

With Random Weight Initialization:

1. Code Changes:

- Added a function `_initialize_weights()` to the `model_architecture()` class that applies random weight initialization:

```
def _initialize_weights(self, init_type):  
    # Loop through each layer and initialize the weights  
    for m in self.model:  
        if isinstance(m, nn.Linear):  
            init.xavier_uniform_(m.weight) # Xavier  
            initialization
```

2. Output:

