

# Smalltalk Resume Addendum

This is a summary of Mr. Joseph Ellsworth's Experience in Smalltalk. Additional addendums are available with information on other areas of expertise. A 10 page detailed resume is also available.

Mr. Ellsworth is a Digitalk customer. He currently owns a the digitalk versions of Smalltalk for Windows, 32 Bit Windows and DOS/286. He has also worked with the Parplace product running on a Sun Workstation.

Mr. Ellsworth has developed a diverse range of experience during the time he has worked as a independent private consultant. He has typically worked on 3 clients projects simultaneously with the average project lasting 2 months and several lasing multiple years.

Smalltalk is one of the first truly object oriented language environments and as such it is important for a person using the language to have a object oriented approach to design and analysis. This area is one of Mr. Ellsworth's strengths. He has done extensive study and implementation of object oriented analysis and it's associated design. He is intimately familiar with Coad / Yordan approach and has familiarity with the work of Mellner.

Mr. Ellsworth's latest exposure to Smalltalk is with Digitalk's V/Win and V/Win32 packages. Mr. Ellsworth has used the V/Win product to implement a RPG to C++ language translation tool. This project involves this product was conceived and designed by Mr. Ellsworth to allow customers with RPG code executing on a IBM System 36, 38 and AS/400 mini computers to convert that code so it can be compiled and executed on computers with a C++ 3.0 compatible compiler.

The translator itself is implemented in Smalltalk. It represents about a 3,000 hour investment from 3rd Qtr 1990 through 1st Qtr 1993. He learned an extensive amount about parsing and code generation in this phase of the project.

This project requires a complex model of the RPG / AS/400 environment. Smalltalk provided the memory management and built in collections to make building this model possible. Mr. Ellsworth has extended functionality of many base classes and created many descendant types of Collections classes such as Dictionaries.

The input phase of this project requires heavy duty parsing of multiple nested input files. Mr. Ellsworth extended Smalltalk's excellent file & string manipulation classes and with concepts such as reversible file streams, look ahead file streams and automatic mapping of special character sets as well as extensive piecing, token manipulation & replacement and savable collections.

The code generation portion of this project makes heavy use of a extended polymorphic collection mechanism where each of the source language opcodes was created as a descendant type of OpCodes and stored in a dynamic indexable collection for pre-processing. Each of these opcodes knows how to write the C++ code to implement it's functionality. When building the collection of opcodes the RPG source opcode is looked up in another dictionary and a instance of the type cross referenced in the dictionary is instantiated for the code

generation collection. This approach actually allows the output portion of the translator to be modified for output in other language formats.

Mr. Ellsworth's previous Smalltalk exposure was on a contract with Norther Telecom during the Winter of 1992-1993. This project was a distributed DMS-100 telephone switch monitoring application. During this project Mr. Ellsworth was used as roaming Object Oriented Guru. He was responsible for training and assisting the team members responsible for the GUI portion of this project in the advanced use of Smalltalk. His expertise in the use of polymorphic collections and string manipulation was particularly valuable during this project. He also assisted in the use and implementation of Graphical User Interfaces using the Parplace visual toolkit and tools. Mr. Ellsworth also worked extensively in C++ which involved reverse engineering a object model for a DMS- DTOCS (DMS Table TO Object Conversion System) and then enhance this model with substantial functional and architectural improvements. The new model was to be the basis for a new implementation of the DTOCS system.

During 1991 Mr. Ellsworth began using Actor by Whitewater. Actor was used when customers began asking for windows application but did not want to pay the cost of C++ implementation. Mr. Ellsworth use of Actor accelerated when Whitewater introduced their database access kit which allows transparent access to DBASE & Paradox files and a variety of SQL engines. The applications Mr. Ellsworth has created with Actor are user interface programs such as a Sales Lead Tracking System.

Mr. Ellsworth's first exposure to Smalltalk was in 1986 with Smalltalk-80 produced by Digitalk. He used this package mainly for experimental graphics programming. He used it to teach a couple of hospital personnel the fundamentals of programming. He Never used smalltalk-90 in a extensive application because of memory limitation and a lack of a good ISAM library. His next exposure to Smalltalk was with Smalltalk/V 286 also by Digitalk. This package fixed a lot of the limitations of the earlier product such as a improved memory manager and better speed. He used this package mainly in textual parsing work. In particular he implemented the original parsing logic of the C++ to RPG translator in this package prior to acquiring the V/Win product. He also used this version on a contract where he was reading mainframe data sets from a hierarchial database, parsing them out and converting them in to a relational form which was converted into SQL create table and insert statements which where stored in text files for submission to Novell's XQL via a batch processor which he had also designed and implemented. His last use of this package was to implement a data dictionary driven report query system which wrote Informix ACE scripts for submission to Informix or Integra.

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