

⇒ Project Plan

write : $\frac{5+4}{2} = 3.5 \approx 4$; $\frac{150}{4 \times 8} = \frac{46875}{1} \approx 4.7$

prep : $\frac{5+4}{2} = 4.5 \approx 5$; $\frac{150}{5 \times 8} = 3.75$

review : $\frac{5+8}{2} = 6.5 \approx 7$; $\frac{150}{7 \times 8} = 2.68$

rework : $\frac{4+6}{2} = 5$; $\frac{108}{5 \times 8} = \frac{2.7}{1} = 2.7$

Amt. of work

P1 : $\frac{22 \times 1000}{31} = 709.6 \approx 710$ } $\frac{710 + 734}{2} = 722 \Rightarrow 722 \times 0.15$

P2 : $\frac{99 \times 1000}{135} = 733.3 \approx 734$ } $= 108$

⇒ Software Dev

process : $\frac{82}{4 \times 8} = \frac{2.562}{1} \approx 2.6$

prep : $\frac{82}{5 \times 8} = 2.05$

review : $\frac{82}{8 \times 8} = 1.281$

rework : $\frac{91}{5 \times 8} = \frac{2.275}{1} = 2.275$

⇒ Requirements

write : $\frac{5+3}{2} = 4$; $\frac{210}{4 \times 8} = \frac{6.562}{3} = 2.187$

prep : $\frac{18+5}{2} = 11.5 \approx 12$; $\frac{210}{12 \times 8} = 2.187$

review : $\frac{28+8}{2} = 18$; $\frac{210}{18 \times 8} = 1.458$

rework : $\frac{10+5}{2} = 7.5 \approx 8$; $\frac{240}{8 \times 8} = \frac{3.75}{3} = 1.25$

Amount of work

$$\begin{aligned} P1: \frac{136 \times 1000}{112} &= 1215 \\ P2: \frac{413 \times 1000}{389} &= 1062 \end{aligned} \quad \left\{ \begin{aligned} \frac{1215 + 1062}{2} &= 1139 \times 0.21 \\ &= 240 \end{aligned} \right.$$

Build Dev.

$$\text{server: } \frac{12}{1} = \frac{12}{4} = 3$$

$$\text{clients: } \frac{21}{5} = \frac{4.2}{3} = 1.4$$

$$\text{Build: } \frac{12}{1 \times 8} = \frac{1.5}{1} = 1.5$$

$$\text{Test case: } \frac{5}{2} = \frac{2.5}{2} = 1.25$$

$$\text{Simulation: } \frac{8}{2} = \frac{4}{2} = 2$$

Analysis

$$\text{write: } 5; \frac{172}{5 \times 8} = \frac{4.3}{2} = 2.15$$

$$\text{prep: } 4; \frac{172}{4 \times 8} = 5.375$$

$$\text{review: } 9; \frac{172}{9 \times 8} = 2.388$$

$$\text{rework: } 6; \frac{321}{6 \times 8} = 6.687 \approx \frac{6.7}{2} = 3.35$$

Amount of work

$$\frac{123 \times 1000}{66} = 1863 \times 0.172 = 321$$

Design

$$\text{write: } \frac{5+4}{2} = 4.5 \approx 5; \frac{220}{5 \times 8} = \frac{5.5}{2} = 2.75$$

$$\text{Prep: } \frac{4+5}{2} = 4.5 \approx 5; \frac{220}{5 \times 8} = 5.5$$

$$\text{review: } \frac{8+8}{2} = 8 \approx 8; \frac{220}{8 \times 8} = 3.05$$

$$\text{rework: } \frac{6+8}{2} = 6.8; \frac{522}{6 \times 8} = \frac{109.5}{6} = 18.25$$

$$\text{Amount of work: } \frac{296}{6 \times 8} = \frac{6.17}{2} \approx 3.1$$

$$P1: \frac{188 \times 1000}{89} = 2113 \quad \left. \begin{array}{l} \\ \\ \end{array} \right\} \frac{2113 + 2176}{2} = 2143 \times 0.22 = 472$$

$$P2: \frac{509 \times 1000}{234} = 2176$$

$$\text{write: } \frac{0.25 + 1}{2} = 0.625 \approx 1; \frac{220}{2 \times 8} = \frac{27.5}{3} = 9.166$$

$$\text{prep: } \frac{4+4}{2} = 4; \frac{220}{4 \times 8} = 6.875$$

$$\text{review: } \frac{5+10}{2} = 7.5 \approx 8; \frac{220}{8 \times 8} = 3.437$$

$$\text{rework: } \frac{6+6}{2} = 6; \frac{692}{6 \times 8} = \frac{14.8}{3} = 4.933 \quad \frac{524}{6 \times 8} = \frac{10.916}{3} = 3.64$$

