**NOTE: USING THE VERSION FROM CONNECT!!!! (ATTACHED ON BACK)**

**Part 1:**

1. Productivity (function points/person-day) shares and almost 100% correlation with the **language used**. As shown when graphing the two parameters against each other:
2. As shown by the table below:

|  |  |  |
| --- | --- | --- |
| **Project** | **Lang** | **Function Points / Person Day** |
| 1 | A | 9.913333333 |
| 2 | A | 9.942117647 |
| 3 | B | 7.011851852 |
| 4 | B | 7.015403727 |
| 5 | C | 11.80272727 |
| 6 | C | 11.97428571 |
| 7 | B | 6.991623377 |
| 8 | C | 12.0816129 |

If we average these values:

|  |  |
| --- | --- |
| **Lang** | **Function Points / Person Day** |
| A | 9.92772549 |
| B | 7.006292985 |
| C | 11.9528753 |

1. With the knowledge that with language B, productivity is approximately 7 function points per person-day. We can calculate the approximate effort by dividing the approximate function points for projects X and Y by the productivity of language B.  
     
   Effort(X) = Function-Points(X) / Productivity(Language B)  
   Effort(X) = 261.8 / 7.006292985  
   **Effort(X) = 37.37 Person-Days**  
     
   Effort(Y) = Function-Points(Y) / Productivity(Language B)  
   Effort(Y) = 704.66 / 7.006292985  
   **Effort(Y) = 100.58 Person-Days**
2. Project X shares similar inputs, outputs, and entities to project 1, but differ only in the language used (A versus B) and slightly smaller inputs and outputs. So it is safe to assume that Project X will have a higher person-day number (as language B correlates as such). **So project X will take approximately 35 person-days.**Project Y shares similar inputs, outputs, and entities to project 3 but are slightly lower in all of them. They share a common language (language B), so it’s safe to assume that they will be very much alike, with Project Y being taking slightly less effort. **So project Y will take approximately 100 person-days.**
3. **No.** Language B has shown to have the lowest productivity (function-points/person-day). Language C would be the optimal choice.

**Part 2:**

1. **Path{T2,T8,T4,T3,T6,T5,T7}** on attached graph (only a critical path as some paths are interchangeable). Critical paths marked by red line on printout (not available on digital copy).
2. **24 Days**, as shown on the critical path of the graph
3. ES-LS = 14-8 = **6 Days**
4. **2 Employees:**  
   Possible Workflow:  
   Employee 1: T1 🡪 T2 🡪 T8 🡪 T7  
   Employee 2: T4 🡪 T3 🡪 T6 🡪 T5
5. This will add 6 days to the original T7, thus **adding 2 days** to the original estimate (therefore, will take **8 days**).

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Project** | **Inputs** | **Outputs** | **Entities** | **Users** | **Pages** | **Lang** | **Effort** | **Function Points** | **Function Points / Person Day** |
| 1 | 210 | 420 | 40 | 10 | 35 | A | 30 | 297.4 | 9.913333333 |
| 2 | 469 | 1406 | 125 | 20 | 10 | A | 85 | 845.08 | 9.942117647 |
| 3 | 513 | 1283 | 76 | 18 | 9 | B | 108 | 757.28 | 7.011851852 |
| 4 | 660 | 2310 | 88 | 200 | 75 | B | 161 | 1129.48 | 7.015403727 |
| 5 | 183 | 367 | 35 | 10 | 5 | C | 22 | 259.66 | 11.80272727 |
| 6 | 244 | 975 | 65 | 25 | 32 | C | 42 | 502.92 | 11.97428571 |
| 7 | 1600 | 3200 | 237 | 25 | 12 | B | 308 | 2153.42 | 6.991623377 |
| 8 | 582 | 874 | 111 | 5 | 3 | C | 62 | 749.06 | 12.0816129 |
| X | 180 | 350 | 40 | 20 |  | B? | 37.36640768 | 261.8 | 7.006292985 |
| Y | 484 | 1190 | 69 | 35 |  | B? | 100.5752973 | 704.66 | 7.006292985 |

|  |  |
| --- | --- |
| **Lang** | **Function Points / Person Day** |
| A | 9.92772549 |
| B | 7.006292985 |
| C | 11.9528753 |

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