PV-1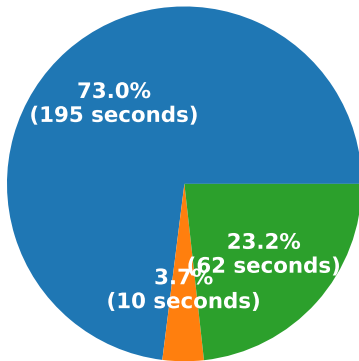_PI-1