A2

August 21, 2022

[1]:
```
import pandas as pd
import numpy as np
import nltk
import re
from sklearn.feature_extraction.text import TfidfVectorizer
from sklearn.metrics.pairwise import cosine_similarity
from sklearn.metrics.pairwise import euclidean_distances
```

[2]:
```
path='~/Desktop/Research Associate Assignment/Research-Aptitude-Test-Data/
  ↪Q2_Dataset.xlsx'
df = pd.read_excel(path, dtype={'patentkey': int, 'text': str})
```

[3]:
```
print(df.info())
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 100 entries, 0 to 99
Data columns (total 2 columns):
 #   Column     Non-Null Count  Dtype
---  ------     --------------  -----
 0   patentkey  100 non-null    int64
 1   text       100 non-null    object
dtypes: int64(1), object(1)
memory usage: 1.7+ KB
None
```

[4]:
```
print(df.text.head())
```

```
0    Compressing and decompressing text files  A me…
1    Method and operating system for executing prog…
2    Compressing and decompressing text files  A me…
3    Method of debugging a computer program  A meth…
4    Method of resetting sequence of access to exte…
Name: text, dtype: object
```

[5]:
```
tokenizer = nltk.RegexpTokenizer(r"\w+")
df['tokenized_text'] = df.apply(lambda row: tokenizer.tokenize(row['text']),␣
  ↪axis=1)
df['num_words'] = df.apply(lambda row: len(row['tokenized_text']), axis=1)
print(df.head())
```

```
   patentkey                                                text  \
0    4955066  Compressing and decompressing text files  A me…
1    5027273  Method and operating system for executing prog…
2    5109433  Compressing and decompressing text files  A me…
3    5124989  Method of debugging a computer program  A meth…
4    5125087  Method of resetting sequence of access to exte…

                                      tokenized_text  num_words
0  [Compressing, and, decompressing, text, files,…         190
1  [Method, and, operating, system, for, executin…         188
2  [Compressing, and, decompressing, text, files,…         190
3  [Method, of, debugging, a, computer, program, …         206
4  [Method, of, resetting, sequence, of, access, …         230
```

[6]:
```
df['friqDist'] = df.apply(lambda row: nltk.FreqDist(w.lower() for w in␣
 ↪row['tokenized_text']), axis=1)
print(df.head())
```

```
   patentkey                                                text  \
0    4955066  Compressing and decompressing text files  A me…
1    5027273  Method and operating system for executing prog…
2    5109433  Compressing and decompressing text files  A me…
3    5124989  Method of debugging a computer program  A meth…
4    5125087  Method of resetting sequence of access to exte…

                                      tokenized_text  num_words  \
0  [Compressing, and, decompressing, text, files,…         190
1  [Method, and, operating, system, for, executin…         188
2  [Compressing, and, decompressing, text, files,…         190
3  [Method, of, debugging, a, computer, program, …         206
4  [Method, of, resetting, sequence, of, access, …         230

                                             friqDist
0  {'compressing': 3, 'and': 3, 'decompressing': …
1  {'method': 1, 'and': 5, 'operating': 4, 'syste…
2  {'compressing': 3, 'and': 3, 'decompressing': …
3  {'method': 2, 'of': 4, 'debugging': 1, 'a': 6,…
4  {'method': 6, 'of': 13, 'resetting': 1, 'seque…
```

[7]:
```
nltk.download('stopwords') ##Run for first time download
stopwords = nltk.corpus.stopwords.words('english')
```

```
[nltk_data] Downloading package stopwords to
[nltk_data]     /Users/anahita.khanna/nltk_data…
[nltk_data]   Package stopwords is already up-to-date!
```

[8]:
```
df['friqExceptStopDist'] = df.apply(lambda row: nltk.FreqDist(w.lower() for w␣
 ↪in row['tokenized_text'] if w.lower() not in stopwords), axis=1)
```

[9]:
```
print(df.head())
```

```
   patentkey                                                text  \
0    4955066  Compressing and decompressing text files  A me…
1    5027273  Method and operating system for executing prog…
2    5109433  Compressing and decompressing text files  A me…
3    5124989  Method of debugging a computer program  A meth…
4    5125087  Method of resetting sequence of access to exte…

                                      tokenized_text  num_words  \
0  [Compressing, and, decompressing, text, files,…         190
1  [Method, and, operating, system, for, executin…         188
2  [Compressing, and, decompressing, text, files,…         190
3  [Method, of, debugging, a, computer, program, …         206
4  [Method, of, resetting, sequence, of, access, …         230

                                            friqDist  \
0  {'compressing': 3, 'and': 3, 'decompressing': …
1  {'method': 1, 'and': 5, 'operating': 4, 'syste…
2  {'compressing': 3, 'and': 3, 'decompressing': …
3  {'method': 2, 'of': 4, 'debugging': 1, 'a': 6,…
4  {'method': 6, 'of': 13, 'resetting': 1, 'seque…

                                  friqExceptStopDist
0  {'compressing': 3, 'decompressing': 2, 'text':…
1  {'method': 1, 'operating': 4, 'system': 4, 'ex…
2  {'compressing': 3, 'decompressing': 2, 'text':…
3  {'method': 2, 'debugging': 1, 'computer': 1, '…
4  {'method': 6, 'resetting': 1, 'sequence': 1, '…
```

