- The History Verse application - Enhancing Tourism through Technology:

The History Verse application is a graduation project developed by engineering students at The Bahira Higher Institute of Engineering & Technology, under the supervision of Dr. Mahmoud Gamal. This project focuses on tourism and aims to elevate the user experience for visitors exploring Egypt's rich historical sites.

Improving Tourist Experience:

The History Verse encompasses three distinct applications, each designed to address different aspects of the tourist journey:

1. **Augmented Reality Museum Guide:**

This application leverages augmented reality to create an immersive and interactive experience within museums. By overlaying digital information onto the real world, tourists can:

- Follow on-screen arrows that guide them directly to specific artifacts.
- View 3D models of artifacts, providing a detailed and engaging understanding of their significance.
- Access additional information and historical context about each piece.

2. **Egypt Museums and Itinerary Planner:**

Planning a trip can be overwhelming, so this application serves as a comprehensive resource for tourists:

- Discover information on various museums across Egypt, including their locations, collections, and visitor reviews.
- Plan and personalize a complete itinerary, from arrival in Egypt to departure, ensuring a smooth and enjoyable travel experience.

3. **Marketplace for Authentic Egyptian Souvenirs**

This platform connects tourists with genuine Egyptian souvenirs and gifts:

- Browse and purchase unique items from archaeological exhibitions and local artisans, supporting Egyptian heritage and craftsmanship.
- Reduce the risk of counterfeit products, ensuring an authentic and ethical shopping experience.

Chatbot for Easy Access to Information:

In addition to the three main applications, The History Verse also includes a chatbot feature. This allows users to easily ask questions and receive instant answers, further enhancing their experience:

- Get information about specific historical sites, artifacts, or cultural aspects of Egypt.
- Receive recommendations for nearby restaurants, attractions, or other points of interest.
- Seek assistance with travel logistics or any other inquiries that may arise during their trip.

A Vision for the Future of Tourism

The History Verse project represents a significant step towards integrating technology and tourism, creating a more engaging, informative, and enjoyable experience for visitors to Egypt. By utilizing augmented reality, itinerary planning tools, a curated marketplace, and a helpful chatbot, this project strives to deepen the connection between tourists and the historical wonders of Egypt.

Technologies Used in The History Verse Project

The History Verse application leverages a diverse range of technologies to deliver a comprehensive and engaging user experience:

User Interface (UI) Design

- **Figma:** Used for designing the application's user interface and creating a visually appealing and intuitive experience.
- **Blender:** Employed for 3D modeling of artifacts and creating realistic representations for the augmented reality feature.

Front-End Development

- **Android (Kotlin, XML):** The primary platform for building the mobile application, utilizing Kotlin for programming and XML for layout design.
- **Jetpack Compose:** A modern UI toolkit for building native Android interfaces with declarative Kotlin APIs.
- **Sceneform and ARCore:** These libraries enable the integration of augmented reality features, allowing users to interact with virtual objects in the real world.

Back-End Development

- **.NET:** A framework for building server-side applications and handling data processing and API requests.

- **Django:** A high-level Python web framework used for creating robust and scalable back-end services.
- **Firebase:** A platform that provides various back-end services like authentication, databases, cloud storage, and more.

Cloud Computing

- **Google Cloud:** Provides cloud-based infrastructure and services for hosting the application, ensuring scalability and reliability.

Artificial Intelligence (AI)

- **Llama 2:** A large language model potentially used for natural language processing tasks like powering the chatbot or providing information about historical sites.
- **Gemini:** Another large language model, potentially used for similar purposes as Llama 2.
- **Transformer:** A neural network architecture used in various natural language processing tasks, potentially used for language translation or text summarization.
- **PyTorch:** An open-source machine learning library that could be used for building and training various AI models within the application.
- **ChromaDB and Faiss:** These libraries are used for similarity search and vector indexing, potentially used for tasks like recommending similar artifacts or retrieving information based on user queries.
- **TensorFlow:** An open-source machine learning framework used for various task, including image recognition and object detection.
- **YOLO (You Only Look Once):** A real-time object detection system, potentially used for recognizing artifacts within the augmented reality experience