Problem Solving With C - UE24CS151B

Variables and Data Types

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PROBLEM SOLVING WITH C

Variables and Data Types

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1. Identifiers
2. Variable declaration, definition and initialization
3. Keywords
4. Data types

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Identifiers

- It is a name used to identify a variable, keyword, function, or any other user-defined item.
- Starts with a letter A to Z, a to z, or an underscore '_' followed by zero or more letters, underscores, and digits (0 to 9)
- C does not allow few punctuation characters such as #, @ and % within identifiers

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Variable declaration, definition and initialization

- Variable is a name given to a storage area that a code can manipulate
- Has a **name, location, type, life, scope and qualifiers**
- Variable declaration and definition: int a; //An uninitialized variable has some undefined value. A variable can be assigned a value later in the code
- Variable initialization: int a = 10;

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Keywords

- Are identifiers which have special meaning in C.
- Cannot be used as constants or variables
- Few here: auto, else, long, switch, break, enum, case, extern, return char, float, for, void, sizeof, int, double …
- int auto = 10; // Error

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Data Types

- The amount of storage to be reserved for the specified variable.
- Significance of types: **Memory allocation, Range of values allowed, Operations bound to this type, Type of data to be stored**
- Categories: Primary → int, float, double and char
  Secondary → Derived(Arrays) and User defined(struct, enum, union and typedef)
- sizeof(short int)<=sizeof(int)<=sizeof(long int)<=sizeof(long long int)<= sizeof(float)<=sizeof(double)<=sizeof(long double)
- Coding examples on Range of values using limits.h

THANK YOU

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