Amount of work

$$P1: \frac{88 \times 1000}{28} = 3143 \quad \left. \begin{array}{l} \\ \\ \end{array} \right\} \frac{3143 + 6097}{2} = 4620 \quad 0.064 \times 296 = 19.0$$

$$P2: \frac{378 \times 1000}{62} = 6097$$

$$DM P1: \frac{28 \times 1000}{89} \approx 315$$

$$M P2: \frac{62 \times 1000}{234} \approx 265$$

$$\frac{315 + 265}{2} = 290 \times 0.22 = 64$$

Coding:

$$\text{write: } \frac{5+5}{2} = 5; \frac{3800}{5 \times 8} = \frac{95}{5} = 19$$

$$\text{prep/exe: } \frac{1.25}{2} = 0.625 \approx 1; \frac{335}{8} = 41.875 \approx 42; \frac{112}{4} = 28$$

$$\text{fix: } \frac{8+12}{2} = 10; \frac{266}{10} = \frac{26.6}{4} = 6.65$$

$$\text{test: } \frac{12+8}{2} = 10; \frac{266}{10} = \frac{26.6}{4} = 6.65$$

$$\text{prep: } \frac{113+90}{2} = 101.5 \approx 102; \frac{3800}{102 \times 8} = 4.66$$

$$\text{meeting: } \frac{189+135}{2} = 162; \frac{3800}{162 \times 8} = 2.932$$

$$\text{rework: } \frac{5+5}{2} = 5; \frac{334}{5 \times 8} = \frac{8.425}{5} = 1.685$$

Amount of work

~~PI~~

$$\begin{aligned} P1: \frac{256 \times 1000}{3800} &= 67.36 \approx 68 \\ P2: \frac{1045 \times 1000}{9725} &= 107.45 \approx 108 \end{aligned} \quad \left. \vphantom{\begin{aligned} P1: \\ P2: \end{aligned}} \right\} \frac{68+108}{2} = 88 \times 3.8 = 335$$

fix, test

$$\begin{aligned} P1: \frac{179 \times 1000}{3800} &= 47.105 \approx 48 \\ P2: \frac{902 \times 1000}{9725} &= 92.75 \approx 93 \end{aligned} \quad \left. \vphantom{\begin{aligned} P1: \\ P2: \end{aligned}} \right\} \frac{48+93}{2} = 70 \times 3.8 = 266$$

rework:

$$\begin{aligned} P1: \frac{188 \times 1000}{3800} &= 49.47 \approx 50 \\ P2: \frac{1230 \times 1000}{9725} &= 126.47 \approx 127 \end{aligned} \quad \left. \vphantom{\begin{aligned} P1: \\ P2: \end{aligned}} \right\} \frac{50+127}{2} = 88.5 \times 3.8 \approx 337$$

⇒ Testing:

$$\text{write: } \frac{205}{8} = \frac{25.625}{4} = 6.406$$

$$\text{prep: } \frac{205}{5 \times 8} = 5.125$$

$$\text{review: } \frac{205}{10 \times 8} = 2.562$$

$$\text{rework: } \frac{101}{4 \times 8} = \frac{3.156}{4} = 0.789$$

$$\text{execute: } \frac{194}{8} = \frac{24.25}{4} = 6.06$$

$$\text{fix: } \frac{113}{5} = \frac{22.6}{4} = 5.65$$

$$\text{test: } \frac{113}{10} = \frac{11.3}{4} = 2.825$$

Documentation 1

$$\text{User: } \frac{4+6}{2} = 5; \frac{177}{5 \times 8} = \frac{4.425}{2} = 2.212$$

$$\text{prep: } \frac{5+4}{2} = 4.5 \approx 5; \frac{177}{5 \times 8} = 4.425$$

$$\text{review: } \frac{7+7}{2} = 7; \frac{177}{7 \times 8} = \frac{2.5125}{1} = 2.5125 \approx 3.16$$

$$\text{rework: } \frac{6+9}{2} = 7.5; \frac{237}{8 \times 8} = \frac{2.9625}{2} = 1.48125 \approx 1.85$$

Amount of work

$$\begin{array}{l} \text{P1: } \frac{174 \times 1000}{134} \approx 1299 \\ \text{P2: } \frac{532 \times 1000}{389} \approx 1368 \end{array} \left. \vphantom{\begin{array}{l} \text{P1: } \frac{174 \times 1000}{134} \approx 1299 \\ \text{P2: } \frac{532 \times 1000}{389} \approx 1368 \end{array}} \right\} \begin{array}{l} \frac{1299 + 1368}{2} = 1334 \times 0.177 \\ = 237 \end{array}$$