HIGHER TECHNICAL INSTITUTE

CIVIL ENGINEERING DEPARTMENT

DIPLOMA PROJECT

ANALYSIS OF STRUCTURES WITH BEAM AND TRUSS ELEMENTS

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INTRODUCTION

Computer is a wonder invention of the present times. The importance of computers in the material and intellectual progress of mankind is well recognised in the developed and in the developing countries. Today, computer is finding its usefulness in almost every field of modern society.

The second half of the twentieth century may well be called the age of computers. These devices and the various "languages" used to instruct them are becoming almost as common as typewriters and slide rules. Essentially, a computer performs three functions:

1. It receives data (input).
2. It processes data by various computations.
3. It emits data (output).

Many people not familiar with the use of digital computers believe that using a computer will reduce the required amount of thinking in problem solving, which is not true. The use of a computer may reduce the amount of routine work but to achieve this requires a well thought out plan on the part of the user or *programmer.* One cannot say to the computer, "you know what I mean" and expect results. The computer only understands what to do when it is told the problem in precise and unambiguous form.

Before any problem can be solved on the computer, a set of step-by step instructions must be written which state precisely how to solve the problem. This set of instructions is called a *program* . Each step of the program is called a *statement.* The program must be written in a language that the computer can interpret. The computer can only interpret instructions written in a machine language, a language that is complex and cumbersome for the programmer to conveniently handle. The computer does not directly interpret a program written in a user - oriented language (such as FORTRAN) into the machine - oriented language of the computer. An intermediate program which translates FORTRAN into machine language must be used. This translator program is called a *compiler.*

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