

Gain Processing Efficiency of C Programming through avoiding Data Types Declaration.

Mr. AJEET MISHRA

Guest Faculty in Dept of Computer Centre, APS University, Rewa (M.P.)

ABSTRACT

Some units in the C language is excluded, perhaps, the ability of C can be carried because some of the C unit computer's time and place are only used in vain. Variable's formulation in locally by declaration with data types when the function is called, the variable constructed by computer, which is a waste of time to have a computer. To declare the variable's data type, we cannot use variables to store other types of data. Therefore, we are required to build more variable in C programs and the computer's memories are wasted. To overcome this problem, we will have a reduction in building variables with variable's type announcement also would negate. If we stopped to announce the type of the variable, so we can use the variable to store different types of data. Whereby a variable, you can use many times by this technique memory location in the computer's memory would defend. Should minimize the use of local variables in the program and much of the time we could use the computer. If the computer will frequently produce variable will waste the time of the computer.

INTRODUCTION

C is a general-purpose, procedural and structured programming language which is used by programmers to making of System software and also application software. In starting C was used for system development work means C is used to develop System software, particularly the programs

that make-up the operating system. C was adopted as a system development language because it produces code that runs nearly as fast as the code written in assembly language. Some examples of the system Application list that written by C –

- Operating Systems
- Language Compilers
- Text Editors
- Print Spoolers
- Network Drivers
- Modern Programs
- Databases
- Language Interpreters
- Utilities

A C program length can vary from 3 lines through millions of lines and it should be written combining the C instruction into one or more text files whose extension would be ".c"; for example, aps.c.

But researcher and scientist are working at every hour to enhanced computer ability and efficiency. Computer explorer's currently two points are too focused on

- 1- First to prevent unnecessary use of the computer's memory.
- 2- Second, more and more computer time to save making use of the time to be right.

BAD USE OF MEMORY

If the computer's memories are being used incorrectly on a computer so it can wrong influence? Yes it may affect the computer in the wrong. For example, imagine that you have a bag that is filled with things to useless. What will happen then? If you search for something in your bag then you take more time to find out because much stuff was in the bag.

Therefore it is necessary that if we want fast response then we should put few things in bag and only necessary thing. Similarly in C programming if we use Variable's type declaration concept then computer have to face problem of bad use of memory and if Computer face this problem then computer process will go slow. Data declaration is process or steps where programmers have to declare variable in advance in starting of program. Many time this concept of C programming made trouble. During program many time there are some variable in program that usage are very short but due to declaration rules, the occupied area of memory during whole program life.

Now the question arise that what happen if more variable are created in memory by C programming? If we are making any program, where we will have to needed so many variable of different data type then this situation we should inform to compiler about all variables and its data type in starting of program. Now this is interesting point of program. What? Yes how we recognized how much exactly variables we must be needed. We cannot find exact number of variable. We will use two ways to fulfill the need of variable. First way is change declaration of variable time to time during writing of program or other way make bulk variable according to guess of use. Now

we will make variable and these variable got allotted into memory.

After allotment of variable there will be some variable that will use in last of program but not in starting. There will be also some variable in program that are created only for counting or looping. While there will some variable that give services to program in starting of program and after it they only occupies the memory and not give any service. At this state we can clearly observe that there are some variable that are not used but allotted in memory. As we know about RAM is very important for computer. All running program are saved in RAM and passed to CPU for processing. As we use concept of Operating system where clearly explained about RAM that RAM is a unit of any Computer that allowed speed to Computer. In Computer science another name of speed is Multiprogramming of operating. Multiprogramming is happens because RAM is exist with good management. By multi partition memory management, today our computer science could be capable to run an operating system for perform multiprogramming or multi threading.

IMPORTANCE OF MEMORY MANAGEMENT

In operating systems, **memory management** is the function responsible for managing the computer's primary memory.

The memory management function keeps track of the status of each memory location, either *allocated* or *free*. It determines how memory is allocated among competing processes, deciding which gets memory, when they receive it, and how much they are allowed. When memory is allocated it determines which

memory locations will be assigned. It tracks when memory is freed or unallocated and updates the status.

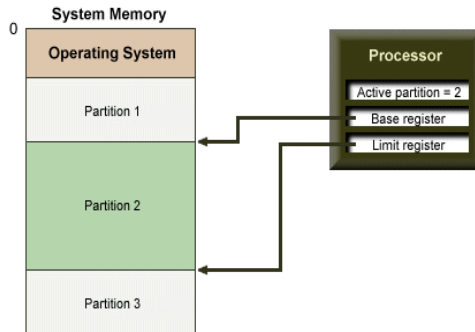


Figure 1 : Multi-partition memory scheme

1. Single Partition of RAM

Single partition is a Type of RAM management where ram partitioned in single block and for this partition one program or task can run at a one time because all part of RAM except OS area are given to single program.

