



**Programmer/Developer - ITO**

**Occupational Family/Code – Science & Technology: SIT**

**Profile created: 2005 04**

**Profile updated: 2006 12**

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<b>Occupation Summary</b>	<b>Selection of Competencies</b>	<b>Knowledge</b>	<b>Skills</b>	<b>Personal Attributes</b>
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Programmer/Developers in the Information Technology Office are involved in designing, writing, testing and maintaining programs and software.

They translate project specifications, procedures and problem statements into computer programming languages. They test and debug programs; analyze; rewrite and revise programs; and document program development and revisions.

For some positions, employees may need to be available after hours to perform some of the duties.



## Knowledge

Knowledge is the baseline of information acquired through work and life experiences, learning situations and formal education which enables an individual to perform from an informed perspective.

### Acts/Regulations/ Legislation

- Knowledge of ministry programs standards, policies and expectations. **(Learn)**
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### Technical

- Knowledge of database concepts, theories and principles. **(Bring)**

*Specifically:*

- *Basic database (relational) concepts and objects: tables, columns, rows, stored procedures, referential integrity, normalization, indexing*
  - *Sql abilities: definition, construction and execution of ddl, definition, construction and execution of dml*
  - *Relational database management systems: Oracle, Microsoft Sql Server, Ibm DB2, Sybase Sql Anywhere, MySql, Postgresql, Ingres*
  - Knowledge of requirements analysis and solution design techniques. **(Learn)**
- Specifically:*
- *Software development methodologies: waterfall, unified process, Extreme programming*
  - Knowledge of networking architecture. **(Learn)**
  - Knowledge of operating systems. **(Learn)**
  - Knowledge of computer hardware and architecture. **(Learn)**



- Knowledge of programming concepts, techniques and languages. **(Bring)**

*Specifically:*

- *Database languages: PL/SQL; Transact Sql*
  - *Concepts of development architectures: mainframe; client/server; n-tier; Web*
  - *Concepts of OO programming: inheritance; encapsulation; polymorphism*
  - *Languages/tools: C; Visual Basic; Java; Powerbuilder; Vb .net, Oracle Forms*
  - *Web languages/technologies: At least some of the following: ASP; Java; Javascript; IIS, Apache; Tomcat, Asp .net, html*
- Knowledge of commercial software applications. **(Learn)**
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## Skills

Skills are those demonstrated abilities, or proficiencies, which one has learned from his/her past. These are acquired/developed from past work and life experience, including volunteer work, independent study, life events, community and leisure activities, and formal training.

Skills are demonstrable, measurable and are transferable from one situation to another.

## Communication

- Ability to write a variety of detailed, accurate and clear (technical) material such as user systems and requirements documentation and procedures, project plans, letters, requests for proposals, feasibility studies, recommendations and reports, at a level appropriate to the target groups. **(Learn)**

*Personal attributes which may link with this skill statement include: logical, concise, creative, thorough...*

- Ability to orally explain or present (technical) information to a wide variety of technical and non-technical individuals and/or groups in a clear, accurate and understandable manner. **(Bring – senior)**

*Personal attributes which may link with this skill statement Include: self-confident, concise, creative, welcoming...*

- Ability to actively listen, paraphrase and ask precise questions in order to clarify and understand information being received. **(Bring)**

*Personal attributes which may link with this skill statement include: diplomatic/tactful, patient, quick to learn...*

- Ability to demonstrate and promote the use and value of new technology, programs and services in a manner that creates understanding, captures interest and enhances users' computer skills. **(Bring – senior/Learn – junior)**

*Personal attributes which may link with this skill statement include: self-confident, concise, logical, creative...*

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### Leadership

- Ability to constructively lead, advise and encourage others to achieve success in their work and contribute to the effectiveness of the work team. **(Bring – senior)**

*Personal attributes which may link with this skill statement include: honest/accountable/disciplined, assertive, diplomatic/tactful...*

- Ability to assign work and evaluate employee performance taking into consideration priorities, workload and employees' skills. **(Learn – senior)**

*Personal attributes which may link with this skill statement include: organized, thorough, assertive, diplomatic/tactful, self-confident...*

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### Problem Solving

- Ability to independently interpret, comprehend and apply technical instructions and concepts to successfully acquire, install, modify, configure and maintain hardware and software components and administer networks. **(Learn)**

*Personal attributes which may link with this skill statement include: logical, thorough, adaptable/flexible...*

- Ability to diagnose technical problems such as delays, malfunctions and errors in order to determine the true cause of the problem and provide a (workable/reasonable/optimal) solution in a reasonable timeframe. **(Bring)**

*Personal attributes which may link with this skill statement include: creative, logical, thorough, organized...*

- Ability to extract, recall, synthesize, conceptualize and apply ideas, processes and information to incorporate new technology and create new solutions in a constantly changing technological and business environment.  
**(Bring – senior/Learn – junior)**

*Personal attributes which may link with this skill statement include: adaptable/flexible, self-confident, quick to learn...*



- Ability to identify and respond to issues and concerns of others who may be angry or frustrated to reach a mutual understanding. **(Learn)**

*Personal attributes which may link with this skill statement include: diplomatic/tactful, assertive, empathetic/sensitive, conciliatory...*

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### Interpersonal

- Ability to create an environment that recognizes, supports, respects and welcomes diversity of employees and clients. **(Learn)**

*Personal attributes which may link with this skill statement include: welcoming, objective, understanding...*

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### Team/Independence

- Ability to work independently and participate as a team member to meet the needs of clients and co-workers and to build productive, positive work relationships. **(Bring)**

*Personal attributes which may link with this skill statement include: adaptable/flexible, patient...*

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### Organizational

- Ability to independently prioritize and organize one's own workload to meet tight deadlines and successfully complete projects in a changing environment. **(Bring)**

*Personal attributes which may link with this skill statement include: organized, thorough...*

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### Analytical

- Ability to gather, understand and synthesize specialized information in a way that can be applied to meet the needs of the organization and within given constraints. **(Bring)**

*Personal attributes which may link with this skill statement include: organized, thorough...*



- Ability to identify, explore and evaluate options on data, processes and methodologies, information technology and potential systems design to make feasible recommendations. **(Learn – senior)**

*Personal attributes which may link with this skill statement include: logical, concise...*

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### Technical

- Ability to design new or adapt existing systems/applications taking into account design alternatives, business requirements, and cost, resource and time constraints. **(Bring)**

*Personal attributes which may link with this skill statement include: creative, logical, organized, thorough...*

- Ability to create and or modify a sequence of computer instructions in order to compile, link, build and test computer executables that meet design requirements within established guidelines. **(Bring)**

*Personal attributes which may link with this skill statement include: logical, creative, visionary, quick to learn, methodical...*

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## Personal Attributes

### (Bring)

Personal Attributes identify qualities of character, which a person must have to be an effective and successful performer in the job. They are the underlying characteristics, which are deep and enduring parts of an individual expressed most of the time. They are one's personal style or personal effectiveness, which can be described as feelings, attitudes, habits and traits. Each of these is demonstrated through one's behaviour.

The personal attributes are stated under the skill competencies for which they may be most critical.

### Personal attributes for Programmer/Developers include:

#### To Be...

- Honest/Accountable/  
Responsible/Disciplined
- Logical
- Learning oriented (quick  
to learn)
- Empathetic/sensitive
- Welcoming
- Visionary
- Thorough
- Concise
- Creative
- Assertive
- Conciliatory
- Objective
- Methodical
- Patient
- Respectful
- Self-confident
- Diplomatic/Tactful
- Organized
- Adaptable/Flexible
- Understanding

[Back to top](#)