**Alpha Shark Token Audit**

View functions

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| Name | Description | Access | Remark | Status |
| ifBoostTypeAvailable | Check if a particular boost type is available | Public |  | * Why public?   Using for loop, might consume too much gas if multiple boost types are introduced in future. Also adds gas to internal functions. |
| returnSingleSharkData | Get Data for a shark | Public |  |  |
| returnOwnerAllSharkData |  | Public | Revisit |  |
| getOwnerList | To view all tokens owned by user. | External /public |  |  |
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State Modifying functions:

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| Name | Description | Access | Remarks | Status |
| Initialize() | To initialize the contract | Alpha\_shark\_factory/ deployer | does not affect Default\_admin\_role,only ownership is transferred. |  |
| updateRewardAddress() | Change reward token address | onlyOwner |  |  |
| toggleClaimReward | Allow/restrict award claims | onlyOwner |  |  |
| addBooster | Add new booster type. | Only booster |  |  |
| assignBooster | Assign booster to a user. | Only Booster | * Check if assigned boosts are removed post expiry. This will add gas for longer terms users. |  |
| userBoostAvailabitiy | Check if user has particular boost Type alloted | Internal | * Removes boost type if found. This will might be troublesome when a user has multiple units of particular boost Type,say junior shark. Not valid if availableBoosts is storing only active boosts. * Removal is being done from local copy of available boosts, not in actual mapped array. CHECK |  |
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ReentrancyGuard constructor redundant -> line 91;

Boost -> “*There are 3 category of these boosters. Only one of each type of boost can be activated on a Shark*” -> Can another boost be applied on same shark post expiry of previous shark.

*Boost activated by the smart contract.* -> explanation required. -> **user to activate boost.**

**Can users transfer Shark tokens/Available Boosts/Junior Sharks to non-Shark holders/other holders?**

**S1 boost-> minting first 1000 & minting odd -> mutually exclusive ? ,i.e., odd sharks minted within first 1000 to receive 30% or (30% + 10%) boost.**

**Boost from Junior shark to have expiry or to be valid until junior shark is unstaked?**

*If a bid is lost,* ***tokens are reclaimable*** *and can be used for bidding on* ***any other whitelist. ->*  can reclaimed tokens be used only for raffle, or other purposed too?**

**.**

Test Conditions:

1. Deployment with correct variables set.
2. Check use of admin only methods before initialization.
3. Initialization does not affect Default\_admin\_role,only ownership is transferred.

Check role assignment

Multiple for loops used. -> This will increase gas costs and possibility of required gas exceeding maximum allowed. Better to limit number of boosters that can be collected by a user to some fixed value.