Dental Problem Deduction Android App

Project Description:

The Dental Problem Deduction Android App is a mobile tool designed to assist users in identifying dental problems such as abscess, impacted tooth, and tooth decay in dental images. It integrates a trained machine learning model with a user-friendly mobile interface for easy diagnosis and provides valuable information about preventive measures and oral hygiene practices.

Components:

Mobile App Interface:

- The mobile app interface is developed using Android Studio and Java/Kotlin.
- Users can capture or select dental images for analysis.
- It displays the prediction results to users.
- It also includes an educational section with dental problem preventions and oral hygiene tips.

Back-end Processing (Serverless or API):

- The back-end processing can be implemented using serverless computing or an API.
- It handles incoming image uploads and prediction requests.
- It communicates with the trained machine learning model to make predictions.

Machine Learning Model:

- The trained machine learning model is a convolutional neural network (CNN) that has been trained to classify dental problems.
- It uses TensorFlow and Keras for model development.
- The model is integrated into the mobile app for making predictions.

Deployment:

- The Android app is deployed on the Google Play Store for Android users.
- It is made accessible to users via their Android devices.

Workflow:

- Users download and open the Android app on their mobile devices.
- They capture or select dental images for analysis.
- The mobile app sends the uploaded image to the back-end processing system.
- The back-end processing system preprocesses the image and uses the integrated machine learning model to predict the dental problem.
- The prediction result is displayed on the mobile app interface.
- Users can view the predicted dental problem, take appropriate action, and access information on preventive measures and oral hygiene practices.

Additional Considerations:

Security and Privacy:

- The application must adhere to data privacy regulations when dealing with sensitive dental images.
- Secure data transmission and storage practices should be implemented.

User Experience (UX):

- The mobile app interface should be user-friendly and responsive.

Maintenance:

- Regular maintenance is required to keep the application up-to-date and ensure the model's accuracy over time.
- Model updates and version control may be necessary.

Collaboration:

- Collaboration with dental professionals is essential to verify and validate the accuracy of the model's predictions.
- Feedback from users and professionals can be used for model improvement.

Conclusion:

The Dental Problem Deduction Android App provides an accessible and convenient platform for dental problem diagnosis using machine learning on Android devices. It also offers valuable information about preventive measures and oral hygiene practices, promoting early diagnosis, treatment, and overall dental health.