DATA STRUCTURES AND DATA STORE DESCRIPTION

FIELD NAME	KEY	DATA TYPE	DATA SIZE/LENGTH	DESCRIPTION
STRUCTURE-1 RAW SIGHTINGS				
Sighting ID	Primary Key	Integer	2 bytes	Stores the ID for the sighting
Count	not null	Integer	2 bytes	Number of birds spotted
Species ID	Foreign Key	Integer	2 bytes	Stores the ID of the species sighted
Date Time	not null	Date-Time		Time at which sighting is recorded
Location Longitude	not null	Float	4 bytes	Longitude of sighting location
Location Latitude	not null	Float	4 bytes	Latitude of sighting location
User ID	Foreign Key	Integer	2 bytes	ID of the user who entered the sighting
Image		Binary		Image of the bird sighted
DESCRIPTION: This structure stores the data about the raw sightings that are inputted by the user				
FROM PROCESS: 3-Sighting Retrieval, 2.1-User Ratification				
TO PROCESS: 2.2-Final Ratification				
STRUCTURE-2 RATIFIED SIGHTINGS				
Sighting Id	Primary Key	Integer	2 bytes	ID for the cumulative information of species sightings which happened at a place and time
Species ID	Foreign Key	Integer	2 bytes	ID of the species sighted
Location	Foreign Key	Integer	2 bytes	ID of location
Count	not null	Integer	2 bytes	Number of specimens seen
Number of Sightings	not null	Integer	2 bytes	Number of sightings of the specimen
Month	not null	Text	50 Characters	Stores the month of sighting
Image		Binary		Image of particular sighting
DESCRIPTION: This stores the sightings which have been ratified by users and can provide digestible information about sightings				
FROM PROCESS: 2.2-Final Rtification, 3-Sighting Retrieval				
TO PROCESS:				
STRUCTURE-3 SPECIES				
Species ID	Primary Key	Integer	2 bytes	ID of the species
Common Name	not null	Text	50 Characters	Common name of the species
Scientific Name	not null	Text	50 Characters	Scientific Name of the species
DESCRIPTION: Stores information about species				
FROM PROCESS: 3.3.1-Species Retrieval, 2.2-Final Ratification, 2.3-Add Species				
TO PROCESS:				
STRUCTURE-4 LOCATIONS				
Location ID	Primary Key	Integer	2 bytes	ID of the location grid
Longitude Start	not null	Float	4 bytes	Begining longitude of the grid
Longitude End	not null	Float	4 bytes	Ending longitude of the grid
Latitude Start	not null	Float	4 bytes	Begining latitude of the grid
Latitude End	not null	Float	4 bytes	Ending latitude of the grid
DESCRIPTION: Stores the list of location grids in which sightings have been submitted				
FROM PROCESS: 3.3.2-Location Retrieval				
TO PROCESS:				
STRUCTURE-5 USER INFORMATION				
User ID	Primary Key	Integer	2 bytes	ID for a particular user
Username	not null	Text	50 Characters	Name of the user
E-mail	not null	Text	50 Characters	Email
Password	not null	Text	50 Characters	Password
DESCRIPTION: Stores the personal details of the user and user ID				
FROM PROCESS: 1-User Information Process				
TO PROCESS: 1-User Information Process				
STRUCTURE-6 USER DETAILS				
Username	not null	Text	50 Characters	Name of the user
E-mail	not null	Text	50 Characters	Email
Password	not null	Text	50 Characters	Password
DESCRIPTION: Stores the personal details of the user				
FROM PROCESS: 1-User Information Process				
TO PROCESS: 1-User Information Process				
STRUCTURE-7 USER AUTHENTICATION DETAILS				
User ID	Primary Key	Integer	2 bytes	ID for a particular user
Username	not null	Text	50 Characters	Name of the user
Token	not null	Text	40 Characters	Token for user validation
DESCRIPTION: Stores user info related for login session maintainance				
FROM PROCESS: 1-User Information Process				
TO PROCESS: 1-User Information Process				