2. Multi-partition of RAM

Multi-partition is memory management scheme that is enhanced management over single partition. As we discuss above that in single scheme user cannot run multiple program at once while

NECROPSY OF C BEHALF OF MEMORY ALLOCATION TO VARIABLE

Now as stated above are that If we already declare the type of data then we must place the variable in

memory even though those variable use as much as. If we remove the data type declaration method, so we have the same variable in the program can be used to keep many different types of data.

This will result that our program in memory less space encircle and less space of the siege in the memory, ability to work program will grow rapidly.

Now we are down to C program, will investigate

```

1. #include<stdio.h>
2. int main() {
3.     int num1, num2, num3;
4.     printf("Enter your Number");
5.     scanf("%d", &num1);
6.     printf("Enter your Second Number ");
7.     scanf("%d", &num2);
8.     printf("%d", num1+num2);
9.     return(0);
10. }

```

We are seeing a program of C above in which we are printing its output by adding two numbers. We are here for three variables. These three variables are integer type. This means C compiler will replace the three variables in memory. Compiler allotted 6 byte memory location to these three variables. Here we use integer variable which size is 2 byte. Let we assume I entered 2 for num1, 4 for num2 then what happen. Here Compiler still allotted 6 byte memory to those whereas in memory there are only 2 bit is required to store 2 and how much actually allotted for 2 is 16 bit which means our computer's memory 14 bit location are use of unnecessary. Similarly this case applied in second variable where we lose 13 bit space of memory.

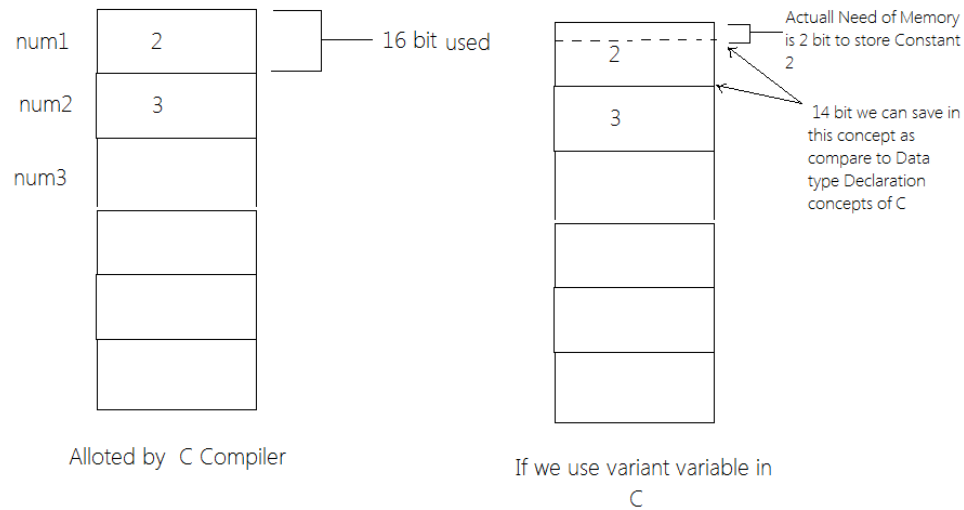


Figure 2 : - Comparison between Type declaration Concept vs. Variant Variable

We can clearly see from the above picture, from type declaration our C program in memory that occupies too much space according to need. In the above picture two logical memories are showing with view of the differences in both logical Memories. First memory is memory who apply type declaration concept to allocate variable to the memory while second logical memory is showing allocation of without type declaration using variant variable concept which give information of memory wasted, when we apply type's declaration in program of C.

Now we demonstrate a program of PHP

1. <?php
2. \$variable = "name";
3. \$literally = 'My \$variable will not print!';
4. print(\$literally);
5. print "
";
6. \$variable = 23
7. print(\$variable);
8. ?>

In above program of PHP we clearly see that we can use same name of variable with different type of data. In given program a variable exist which name is \$variable which is variant type of declaration and the accept string value in start of program but at bottom of program we see that that cal also hold numeric value of Integer type.

CONCLUSIONS

Showing all the facts at top of this document we tried to show bad rule of C programming of Type declaration during making of program. All type of System software and Drivers are made by C programming and when we work in our computer than several application that made by C are run. This means we are unknowingly ruin our computer's memory. If we are to avoid this problem we should avoid Type declaration concept in C Compiler and accept variant declaration of variable that can save our memory from wrongful use and C programming will facilitate for learning and programming.

REFERENCE

[1]

https://en.wikibooks.org/wiki/C_Programming/Memory_management

[2] Computational Study of Static and Dynamic Memory Allocation [ISSN: 2277 128X]

[3] Source-to-Source Refactoring and Elimination of Global Variables in C Programs [Hemaiyer Sankaranarayanan, Prasad A. Kulkarni]

[4] Localizing Globals and Statics to Make C Programs Thread-Safe [Adam R. Smith & Prasad A. Kulkarni]

[5] Reducing Energy Consumption in C Programs by Variable Reallocation [ISBN: 978-1-60595-167-6]