

GAIL-BK225

MODULE@2: SmartContracts

Gail and Evaluators

1. Users

Functions	Description
Create User	Params: Model fields. → Username → Password → Email → Address → Profile Picture → Team Name → Designation: Gail User/Evaluator Function: Saved as USER_<Username> in blockchain db Return: Void
Get User	Params: Username, Password Return: JSON user data model with all fields
Get Num Contractors	Params: Void Return: Number of Contractor/Shipping Agencies registered.
Update Num Contractors	Params: Void Function: Increments number of Contractors/Shipping Agencies registered by 1. Return: Void

2. Project

Functions	Description
Create Project	Params: Model fields → Username

	<ul style="list-style-type: none"> → ProjectID: Automatic unique ID generated equal to number of projects registered by GAIL till now. → Title → Description → Create Time Stamp → Deadline: After the deadline is met, GAIL will be able to review all the applied bids and add it's custom reviews. → ContractorID: Initially NULL, later equal to assigned contractor → BidID: Initially NULL, later equal to best evaluated bid → Status: Floated/In-Progress/In-Shipment/In-Pre-Review/In-Review → Progress: Array of descriptive timed logs → Brochure: Uploaded in form of PDF <p>Function: Saved Model as PROJECT_<ProjectID> in blockchain db Return: Void</p>
Get Project	<p>Params: ProjectID Return: JSON project data model with all fields</p>
Get Num Projects	<p>Params: Void Return: Number of Projects registered by GAIL till now</p>
Update Num Projects	<p>Params: Void Function: Increments number of Projects by 1 Return: Void</p>
Update Project BidID	<p>Params: ProjectID, bidID Function: Updates field 'bidID' for project of <ProjectID> Return: Void</p>
Update Project ContractorID	<p>Params: ProjectID, contractorID Function: Updates field 'contractorID' for project of <ProjectID> Return: Void</p>
Update Project Progress	<p>Params: ProjectID, description, timestamp Function: Updates field 'progress' for project of <ProjectID> as pushes JSON field having description and timestamp into the progress array. Return: Void</p>
Update Project Status	<p>Params: ProjectID, status Function: Updates field 'status' for project of <ProjectID> Return: Void</p>

3. Bid

Functions	Description
Apply for Project	<p>Params: Model fields.</p> <ul style="list-style-type: none"> → Username → ProjectID

	<ul style="list-style-type: none"> → BidID: AutoGenerated Unique ID generated by currentTimeStamp of application → BidDetails: JSON of various params like price, ISO standards, rating, product quality. (more can be added as per requirement) <p>Function:</p> <ul style="list-style-type: none"> → Saved as BID_<BidID> in blockchain db → Pushed to APPLIED_<ProjectID> array of all applied bids of the given project in the blockchain dc. <p>Return: Void</p>
Get Bid	<p>Params: BidID</p> <p>Return: JSON bid data model with all fields</p>
Get ProjectBids	<p>Params: ProjectID</p> <p>Return: Array of all the applied bids for given projectID.</p>

