Object-Oriented Programming Using C++

Course 605.604
Summer 2021

JOHNS HOPKINS UNIVERSITY
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Homework Assignment #1
Due 06/07/21

1 C++ compilers provide a header file called `climits` that contains symbolic constants representing minimum and maximum values for the various built-in types, some of which are indicated in the table below. Write a program that displays the minimum and maximum values for the built-in character and integer types in the table associated with your C++ implementation. The program should also display the number of bytes required to store each numeric type (use sizeof operator) in your implementation.

Symbolic Constant	Type Represented
`CHAR_BIT`	Number of bits in a `char`
`CHAR_MAX`	Maximum `char` value
`CHAR_MIN`	Minimum `char` value
`SHRT_MAX`	Maximum `short` value
`SHRT_MIN`	Minimum `short` value
`USHRT_MAX`	Maximum `unsigned short` value
`INT_MAX`	Maximum `int` value
`INT_MIN`	Minimum `int` value
`UINT_MAX`	Maximum `unsigned int` value
`LONG_MAX`	Maximum `long` value
`LONG_MIN`	Minimum `long` value
`ULONG_MAX`	Maximum `unsigned long` value
`LLONG_MAX`	Maximum `long long` value
`LLONG_MIN`	Minimum `long long` value
`ULLONG_MAX`	Maximum `unsigned long long` value

2 Design a method that permanently swaps the value of two arguments. The method shall take two arguments. The method shall test whether the value of the second argument is less than the value of the first argument. If it is, the values of the arguments are swapped. For example, if the first argument is 10 and the second

argument value is 5, the first argument will have a value of 5 and the second argument will have a value of 10 after the method call. Design two versions of the method. One version will use pointers for arguments and the other will use references. Call each method from a main() method to verify that they work correctly.

Submit the source code and screen shots of all program output in a zip file named as follows: Assignment_1 followed by an underscore (_) followed by your first name initial, followed by your last name. For example, if your name were Jane Smith and your student your zip file would be Assignment_1_jsmith.zip. Be sure that your source code is well-commented and uses good style practices.