stroustrup at Bell Labs as an extension to C, starting in 1979. C++ adds many new features to the C language, and is perhaps best thought of as a superset of C, though this is not strictly true as C99 introduced a few features that do not exist in C++. C++'s claim to fame results primarily from the fact that it is an object-



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6.4.1 Basic input/output functions Of C

Example #1: C Output

```
#include <stdio.h> //This is needed to run printf() function.  
  
int main()  
{  
    printf("C Programming"); //displays the content inside quotation  
    return 0;  
}
```

Output

C Programming



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6.4.1 Cont.

Example #2: C Integer Output

```
#include <stdio.h>
int main()
{
    int testInteger = 5;
    printf("Number = %d", testInteger);
    return 0;
}
```

Output

```
Number = 5
```




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6.4.1 Cont.

Example #3: C Integer Input/Output

```
#include <stdio.h>
int main()
{
    int testInteger;
    printf("Enter an integer: ");
    scanf("%d",&testInteger);
    printf("Number = %d",testInteger);
    return 0;
}
```

Output

```
Enter an integer: 4
```

```
Number = 4
```