**C++ Programming Notes**

**Hungarian Notation**

Hungarian notation is an identifier naming convention in computer programming, in which the name of a variable or function indicates its intention or kind, and in some dialects its type.

**Use in C++**

|  |  |  |
| --- | --- | --- |
| **Type** | **Prefix** | **Example** |
| Integer | n | nVal |
| Floating point | f | fVal |
| Double | d | dVal |
| Character | c | cVal |
| BYTE (unsigned character | uc | ucVal |
| bool | b | bFinished |
| String | s | sVal |
| AnsiString | as | asVal |
| WORD (unsigned short) | w | wVal |
| DWORD (unsigned long) | dw | dwVal |
| Array (of integer) | a | anVal |
| Pointer (to integer) | p | pnVal |

**Units**

If the value represents a unit, this is shown as a postfix.

|  |  |  |
| --- | --- | --- |
| **Unit** | **Postfix** | **Example** |
| Seconds | sec | nTime\_sec |
| Milliseconds | ms | nTime\_ms |
| Hours | h | nTime\_h |
| UTC Time | utc | Time\_utc |
| Local Time | loc | Time\_loc |
| Meter | m | dDistance\_m |
| Kilometer | km | dDistance\_km |
| Nautical miles | nm | dDistance\_nm |
| Position (Lat/Long) | LL | Pos\_LL |
| Degrees | deg | dAngle\_deg |
| Radians | rad | dAngle\_rad |

**Folder Structure**

Use *XE103SRC* as the root folder. Every program has its own folder within this root folder.

C:\XE103Src

CommonSrc

AIS Decoder

CoastRad4

Interface

NavAid

Utils

Program 1

Program 2

Program 3

**Useful Utilities**

|  |  |  |
| --- | --- | --- |
| File | Class | Description |
| JFile.cpp/h | JFile | Handles all file related operations |
| JTime.cpp/h | JTime | Encapsulates time functions |
| JAES.cpp/h | JAES | Implements AES encryption and decryption of data blocks or files |
| JCRC.cpp/h | RockCRC | Implement a CRC on blocks of data |
| JIniFile.cpp/h | JIniFile | Creates a file to store program user settings |
| JList.h | JList | Templates linked list |
| JCommaText.cpp/h | CommaText | Manipulate comma delimited text strings |
| JEdit.cpp/h | JEdit | Implement text and numeric entry edit boxes |
| JMath.cpp/h | MovingAverage | Implement moving average and statistics functions |
|  | Statistics | Implement statistics calculations |
| JMemFile.cpp/h | JMemFile | Implement chached file handling (very fast) |
| JTransform.cpp/h | LatLong | Position in latitude/Longitude coordinates |
| Polar | Position in polar coordinates |
| XYPos | Position in rectangular coordinates |
| Transform | Implement coordinate transforms between LatLong, Polar and XYPos |
| JUtils.cpp/h | various | Implements functions to enable file/folder/system operations, |

**Pre-Defined Dialogs**

|  |  |  |  |
| --- | --- | --- | --- |
| **File** | **Class** | **Shortcut Function** | **Description** |
| JAutoStartDialog.cpp/h | TAutoStartForm | bAutoStart() | Implement auto start bar |
| JColorDialog.cpp/h | TColorForm | SelectColor() | Select Colour |
| JFileDlg.cpp/h | TJFileForm | sSelectOpenFile  sSelectSaveFile | Select a file name to open or save files |
| JFontDlg.cpp/h | TFontForm | SelectFont | Select font |
| JHelpAboutDlg.cpp/h | TJHelpAboutForm | ShowHelpAbout | Display help about dilaog |
| JInfoDlg.cpp/h | TJInfoForm | ShowInfo (in JUtils.h) | Display info in window |
| LJSplashIMT | TSplashForm | ShowIMTSplash | Display the IMT splash screen |