APPENDIX – A

SOFTWARE APPLICATION TOOL (SAT)
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Welcome to our Software Application Tool (SAT). This tool helps to enhance the efficiency of project management in an IT company with the estimation of cost and effort. Here is our home screen 1 - which presents the layout of our application.

Figure SAT. 1 Home Screen - 1
Home Screen 2 – our Application facilitates the estimation of cost and effort with simple and minimal input parameters in an easy and effortless method.

**Figure SAT. 2** Home Screen - 2
Home Screen 3 – This screen is again one of our home screen which depicts the various estimation techniques which are widely used in the industry.

Figure SAT. 3 Home Screen - 3
This is our cost and effort estimation home screen. We can reach here by clicking on the services tab in the home page.

This provides a brief introduction to the software development cost and effort estimation and its importance.

Figure SAT. 4  Home Screen for Cost and Effort Estimation
Estimation of cost and effort for New projects - for each technology and for portfolio of projects. Technology-wise cost and effort estimation is done with the input parameters technology and size of the code. We arrive at this screen by clicking on the cost and effort estimation tab.

![Software Estimation](image)

**Figure SAT. 5** Estimation for Technology-Wise
Cost and effort estimation for the portfolio of projects is done with size of the code and the technology as the inputs. A simple click on the button technology or portfolio of projects enables to arrive at the estimation for the required scenario of the two mentioned.

**Figure SAT. 6** Estimation for Portfolio of Project
Estimation of cost and effort for enhancement projects - Application development projects, Web/database development projects and for each technology is done in this stage.

Figure SAT. 7 Estimation for Enhancement Project
An instance for estimation of Application development projects is provided with the input parameters added, modified, reused and deleted.

**Figure SAT. 8** Estimation for Application Development
An instance for web/database development projects is presented with the parameters size of the code added, modified, reused and deleted inputted randomly.

**Figure SAT. 9** Estimation for Web/Database Development
Estimation for technology-wise projects is displayed. Input parameters are the technology which is available and this should be selected from the drop down list. The other inputs required are size of the code added, modified, reused and deleted.

**Figure SAT. 10** Estimation for Technology-Wise - Enhancement Project
Example for the technology wise cost and effort estimation for “C”.

Figure SAT. 11 Estimation for Technology “C” – Enhancement project
Once the effort estimation is done, the project details are added or updated to further monitoring the project status so that required action can be taken at the required time by the management.

**Figure SAT. 12**  Add or update for New/Enhancement Project
Current project status should be updated as shown below

**Figure** SAT. 13 Status Update
Project progress status is presented in this stage once the project information is updated as in the previous screenshot.

Figure SAT. 14 Project Status
Project-wise status report provides a colour coded status of the project.

**Figure** SAT. 15  Project-Wise Status Report
Continuation of previous screen – The colour code **GREEN** indicates that the project is in right path. **Yellow** indicates that though the project performs as expected there are still areas where the performance can be improved to make the project in right path. **Red** throws an alert that the project is not moving as expected and acts as an indicator for immediate corrective action.

**Figure** SAT. 16  Project-Wise Performance Tracking
Overall projects status report

**Figure** SAT. 17  Overall Project Status Report
Continuation of previous screen

**Figure** SAT. 18  Overall Project Performance Tracking
References for Software development cost and effort estimation


Figure SAT. 19 References for Cost and Effort Estimation
APPENDIX – B

DESCRIPTION OF TECHNOLOGIES
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<table>
<thead>
<tr>
<th>TECHNOLOGIES</th>
<th>DESCRIPTION</th>
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<tbody>
<tr>
<td>ASP.NET</td>
<td>It was developed by Microsoft to allow programmers to build dynamic <strong>web sites</strong>, web applications and web services. It was first released in January 2002 with version 1.0 of <strong>the .NET Framework</strong>, and is the successor to Microsoft’s Active Server Pages (ASP) technology.</td>
</tr>
<tr>
<td>C</td>
<td>C provides constructs that map efficiently to typical machine instructions, and therefore it has found lasting use in applications that had formerly been coded in assembly language, including operating systems, as well as various application software for computers ranging from supercomputers to embedded systems.</td>
</tr>
<tr>
<td>C#</td>
<td>C Sharp is an elegant, simple, type-safe, object-oriented language that allows enterprise programmers to build a breadth of applications.</td>
</tr>
<tr>
<td>C++</td>
<td>C++ is a powerful general-purpose programming language. It can be used to create small programs or large applications. It can be used to make CGI scripts or console-only DOS programs.</td>
</tr>
<tr>
<td><strong>JAVA</strong></td>
<td>Java is a programming language expressly designed for use in the distributed environment of the Internet. It can be used to create complete applications that may run on a single computer or be distributed among servers and clients in a network. It can also be used to build a small application module or applet for use as part of a Web page.</td>
</tr>
<tr>
<td><strong>JCL</strong></td>
<td>Job control language (JCL) is a scripting language executed on an IBM mainframe operating system. It consists of control statements that designate a specific job for the operating system. It provides a means of communication between the application program, operating system and system hardware.</td>
</tr>
<tr>
<td><strong>JSP</strong></td>
<td>Java Server Pages (JSP) is a technology used to develop interactive Web pages. JSP was developed by Sun Microsystems and is an improved version of Java servlets.</td>
</tr>
<tr>
<td><strong>MS SQL</strong></td>
<td>Microsoft SQL or MS SQL is a computer application used to create desktop, enterprise, and web-based database applications. It is used at different levels and with various goals.</td>
</tr>
<tr>
<td><strong>Oracle SQL</strong></td>
<td>Oracle is a relational database technology developed by Oracle. It provides an easy, elegant, performant architecture for accessing, defining, and maintaining data.</td>
</tr>
<tr>
<td>XML/XLS</td>
<td>Extensible Markup Language (XML) is a markup language that defines a set of rules for encoding documents in a format which is both human-readable and machine-readable. XML is used in many aspects of web development, often to simplify data storage and sharing. XSL is a language for expressing style sheets. An XSL style sheet is, like with CSS, a file that describes how to display an XML document of a given type.</td>
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APPENDIX – C

JOURNAL PUBLICATIONS AND PAPER PRESENTATIONS
I. List of Journal Publications

B. International Journals


[Link]: http://research.ijcaonline.org/volume44/number9/pxc3878492.pdf


[Link]: http://research.ijcaonline.org/volume44/number10/pxc3878493.pdf


II. List of Paper Presentations

D. International Conference


E. National Conference
