Our dataset focuses on dates and date trees from Medina, encompassing seven distinct types of dates. Each variety was photographed from eight different angles, with the goal of constructing a 3D model for each type of date. Similarly, images of trees were captured from various perspectives to facilitate the creation of 3D models for the date trees as well. Both steps were to facilitate future endeavours in creating a Virtual Reality Arboretum which showcases Medina Dates and Trees to the tourists of Medina from all the around the world.

**Data Collection Methodology:**

The data collection process involved both purchasing specific types of dates and visiting farms to document the corresponding trees. The selection of these date varieties was based on criteria relevant to our project goals, though the specifics of this rationale are relatively straightforward. We focused on the most in-demand dates (e.g., Sukkari, Ajwa, Safawi) while adding some other date types which are relevant to Medina Culture (e.g., Barhi and Hamra). On the other hand, for tree identification, we consulted with local farmers, who guided us in correctly associating each tree with its respective variety. Ensuring accuracy in this phase was critical, so we cross-verified the information with farmers before proceeding with the photographic documentation.

**Labelling Process:**

To maintain clarity and consistency in labelling, we employed a systematic naming convention. Each variety of date was assigned a specific letter (e.g., "K" for Sukkari and "J" for Ajwa), and an additional letter indicated whether the image was of a date ("D") or a tree ("T"). Each team member had a unique identification number, which was included in the labeling structure. For instance, the label "JD1001" represents the first ajwa date photographed by specific team member, and “JD1002” is the second ajwa date taken by the same team member. For further details please check the tables below. This structured labelling approach not only streamlined the organization of images and helped ensure traceability throughout the project but also allowed us to track how many pictures of dates and trees were taken by each member of our team.

|  |  |
| --- | --- |
| Sukkari | K |
| Ajwa | J |
| Safawi | W |
| Saqi | Q |
| Barhi | B |
| Amber | A |
| Hamra | H |

|  |  |
| --- | --- |
| **Aboubakar Waziri** | **1** |
| **Mohammed Sattar** | **2** |
| **Youssef ElNahas** | **3** |
| **Hamza AlKaf** | **4** |
| **Ahmad AlSulimani** | **5** |

**Preprocessing:**

The preprocessing phase was relatively straightforward, involving the renaming of files to fit within the established labelling framework. This step ensured uniformity and prepared the dataset for later stages of analysis and 3D modelling.

**Tools and Challenges:**

We used smartphones to capture all images, leveraging their portability and high-quality cameras. The primary challenge encountered during the data collection phase was obtaining permission from farmers to photograph their date trees. Securing access to farms required extensive negotiation and building trust with local farmers, many of whom were initially hesitant to allow such documentation. However, through persistent efforts and transparent communication about the project's goals, we were able to gather the necessary data.

In summary, the dataset was carefully curated through a combination of fieldwork and strategic planning, with attention to detail in labelling and preprocessing. Despite the challenges faced, particularly in gaining access to farms, the result is a comprehensive and well-organized dataset poised for further analysis and 3D modelling efforts.