[10]:
```
df['most_common'] = df.apply(lambda row: row['friqExceptStopDist'].
 ↪most_common(10), axis=1)
print(df['most_common'].head())
```

```
0    [(text, 13), (compressed, 8), (pass, 7), (comp…
1    [(mode, 9), (multi, 5), (operating, 4), (syste…
2    [(text, 13), (compressed, 8), (pass, 7), (comp…
3    [(debug, 12), (program, 9), (commands, 8), (ta…
4    [(segment, 8), (interrupt, 7), (code, 7), (met…
Name: most_common, dtype: object
```

[11]:
```
df['text_cleaned'] = df.text.apply(lambda x: " ".join(re.sub(r'[^a-zA-Z]','␣
 ↪',w).lower() for w in x.split() if re.sub(r'[^a-zA-Z]',' ',w).lower() not in␣
 ↪stopwords) )
```

[12]:
```
tfidfvectoriser = TfidfVectorizer()
tfidfvectoriser.fit(df.text_cleaned)
tfidf_vectors = tfidfvectoriser.transform(df.text_cleaned)
```

[13]:
```
pairwise_similarities = np.dot(tfidf_vectors,tfidf_vectors.T).toarray()
pairwise_similarities_df = pd.DataFrame(pairwise_similarities)
pairwise_similarities_df.to_csv('~/Desktop/Research Associate Assignment/
 ↪A2_cosine_similarity_scores.csv', index_label='patentkey')
```

[14]:
```
def most_similar(patent_id, similarity_matrix, matrix):
    doc_id = df[df['patentkey'] == patent_id].index[0]
    print (f'Text: {df.iloc[doc_id]["text"]}')
    print ('\n')
    print ('Similar Text:')
    similar_ix = np.argsort(similarity_matrix[doc_id])[::-1]
    for ix in similar_ix:
        if ix == doc_id:
            continue
        print('\n')
        print (f'Patent Key: {df.iloc[ix]["patentkey"]}')
        print (f'Text: {df.iloc[ix]["text"]}')
        print (f'{matrix} : {similarity_matrix[doc_id][ix]}')
```

[16]:
```
most_similar(4955066, pairwise_similarities, 'Cosine Similarity')
```

```
Text: Compressing and decompressing text files  A method of compressing a text
file in digital form is disclosed. A full text file having characters formed
into phrases is provided by an author. The characters are digitally represented
by bytes. A first pass compression is sequentially followed by a second pass
compression of the text which has previously been compressed. A third or fourth
level compression is serially performed on the previously compressed text. For
example, in a first pass, the text is run-length compressed. In a second pass,
the compressed text is further compressed with key phrase compression. In a
third pass, the compressed text is further compressed with Huffman compression.
The compressed text is stored in a text file having a Huffman decode tree, a key
phrase table, and a topic index. The data is decompressed in a single pass and
provided one line at a time as an output. Sequential compressing of the text
minimizes the storage space required for the file. Decompressing of the text is
performed in a single pass. As a complete line is decompressed, it is output
rapidly, providing full text to a user.


Similar Text:


Patent Key: 5109433
Text: Compressing and decompressing text files  A method of compressing a text
file in digital form is disclosed. A full text file having characters formed
into phrases is provided by an author. The characters are digitally represented
by bytes. A first pass compression is sequentially followed by a second pass
compression of the text which has previously been compressed. A third or fourth
level compression is serially performed on the previously compressed text. For
```

example, in a first pass, the text is run-length compressed. In a second pass, the compressed text is further compressed with key phrase compression. In a third pass, the compressed text is further compressed with Huffman compression. The compressed text is stored in a text file having a Huffman decode tree, a key phrase table, and a topic index. The data is decompressed in a single pass and provided one line at a time as an output. Sequential compressing of the text minimizes the storage space required for the file. Decompressing of the text is performed in a single pass. As a complete line is decompressed, it is output rapidly, providing full text to a user.
Cosine Similarity : 0.9999999999999994

Patent Key: 5437036
Text: Text checking application programming interface An application programming interface for providing functionality between an program and a text checking engine that test words from the program for correctness. A preferred embodiment of the interface includes an input buffer communicating with the program to receive text from the program. An input buffer pointer is provided for addressing the text in the input buffer. The input buffer pointer is passed to the text checking engine, which preferably is part of the API. The text checking engine performs a text checking function requested by the program and provides information responsive to the requested function. A return buffer communicates with the text checking engine to receive the responsive information from the engine. The return buffer also communicates with the program to allow the program to retrieve the responsive information from the return buffer. Preferably, a clean bit is attached to each section of text checked if no errors are found in the section of text by the engine.
Cosine Similarity : 0.2998350459700204

