Aaron Gravelle

CSE 210

What is Encapsulation and why is important?

Encapsulation restricts direct access to an object's components while allowing controlled access through public methods like "getters" and "setters." This protects the object's integrity by preventing unauthorized or unintended changes to its data. Here is a visual example of encapsulation:

private string \_text; (“Private Field”)

private bool \_isHidden; (“Private Field”)

public void Hide()

{

\_isHidden = true;

}

public string GetDisplayText()

{

(“I shortened this ‘If’ and ‘else’ statement to preserve space on this assignment.”)

return \_isHidden ? new string('\_', \_text.Length) : \_text;

}

Furthermore, A real-world example is social media profiles: users can send messages and share pictures but cannot modify another person’s profile. The profile is encapsulated and can only be accessed or altered through controlled methods, such as settings or permissions. This ensures security and maintains the integrity of the data.