Hello World

- printf() – library function
- stdio.h – header file
- main() – entry point function
  - void main() { … }
  - int main() { … }
  - int main(void) { … }
  - int main(int argc, char *argv[]) { … }
  - int main(int argc, char *argv[], char *envp[]) { … }
- return 0 – exit status

Tokens

- C program is made up of functions.
- Function is made up of statements.
- Statement contain multiple tokens.
  - Keywords
  - Data Types
  - Identifiers
  - Variables
  - Constants
  - Operators

Keywords

- Keywords are predefined words used in program, which have special meanings to the compiler.
- They are reserved words, so cannot be used as identifier.
- K & R C has 27 keywords. C89 added 5 keywords. C99 added 5 new keywords.

auto	double	int	struct
break	else	long	switch
case	enum	register	typedef
char	extern	return	union
const	float	short	unsigned
continue	for	signed	void
default	goto	sizeof	volatile
do	if	static	while

Identifiers

- Helps to identify memory locations, functions, defined types and pre-processor macros.

- Rules of Identifiers:
  - Should start with alphabet or with _ (underscore)
  - Can include alphabets, _ (underscore),digits
  - Case sensitive

- Examples:
  - Var_1 //Valid
  - 1_var // Not Valid
  - _var //valid
  - Var-1 // invalid
  - Basic Salary //invalid

Data Types, Variables & Constants

- C allows computations to be performed on various types of data.
  - Numerical: Whole numbers, Real numbers
  - Character: Single character, Strings

- Fixed data values are said to be constants.
  - 12, -45, 0, 2.3, 76.9, 1.23456e+2, 'A', "Sunbeam", etc.

- Data is hold in memory locations identified by names called as variables.
  - Variable must be declared before its use in the program.
  - As per need, variable have some data type.

- Simple C data types are: int, double, char.
  - Data type represents amount of space assigned to the variable.
  - It also defines internal storage of the data.

Data Types, Variables & Constants

- Variable examples
  - int number = 10;
  - double basic_salary = 20000.0;
  - char letter = 'A';
  - int roll_number;
  - roll_number = 20;
  - double price = 200.0;
  - price = 300.0;

- Each variable is assigned some memory location.
- Size of data type of given variable or constant is found by sizeof() operator.

Declaration, Definition, Initialisation

- Declaration : Intimate compiler about a particular resource like memory, function, data type about its nature
- Definition : Performance of resource
- Initialisation : Applicable to memory location which can be set with specific value.
- Variable : Nature of location which can be changed at runtime.

- int num; //declaration and definition
- int num = 10; //declaration, definition, assignment

printf()

- Arbitrary strings and variable values can be printed using printf() function.
  - int - %d
  - double - %lf
  - char - %c
  - …

- Examples:
  - printf("Hello PreCAT @ Sunbeam");
  - printf("%d", roll_number);
  - printf("%d %lf %c", number, basic_salary, letter);
  - printf("Book price is %lf", price);

- GIT Registration

Thank you!

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