

Problem Name: Mobile Phone

Problem Requirements:

A class named Phone has the following member variables:

Data member	Value range	Measurement Unit	Description
int screenWidth	1600 to 2200	px	This variable contains the display width of the phone
Int screenHeight	1000 to 1400	px	This variable contains the display height of the phone
Int refreshRate	1 to 240	Hz	This variable contains the refresh rate of the phone's display

Note: Data members of the Phone class are in the given values range only.

Member functions of the Phone class:

Member Function	Arguments	Return type	Description
Default ctr	None	none	update all member variables as <ul style="list-style-type: none">• screenWidth --> 2200• screenHeight --> 1400• refreshRate --> 120
Parameterized ctr	Int var1, int var2, int var3	none	update all member variables as <ul style="list-style-type: none">• screenWidth --> var1• screenHeight --> var2• refreshRate --> var3
Copy ctr	const Phone &	none	Copies one object state into another
Destructor	none	none	Do nothing destructor
displayPhone()	none	void	A member function used to display all the data members of Phone class in the below format and then jump to a new line "screenWidth,screenHeight,refreshRate"
aspectRatio()	none	int	A member method that can calculate the Aspect Ratio of the Phone's display and return it. aspectRatio = screenWidth/screenHeight
setHz()	int	int	A member method used to update the refreshRate data member. Assume input varHz value to be positive.

			<p>Check if the given argument for refreshRate is within specified ranges as mentioned in the requirement. If values are within the ranges, only then update the refreshRate using varHz value and return 1 as value. In case the argument value is out of range, update the refreshRate as 240, return 0.</p> <p>E.g.: obj.setHz(340); In the above line, 340 is out of the refreshRate range. Hence function should update the refreshRate value as 240</p>
setPhone()	int, int, int	void	<p>A member method used to update screenWidth, screenHeight, and refreshRate member variables using the arguments passed. Check if given argument values for all the member variables are within specified ranges. Only if values are within ranges, then update and print the updated values of member variables inside the function. In case, the argument value is out of range, do not update that specific member variable.</p> <p>E.g.: obj.setPhone(2800, 1000, 380); In the above line, 2800 is out of the screenWidth range and 380 is out of the refreshRate range. Hence function should update only the screenHeight value and the other two member variables for that object should remain unchanged</p>
Overloaded operator+	none	int	<p>A member method used for refreshRate control. The refreshRate is incremented by 10 every time this method is called. Check if the given updated value for refreshRate will be within the specified range post updating it. Only if the updated value is less than or equal to 240, update the refreshRate and return 1. In case the Updated Value is out of</p>

			<p>range and return 0 from the method.</p> <p>E.g. 1: Phone obj; obj.setPhone(2200, 1000, 240); obj.operator+(); In the above lines of code, 240 is in the refreshRate and when incremented by 10 will fall out of range (becomes > 240). Hence function should not update the refreshRate value and return 0.</p> <p>E.g. 2: Phone obj; obj.setPhone(2200, 1000, 100); obj.operator+(); In the above code, 100 is the refreshRate and when incremented by 10 will fall in range (remains < 240). Hence function should update the refreshRate and return 1.</p>
Overloaded operator> as Friend	Phone&, Phone&	Phone	<p>A friend function used to compare 2 objects of Phone class based on Aspect Ratio which are passed as arguments. Then, return the object with the bigger Aspect Ratio among the two. If both object's Aspect Ratio is equal, return first object</p> <p>E.g.: if two objects passed are as follows: Phone obj1(2100, 1000, 90); Phone obj2(1900, 1150, 60); Phone obj3; obj3 = operator>(ob1, ob2);</p>

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