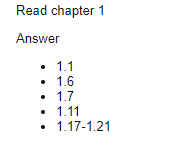
* 1. ) His idea was to store the program and progress the operators of the computers because this let the computer have a bunch of data inputted and perform the required action, it was a performance improved over having to re write the entire code. This made an improvement in time and efficiency.

1.6) In general computer programming a data type is an attribute of data which is read into the complier how to use the data. A data type in Java, the int, is represented as 32-bit integers ranging from negative 2 billion to positive 2 billion. The string data type in python has functions that allow string manipulation. You can also multiply an integer with a string and add to concatenate a string with another string.

1.7) A data struct is the implementation of the Abstract Data Type (ADT). While ADT is the definition of the new type within that data struct. The book defines a data struct as a method for collecting data into a single unit (like an apartment with lots of residents). When coding you might want to keep some code hidden from the consumer eye. When doing this you can define data types within the code that hide information. Abstract data types are those hidden data members that create new data types. ADT types are List and a Map while the Data Struct is an Array List, Linked Listed & Hash Tables, Tree Maps.

1.11) Having a method packaged into a function allows that method to be reused in other parts of code where it might need to duplicate. Make a void function that alter a string display could be made once but reused over and over. Space and implication or code reduce to one line in some areas. Functions are typically hidden from the user/consumer and are named exactly what they are meant to do. Functions are great for solving various of problems since you input some parts to the problem (parameters and arguments) and the functions spits out the result you want.

1.17) The lexical error is detected during the lexical analysis phase of the code. A lexical error is a sequence of characters that does not match the pattern of any token. These errors are detected during the execution of the program. The kind of error it can be is spelling error, illegal characters, removing a character that should be present and some other character restrictions.

In c/c++ Python

X = 1xab //not a number or identifier strings var //to declare a string no s

1.18)

In c/c++ Java

int variable = 0 //needs a semicolon to finish if (statement) { { } //sometimes people lose track of the amount of curly braces ( I did a lot in java)

1.19) An example of a semantic error is when forgetting to divide by 100 when printing a percentage amount. These errors will cause an error message, but your program will not give expected behavior. prnt (5) //python semantic error since print was spelt wrong.

1.20) By far one of the worse errors I’ve encountered. Mainly because it is a runtime error that may simply produce incorrect output and cause during that output.

In c/c++ The logic is wrong which causes the cause during runtime

div = n/0;

printf("resut = %d", div); or cout for c++

1.20) Bye code is like machine code, but not the same, it be a run time system. Java takes those bytes into machine code when it runs Java’s underlying machine that interprets those bytes interacting with the operation system on the computer. Byte code has the advantage since it only depends on the run time system and the virtual machine. And because of that it is a platform-independent system. It makes java well suited for mobile technology. C++ needs recompilation and are directly complied to machine code.