DATA FLOW DESCRIPTION

DATA FLOW NAME	DESCRIPTION	FROM	TO	DATA STRUCTURE
USER INFORMATION				
Registration	Contains user details	User Entity	1 User Info process	USER DETAILS
		1 User Info process	User Details Table	
Process Registration response	Confirmation of adding user to database	User Details Table	1 User Info process	USER DETAILS
User Registration response	Confirmation of adding user to database	1 User Info process	User Entity	USER AUTH DETAILS + USER DETAILS
User Login	Contains user details for login	User Entity	1 User Info process	USER DETAILS
		1 User Info process	User Details Table	
User Login Confirmation	Confirmation about user details	User Details Table	1 User Info process	Confirmation message
User Login Response	Token and confirmation message for login	1 User Info process	User Entity	USER AUTH DETAILS
Update user Information	Contains updated personal details of user like	User Entity	1 User Info process	USER INFORMATION
		1 User Info process	User Details Table	
Update user information response	Confirmation for updating user details	User Details Table	1 User Info process	Confirmation message
		1 User Info process	User Entity	
Request user Info	Request for all the data about current user	User Entity	1 User Info process	User Information Request
		1 User Info process	User Details Table	
User Information Response	Returns user data from database	User Details Table	1 User Info process	USER INFORMATION
		1 User Info process	User Entity	
SIGHTING INPUT				
New Sighting Input	Contains information about a new sighting	User Entity	2.1 User Ratification	RAW SIGHTING
Raw Sighting Input	Information about a new sighting	2.1 User Ratification	Raw Sightings Table	RAW SIGHTING
User Ratification	Shows user the sightings which need to be ratified	2.1 User Ratification	User Entity B	RAW SIGHTING
User Ratification Result	Updated sighting information	User Entity B	2.1 User Ratification	RAW SIGHTING
User Ratified Sightings	User ratified sightings goes for final confirmation	2.1 User Ratification	2.2 Final Ratification	RAW SIGHTING
Species Confirmation	Request to for species information	2.2 Final Ratification	Species Databse	Species Database Request
Species Confirmation Result	Species information	Species Databse	2.2 Final Ratification	SPECIES
Expert Ratification	Sighting Information for expert verification	2.2 Final Ratification	Expert Entity	RAW SIGHTING
Expert Ratification Result	Confirmation/Denial about sighting possibilty	Expert Entity	2.2 Final Ratification	Confirmation message
New Species	Species information to be added in database	2.2 Final Ratification	Admin	SPECIES
		Admin	2.3 Add Species	
		2.3 Add Species	Species Databse	
Refined Sighting	Refined sighting information	2.2 Final Ratification	Refined Sighting Database	REFINED SIGHTING
Sighting addition confirmation	Confirmation message about user's sighting	2.2 Final Ratification	2.1 User Ratification	Confirmation message
		2.1 User Ratification	User Entity	
SIGHTING RETRIEVAL				
PROCESS 3.1				
Request Species List	Request for a list of species based on a condition	User Entity	3.1.1 Species Retrieval	Species List Request
		3.1.1 Species Retrieval	Species Database	
Species List Response	Contains a list of species	Species Database	3.1.1 Species Retrieval	SPECIES
		3.1.1 Species Retrieval	User Entity	
Species ID Sighting Request	Request for sightings of a scpecies based on ID	User Entity	3.1.1Species Retrieval	Species Sighting Request
		3.1.1 Species Retrieval	3.1.2 Sighting Retrieval	
		3.1.2 Sighting Retrieval	Refined Sighting Database	
Species sighting Response	List of refined sightings for the species	Refined Sighting Database	3.1.2 Sighting Retrieval	REFINED SIGHTINGS
		3.1.2 Sighting Retrieval	3.1.1 Species Retrieval	
		3.1.1 Species Retrieval	User Entity	
PROCESS 3.2				
Request Location List	Request for a list of location grids based on a condition	User Entity	3.2.1 Locations Retrieval	Locations List Request
		3.2.1 Locations Retrieval	Locations Database	
Locaitons List Response	Contains a list of locations	Locations Database	3.2.1 Locations Retrieval	LOCATIONS
		3.2.1 Locations Retrieval	User Entity	
Locaiton ID Sighting Request	Request for sightings at a location based on ID	User Entity	3.2.1 Locations Retrieval	Location Sightings Request
		3.2.1 Locations Retrieval	3.2.2 Sighting Retrieval	
		3.2.2 Sighting Retrieval	Refined Sighting Database	
Location sighting Response	List of refined sightings for the location	Refined Sighting Database	3.2.2 Sighting Retrieval	REFINED SIGHTINGS
		3.2.2 Sighting Retrieval	3.2.1 Locations Retrieval	
		3.2.1 Locations Retrieval	User Entity	
PROCESS 3.3				
Request User Information	Request for data about the current user	User Entity	3.3.1 User Information Retrieval	User Info. Request
		3.3.1 User Information Retrieval	Users Information Database	
User Information Response	Contains user's information	Users Information Database	3.3.1 User Information Retrieval	USER INFORMATION
		3.3.1 User Information Retrieval	User Entity	
User ID Sighting Request	Request for sightings submitted by a user	User Entity	3.3.1 User Information Retrieval	User's Sightings Request
		3.3.1 User Information Retrieval	3.3.2 Sighting Retrieval	
		3.3.2 Sighting Retrieval	Raw Sighting Database	
User sightings Response	List of sightings submitted by the user	Raw Sighting Database	3.3.2 Sighting Retrieval	RAW SIGHTINGS
		3.3.2 Sighting Retrieval	3.3.1 User Information Retrieval	
		3.3.1 User Information Retrieval	User Entity	

S No.	Process Name	Description	Inbound Data Flows	Outbound Data Flows
		Processes For WildSight		
1	User Information Process	Handling any operation related to user information which includes registration, login,logout or retrieve user information or update user information comes under this process.	User credentilas Information, User Information Request, Updated user information	Authentication response, User Information Response, Updated user information response
2	Sighting Input Process	operations related to taking input new sighting input from user and sending it for ratification to other users and in extreme scanerios to expert and then adding ratified sighting to database.	New Sighting Input, Confirmation/Denial from user, Confirmation/Denial from expert	Confirmation/Denial response to sighting owner, User Ratification request, Expert Ratification request
3	Sighting Retrieval Process	This process handles operations which are required for retirieving data related to sightings. The data may be retrieved on the basis of location, species or the sightings that the user has submitted	Location Sighting Request, Species Sighting Request, User Sighting Request	Sighting Requests, Sighting Responses