DENTAL RECORDS – DESIGN

1. Welcome user
   1.1. Display welcome message
2. Get data
   2.1. Get family size
   2.2. Record family teeth data
      2.2.1. Get family members
         2.2.1.1. Get upper teeth string
            2.2.1.1.1. Check invalid teeth input
            2.2.1.1.2. Check invalid teeth length
         2.2.1.2. Get lower teeth string
            2.2.1.2.1. Check invalid teeth input
            2.2.1.2.2. Check invalid teeth length
3. Display menu
   3.1. Get user option
      3.1.1. Print family teeth data
      3.1.2. Extract tooth
         3.1.2.1. Get tooth location (family member)
         3.1.2.2. Get tooth row (tooth layer)
         3.1.2.3. Get tooth number
      3.1.3. Report family root canal indices
         3.1.3.1. Count teeth for each type
            3.1.3.1.1. Incisors
            3.1.3.1.2. Bicuspids
            3.1.3.1.3. Missing (teeth)
         3.1.3.2. Calculate canal indices: $Ix^2 + Bx - M$
            3.1.3.2.1. First root canal index $x = \frac{-b+\sqrt{b^2-4ac}}{2a}$
            3.1.3.2.2. Second root canal index $x = \frac{-b-\sqrt{b^2-4ac}}{2a}$
      3.1.4. Exit program
         3.1.4.1. Display exit message