

**Title: Provenance of Knowledge: Digitization of reference collection of Pakistan Museum of Natural History through Web-Based Front-End and Android-Based Features**

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**Abstract:** Pakistan Museum of Natural History (PMNH) is the only natural history museum on national level in Pakistan that is holding more than one million specimens of animals, plants, minerals, rocks and fossils. To enlighten the role of PMNH and disseminate its related knowledge among scientific and cultural communities at national and international level including web users/ audiences and gaining effective control over its huge collections, Federal Ministry of Science and Technology's funded project "Biodiversity of Pakistan: Database and Global Networking (BGN)" has already been completed. The project was aimed to carryout automation and networking of PMNH for efficient maintenance / retrieval of specimen's records, web publishing of information and provision of maximum information to public, researchers, graduates and policy-makers. The project was also part of the programme entitled "Global Biodiversity Information Facility" (GBIF). GBIF aims to promote and implement the compilation, standardization, digitization, and global dissemination of the world's primary biodiversity

data through online information system that enable users to access and use increasing volumes of biodiversity data freely and openly on a global basis through its portal, [www.gbif.net](http://www.gbif.net). The digitization/archival of museum records have grown globally in the past few years and many countries have digitized their massive collections beyond display cases, dioramas, popular research articles and floating it online. Sensing the need, PMNH has already digitized about 10% of its specimens through its collaboration with the GBIF through BGN project.

As a result of addition of more and more collections annually and having the asset of more than 1.2 million specimens, PMNH has prepared a proposal for funding to IGNITE (formerly ICT R & D Fund) in order to digitize all the specimens deposited at the museum. The digitized information will include photographs/ videos, taxonomic data, ecological parameters, geographical/ GIS information and the distribution maps of each specimen. User's friendly software will be developed having various associated applications following international standardized protocols. The final product in terms of digitized data of specimens will be made available online to the web users worldwide. The software will also be shared in future among the like-minded R&D institutes and universities across Pakistan to harvest their maximum biodiversity data for inclusion in the database.

The proposed work has several important areas of application – firstly it will take first steps towards digitization of the natural history wealth of the country deposited at PMNH. Secondly, it will allow for the public awareness of historical species and other information via the online web application as well as Android-based front-ends. Thirdly, it will also allow for users to learn about the Museum catalog at PMNH by means of a

game based on Android Smartphones/Tablets. Stakeholders for the application also include NGO's, policy makers, and national and international students, children, and researchers as well as the general Pakistani public and or people around the globe.