Practical-09 Task – 5

WAP to create a College class and Student Structure in C++ in one program. By providing such suitable examples write at least 5 differences between class and struct code your have written above.   
Hint [Access Specifiers, Heap and Stack, large and small memory, etc.]

**Ans : In the code I have written, I’ve created a class *College*  and a structure *Student.* We can note here that we can have different access specifiers for different members of a class. In the C++ program, I’ve created two objects C initiated from class College & S initiated from structure Student. And we have also marked that the year > 0.**

**Now, we can set the value of year for class object by writing C.setYear(y1); where y1 is an integer taken as input from the user. And to set the value of year for structure object we have two ways : S.setYear(y2); or S.year=y2; because the member year of structure is publically accessible. Therefore, we can directly assign its value. So, that’s the first difference between strcucture and class , the default access specifier for structure is public while that for class is private.**

**Also, when I am setting the value of year as negative for class object , then it is not allowing me, since, our condition year>0 evaluates to false . Hence, if we try to assign the value of year as negative integer, it displays the message “Enter a valid value for year” and assigns 0 to year. But, that’s not the case in structure, because the statement S.year=y2; will be executed. Thus, it would assign negative value to the year of structure object overruling our condition.**

**Thus, for data security concern and to keep data private and only accessible by member functions, Classes are preferred over structures.**

**More differences :**

* **When structure is implemented memory is allocated on the stack. While, in case of class, memory is aloocated on heap.**
* **Structure instance is called structure variable while class instance is called Class Object.**
* **Structures don’t support inheritance, while classes do.**
* **Class can hold both data and member functions while structures can hold only data.**