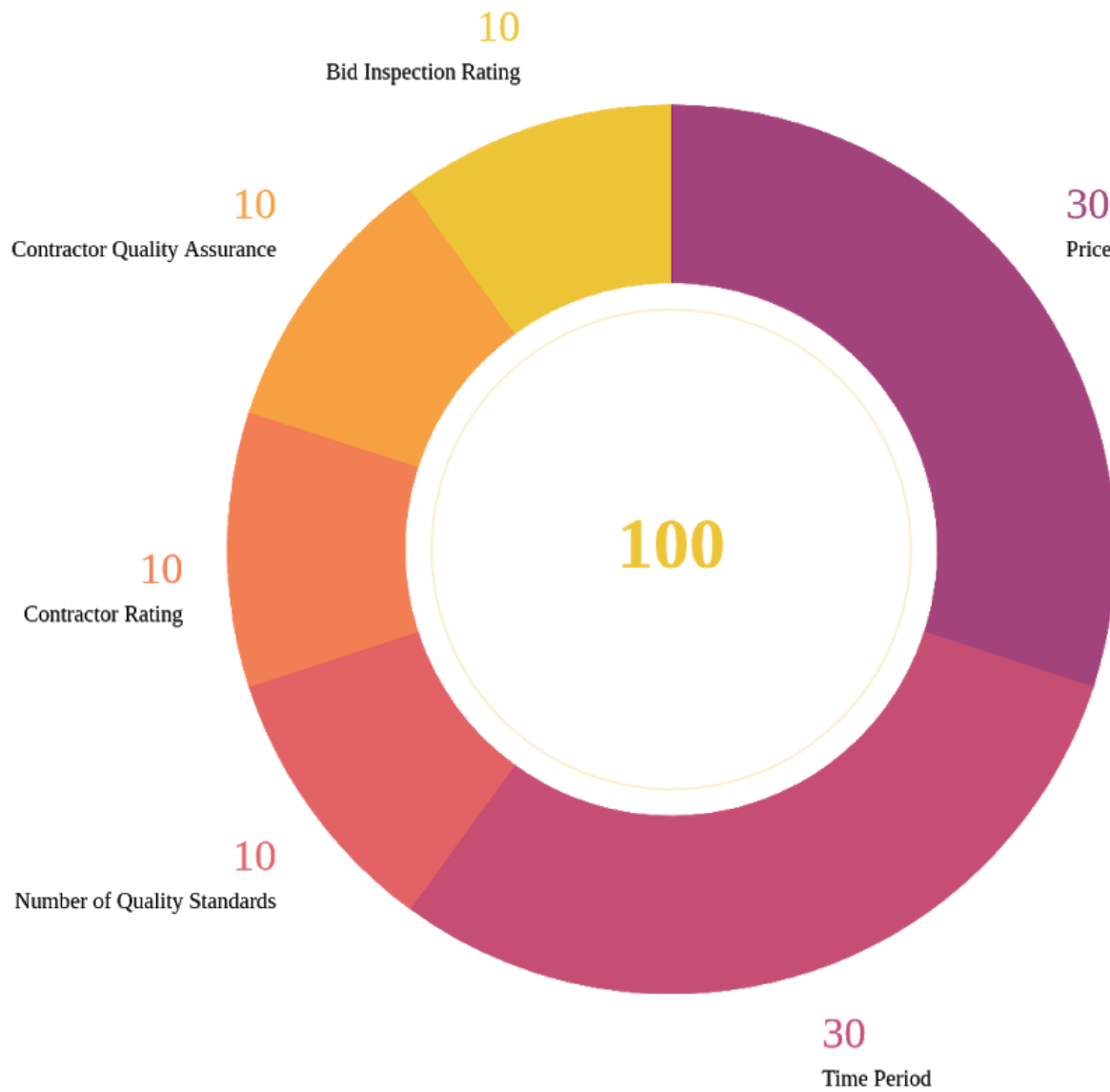
Contractors and Shipping Agency

1. Users

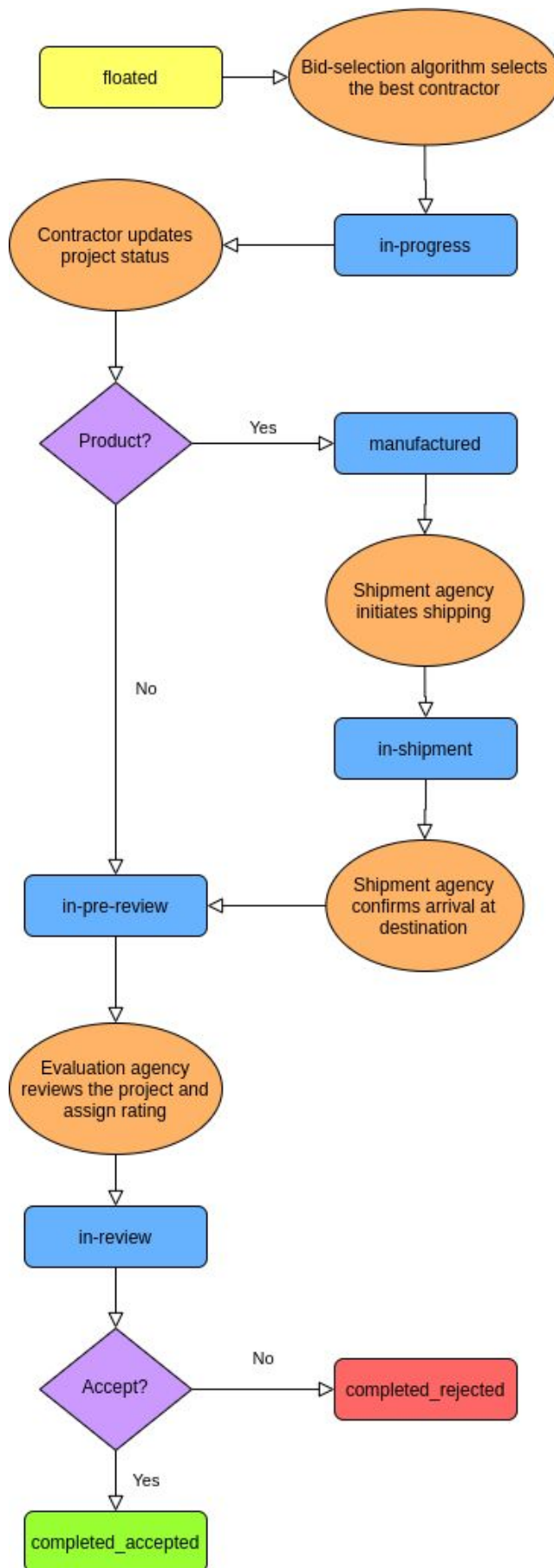
Functions	Description
Create User	<p>Params: Model fields.</p> <ul style="list-style-type: none"> → Username → Password → Email → Address → Contact → AboutUs → ProfilePic → ListOfPrevious Projects: Array of JSON of all previous allocated projects to the contractor by GAIL by params like ID, rating, quality, review. → ActiveProjectID: NULL if no active project, otherwise equal to the projectID assigned to the contractor → ActiveBidID: NULL if no active project, otherwise equal to the BidID that the contractor had applied for the allocated project. → OverallRating: Average rating provided to the contractor based on past deals with GAIL → OverallProductQuality: Average product/service quality provided to the contractor based on past deals with GAIL <p>Function: Saved as CONTRACTOR_<Username> in blockchain db</p> <p>Return: Void</p>
Allocate Project	<p>Params: ProjectID, BidID</p> <p>Function: Changes fields 'activeProjectID' from NULL to <ProjectID> and</p>

	'activeBidID' from NULL to <BidID> Return: Void
Dellocate Project	Params: Username, Rating, Quality, Review Function: <ul style="list-style-type: none"> → Changes fields 'activeProjectID' to NULL and 'activeBidID' to NULL → Added JSON of id, current rating, quality, review in array of list of previous projects. Return: Void
Get Num of Previous Projects	Params: Void Function: Returns length of the array of previous projects in the project data model. Return: Void
Get/Update functions	Params: Void(GET), <value>(UPDATE) Function: Query to blockchain db to fetch or put updated state accordingly.

Bid Evaluation Algorithm (Weights)



Project Lifecycle



DOMESTIC USE CASE

