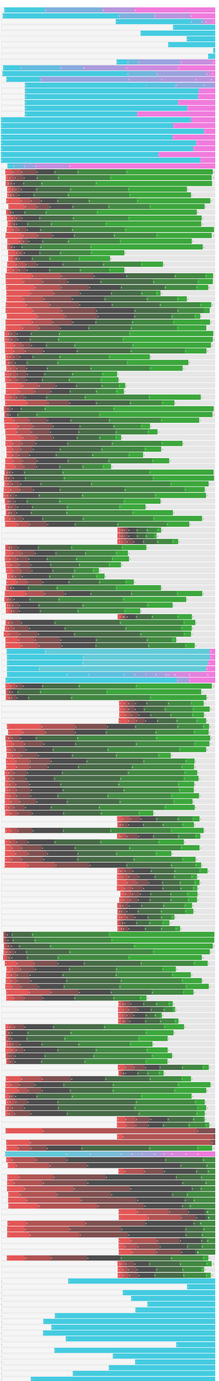Part I: raw data