

Estimation of Project Size using the function points analysis (FPA) - TraViz

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Total Unadjusted Function Points (TUFP):

Number of External Inputs (EIs) = 6

- Add Location to User History
- Remove Location from User History
- Make Profile (Name, Email, Password)
- Edit Profile
- Delete Profile
- Add Rate of Experience for Location

Number of External Outputs (EOs) = 7

- Generate Visualizations for locations
- Generate Visualizations - other information on locations
- Export Visualizations for locations
- Export Visualizations - other information on locations
- Generate Recommendations
- Summarize travel Information
- Print travel Information

Number of External Inquiries (EQs) = 4

- Browse Locations
- Display information related to locations
- List locations related to selected location
- Pick from List of locations

Number of Internal Logical Files (ILFs) = 3

- User History
- Locations information
- User Profiles

Number of External Interface Files (EIFs) = 0

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Information domains	Count	Weighting Factor			Total
		Simple	Average	Complex	
EIs	6	*3	*4	*6	18
EOs	7	*4	*5	*7	35
EQs	4	*3	*4	*6	12
ILFs	3	*7	*10	*15	28
EIFs	0	*5	*7	*10	0
Total Unadjusted Function Points (TUFP)					93

Total Processing Complexity (PC):

Complexity Weighting Factor	Brief Description	Value (0—5)
<i>Data communications</i>	How many communication facilities are there to aid in the transfer or exchange of information with the application or system?	2
<i>Heavily used configuration</i>	How heavily used is the current hardware platform where the application will be executed?	0
<i>Transaction rate</i>	How frequently are transactions executed daily, weekly, monthly, etc.?	2
<i>End-user efficiency</i>	Was the application designed for end-user efficiency?	3
<i>Complex processing</i>	Does the application have extensive logical or mathematical processing?	1
<i>Installation ease</i>	How difficult is conversion and installation?	1
<i>Multiple sites</i>	Was the application specifically designed, developed, and supported to be installed at multiple sites for multiple organizations?	2
<i>Performance</i>	Was response time or throughput required by the user?	1
<i>Distributed data processing</i>	How are distributed data and processing functions handled?	1
<i>Online data entry</i>	What percentage of the information is entered online?	4
<i>Online Updating</i>	How many ILF's are updated by On-Line transaction?	4
<i>Reusability</i>	Was the application developed to meet one or many user's needs?	4
<i>Operational ease</i>	How effective and/or automated are start-up, back-up, and recovery procedures?	3
<i>Extensibility (Facilitate change)</i>	Was the application specifically designed, developed, and supported to facilitate change?	2
Total Processing Complexity (PC):		30

Project Size Estimation

$$\begin{aligned}
 \text{Total Adjusted Function Points} &= (0.65 + (0.01 * \text{PC})) * \text{TUFP} \\
 &= (0.65 + (0.01 * 30)) * 93 \\
 &= 28.55
 \end{aligned}$$

Programming Languages - Javascript and Python (assuming 6:4 ratio of usage in the project)

Multiplicative Factors - Javascript (71.11), Python (53.33)

$$\begin{aligned}\text{LOC} &= (0.6 * 28.55 * 71.11) + (0.4 * 28.55 * 53.33) \\ &= 1218.1143 + 609.0286 \\ &= 1827.1429 \\ &\sim \mathbf{1827 \text{ lines of code}}\end{aligned}$$