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CSCE 113-501

Problem 1

1. Name four parts of a function deﬁnition.
   1. Return type, function name, parameter list, function body
2. What is a purpose of a compiler?
   1. To translate human readable code into machine language
3. What is purpose of the include directive?
   1. To make available resources from a file or library, without having to copy the code directly
4. What does a .h sufﬁx at the end of a ﬁle name signify in C++?
   1. That the file is a header or library file
5. What does the linker do for your program?
   1. It links together different object codes from several sources to produce the final executable
6. What is the difference between a source ﬁle and an object ﬁle?
   1. A source file is in human readable language and an object file is in machine language such as binary
7. What is an IDE and what does it do for you?
   1. interactive development environment, it usually contains helpful features such as color coding debugging and compiling, it combines many of the steps of coding into one program
8. What terminates input into an integer or a string?
   1. whitespace
9. What is an object?
   1. An object is a region of memory with a type that specifics what kind of information can be placed in it.
10. What is a literal? Name their different types.
    1. A literal is a constant expression, string , int, char, double, etc
11. What is a variable? Name their types and typical sizes.
    1. A named object, char 1 byte, int 4 bytes, double 8 bytes, unsigned 4 bytes
12. What measure do we use for the size of small entities in memory, such as int and string?
    1. Bytes, a group of 8 bits with each bit representing either a 1 or a 0
13. What is the difference between = and ==?
    1. = is an assignment operator and == is the logical operator equal to
14. What is a deﬁnition?
    1. It is a declaration that includes the function body
15. What is an initialization and how it differ from an assignment?
    1. Giving a variable its initial value, an assignment is giving a variable a New value
16. What is the string concatenation and how do you make it work in C++?
    1. It is placing a string at the end of another string to get one bigger string, by using the + operator
17. What are some good rules for choosing names?
    1. Make them relevant, use acronyms sparingly, and don’t make them overly long
18. What is type safety and why is it important?
    1. Type safety is converting safely from one type to another, because it prevents system crashes and errors that can go undetected such as loss of data
19. Why the conversion from double to int be a bad thing?
    1. Because the number can lose its specific value (data loss by narrowing) such as 2.2 becomes 2
20. Deﬁne a rule to help decide if a conversion from one type to another is safe or unsafe.
    1. If the size of memory is smaller in the second type it is an unsafe conversion

Problem 4

An int and a long can hold up to the 45th Fibonacci number and its value is 1836311903

A long long type can hold up to the 91st Fibonacci number and its value is 7540113804746346429