SWE 265P HW6 Second Issue

Issue Description

The issue we worked on is Remove support for delaying state recovery pending master nodes #51806. Elasticsearch is a distributed system, operating in a cluster. When we restart the cluster, elasticsearch will recover the cluster state through the gateway. There are two types of nodes in a cluster: master node and data node. It is useful to delay the cluster recovery until a certain amount of data nodes have joined the cluster, because this allows the shard allocator to reuse as much data as possible. Currently we also have the setting of delay the state recovery until a certain amount of **master-eligible** nodes joined the cluster, but this seems unnecessary because we require a majority of master-eligible nodes for state recovery, but there is no advantage in waiting for more. So we could deprecate and remove some of the gateway settings to simplify this area.

Our solution

Fixing this issue is a two-part procedure: first PR deprecate the revenant settings and second PR remove the settings.

Deprecate the settings

The settings we need to deprecate are gateway.expected_nodes, gateway.expected_master_nodes, gateway.recover_after_nodes and gateway.recover_after_master_nodes, in the GatewayService class. We marked those settings as Property.Deprecated, wrote a new test case to confirm that they are properly deprecated and modified the documentation and marked those settings as deprecated and will be removed in a future version.
Link to pull request: https://github.com/elastic/elasticsearch/pull/53646

Delete the settings

To delete the settings, we modified every usage of the settings and migrated the logic to the logic mentioned in the issue, the simplified one that only concerns data nodes. Also we modified the existing test case to test the modified code and removed the setting description from the documentation.

By the time we wrote this report, we had finished modifying the code and made our first pull request. We are still waiting for the response from the maintainer. Once our pull request get merged we can make the second pull request.