Name of Subject : Visual Basic.NET

Course Code : CS016

Class :B.Sc. Third Year   **Subject :Computer Sci.(Gen).**

Unit : I Introduction to VB.NET
Part-1

Dr. Revate S.S. (Asst. Professor & Head),
Department of Computer Sci. & IT,

- **Review of Computer Programming Languages**

- Human Language commonly used to express feelings and understand other persons expressions.

- A *computer language* is a system of communication with a *computer.* Such *languages* are used to create *computer* code or program code.

- **Programming languages** can be used to create programs that control the behavior of a **computer** and serve any purpose.

- A programming language is a vocabulary and a set of grammatical rules for instructing a computer system to perform any specific task.

- The language in which a computer program is written is known as *programming Language.*

- The set of instructions forming a *computer* program which is executed by a *computer*.

- **Three Types of Computer Languages**

- **I) Machine Language(Low Level)**

  - Machine level languages are the machine codes in which the instructions are given in machine language in the form of 0 and 1 to a Computer system.

  - The main function of the Low level language is to operate, manage and manipulate the hardware and system components.

  - It is machine dependent.

  - It is difficult to understand by humans/users.

- **II) Assembly Language(Middle Level)**

- **Assembly Language** is the programming language that has almost similar structure and set of commands as Machine language.

- Instead of using numbers like in Machine languages here we use words or names in English forms and also symbols(ADD,SUB,MUL).

- The programs that have been written using words, names and symbols in assembly language are converted to machine language using an Assembler.

- The main disadvantage of this language is that it is written only for a single type of CPU and does not run on any other CPU.

- **III) High-level Language**

- High level computer languages give formats close to English language and the purpose of developing high level languages is to enable people to write programs easily and in their own native language environment (English).

- High-level languages are basically symbolic languages that use English words and/or mathematical symbols rather than mnemonic codes.

- Each instruction in the high level language is translated into many machine language instructions thus showing one-to-many translation.

- **Example : C,C++, Java, VB.Net etc.**

Advantages of a high level language:

- User-friendly (people based)
- Similar to English with vocabulary of words awl symbols therefore it is easier to learn.
- They require less time to write
- They are easier to maintain
- It is independent of the machine on which it used i.e. programs developed in high level language can be run on any computer.

Disadvantages:

These are:

- A high-level language has to be translated into the -machine language by a translator and thus a price in computer time is paid.
- The object code generated by a translator might be inefficient compared to an equivalent assembly language program

- **Selection of a Computer Language**

- There are many high-level languages in use today.

- The choice of language depends on type and complexity of the problem.

- **Microsoft Visual Studio**

- **Microsoft Visual Studio is an integrated development environment (IDE) from Microsoft.**

- **It is used to develop computer programs, as well as websites, web apps, web services and mobile apps.**

- **Visual Studio supports 36 different programming languages and allows the code editor and debugger to support nearly any programming language, provided a language-specific service exists.**

- **Built-in languages include C,C++,Visual Basic .NET, C#, F#, JavaScript, TypeScript, XML, XSLT, HTML, and CSS. Support for other languages like Python, Ruby.**

Microsoft® Visual Studio 2005

Microsoft® Visual Studio® 2008

Microsoft® Visual Studio® 2010

Visual Studio 2019

- **Visual Basic.NET(VB.NET)**

- **Visual basic is one of the most popular programming language, there have been massive changes in it as it became Visual Basic.NET.**

- **Microsoft launched VB.NET in 2002 as the successor to its original Visual Basic language.**

- **Visual Basic .NET is an object-oriented programming language, implemented on the .NET Framework developed by Microsoft.**

- These languages are powerful, type-safe, and object-oriented. Means It supports the features of object-oriented programming which include encapsulation, polymorphism, abstraction, and inheritance.

- **Different versions Visual Basic**
- Version 1.0 – 1991   Version 2.0 – 1992
- Version 3.0 – 1993   Version 4.0 – 1995
- Version 5.0 – 1997   Version 6.0 – 1998
- Visual Basic.NET – 2002 **(NOT BACKWARD COMPATIBLE WITH EARLIER VERSIONS)**
- Visual Basic 2005 – November 2005
- Visual Basic 2008 – November 2007
- Visual Basic 2010 – April 2010
- Visual Basic 2012 (VB 11.0)
- Visual Basic 2013 (VB 12.0)
- Visual Basic 2015 (VB 14.0)
- Visual Basic 2017 (VB 15.x)
- Visual Basic 2019 (VB 16.0)

The currently supported Visual Studio version is 2019.

- **Features of VB.Net**

- VB.NET is not case sensitive like other languages such as C++ and Java.

- It is an object-oriented programming language. It treats everything as an object.

- Automatic code formatting, XML designer, improved object browser etc.

- Garbage collection is automated.

- Support for Boolean conditions for decision making.

- Simple multithreading, allowing your apps to deal with multiple tasks simultaneously

- A standard library.

- Events management.

- Attributes, which are tags for providing additional information regarding elements that have been defined within a program.

- Windows Forms- you can inherit your form from an already existing form.

Paper No.: CSO16 Comp. Sci. (Gen.)   **Semester : V**   **Paper title: VB.NET**

Unit No.	Contents	Rem.
I	**Introduction:** Introduction to .NET and .NET Framework, Difference between CUI & GUI, Event Driven Programming, the VB IDE, Operators, Conditional statements and looping statements. Sub Procedure, functions and exception handling	
II	**Windows Forms :** General Properties, Events handling events like mouse, keyboard, Types of forms MDI, adding removing controls at run time. **Controls** : The control class, Text Box, Rich Text Box, Label, Buttons, Checkbox, Radio Button, Panels, Group Boxes, List Box, Combo Box, Picture Box, Scroll Bars, Splitters, Track Bars, Pickers, Timer.	
III	**Object-Oriented Programming :** Class and Object, Class Vs. Object Members, Creating Classes, Objects, Structures, Modules, Constructors, Data Members, Methods, Properties, Event	
BOOKS	1) Visual Basic .NET Programming Black Book" by Steven Holzner,Dreamtech Press 2) "Mastering in Visual Basic .NET" by Evangelos Petroutsos, Sybex Publication.	

Thank you !