

Basic TT (Truth Table) Function for Non-Computer Science Students

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Function is one of the most difficult chapter in programming subject. The difficulty is not only for students but also for academician to deliver the content since it requires of full understanding of the concept of function.

Function is where we can break up programs into segments (Mohamad & Mydin , 2019), and according to Ian (2006) is a way of breaking problems down into smaller sub-problems and Prinz et. al, (2002) defines function will helps to divide problem into smaller units. Function can be divided into two parts; 1) predefined functions; and 2) user defined functions. Predefined function is the function that already built in and user only need to call the function, but user defined function is the function need to be created by user. The user defined functions is the topic that harder to explain because it has many variable such as function type void or non-void, passing values either using; 1) parameters passing byValue or byRef; 2) global variable. Hence, the student always confuses where to type the input and output statement either in main function `main()` or user defined function `udf()`. Therefore, a basic truth table of function has been developed to helps student to identify where to type the input and output as shown in Table 1.

Table 1: Basic TT Function

Function Type		Passing Values			Result	
Void	Non-void	ByValue	ByRef	Global Variable	Input	Output
True	False	No	No	No	udf()	udf()
False	True	No	No	No	udf()	main()
True	False	Yes	No	No	main()	udf()
False	True	Yes	No	No	main()	main()
True	False	No	Yes	No	main()	main()
False	True	No	Yes	No	main()	main()
True	False	No	No	Yes	udf() main()	udf() main()
False	True	No	No	Yes	udf() main()	udf() main()

From the table, student can inference the function type and passing values that directly can identify where to type the inputs and outputs statements. For example, if the function type is void() and no passing parameter so the student can refer to the table and straight away know the input and output statement will be written in user defined function not in main function. Hopefully, this table can enhance the student understanding about function.

References:

- Mohamad,W, A & Mydin, A. (2019). *Introduction to C++ Programming(2nd.)*. Selangor: Oxford Fajar Uni. Press.
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