Patent Key: 5412807
Text: System and method for text searching using an n-ary search tree A system and method for searching a text file for the occurrence of user-selected text portions that satisfy user-specified conditions. The user-specified conditions are in the form of logical operator terms that interrelate user-selected word terms. The system uses a full text index describing the location of all word terms within a text file. The system accepts the user-selected word terms and the user-specified conditions and constructs an n-ary search tree where terminal nodes represent the user-selected text portions and the non-terminal nodes represent logical operator terms that interrelate the word terms. The system uses the full text index to construct index lists for each of the word terms and has an index pointer for each of the index lists. A Boolean evaluator analyzes each of the non-terminal nodes to determine if word terms represented by adjacent terminal nodes satisfies the logical operation term represented by the non-terminal nodes. The system determines which of the index pointers will be incremented by analyzing the location within the text file of the current occurrences of the words represented by terminal nodes and the next occurrences within the text file of the words represented by terminal nodes. Positive

results of the non-terminal node analysis are temporarily saved and passed up the tree to the adjacent non-terminal node. When analysis of a non-terminal node is complete, the system will discard any index lists that have already been used in the completed non-terminal node analysis. The system and method require only a single pass through the full text index and do not require the use of intermediate files as are typical of a binary search tree. The system is easily implemented on a microcomputer with limited memory.
Cosine Similarity : 0.2648753231680994

Patent Key: 5537628
Text: Method for handling different code pages in text A method and word processing system for handling text pasted into a document that uses a foreign character set or code page. The code page used by text pasted into a document is preserved when that is displayed and edited. The word processing system keeps track of the appropriate code page for each run of text in the document using a piece table and a data block for the file(s) in which each piece of text is stored. Each document that is created has a piece table that includes an array of character positions and a corresponding array of data records. Each piece referenced in the array of character positions includes adjacent characters of text that are stored in a common file. When a file is opened to paste text into the document, the word processing system creates a file control block for that file, which includes a default code page identifier. The array of data records for each piece includes a pointer to the file control block. For any run of text that uses a code page different than the default for the file, an exception block is created. By referencing the default code page and any exception block, the word processing system determines the appropriate code page to be applied when text is displayed and edited. Foreign code page characters are translated into the native code page characters in the display buffer, but references to the foreign code pages are preserved when the document is stored, so that the characters encoded using the foreign code page are not lost or changed in the document.
Cosine Similarity : 0.2598211226152995

Patent Key: 5579466
Text: Method and system for editing and formatting data in a dialog window A method and system for editing and formatting data in a dialog window is provided. In a preferred embodiment, a rich text edit control is provided to support a rich text edit field in a user dialog. Different behaviors can be specified for the rich text edit control such that a dialog author can enable or disable the formatting capability of the rich text edit field. A user can type directly into the rich text edit field and select and modify the formatting characteristics of entered data using the same techniques and mechanisms provided to enter data and to modify the formatting characteristics of the data in the underlying user document. Pop-up menus and shortcut keys are also available for modifying the formatting characteristics of data selected in the rich text edit field. The rich text edit control can accept data from another

window and can inherit its formatting characteristics in order to display the data the way the data will appear in the underlying document. In one embodiment, the rich text edit control is provided by the underlying word processing application program so as to utilize the same routines for editing and formatting data in a rich text edit field as within an underlying document.
Cosine Similarity : 0.21538904412449147

Patent Key: 5530794
Text: Method and system for handling text that includes paragraph delimiters of differing formats A method and word processing system for handling text pasted into a document that uses a paragraph delimiter different than that employed by the word processing system. A computer system (10) that is generally conventional in design executes a word processing program that efficiently handles text pasted into a word processing document, even though that text uses a paragraph delimiter different than the native paragraph delimiter of the word processing system. The document opened by the word processing system has a corresponding piece table that includes an array of character positions and an array of data records. Each piece of the piece table represents adjacent characters that stored together in a file, and each record or PCD in the array of data records corresponds to a different piece in the piece table. When a file is opened to select text that will be pasted into the word processing document, a corresponding entry is made in the piece table that includes pointers to a file control block (FCB) for the opened file. The FCB indicates the type of paragraph delimiter used for that text. Thus, the word processing system tracks the appropriate paragraph delimiter used and translates any foreign paragraph delimiter to the native delimiter when displaying the text for editing. When the document is saved to a file, the paragraph delimiter associated with the text is translated to the native paragraph delimiter used by the word processing system.
Cosine Similarity : 0.19897795588749764

Patent Key: 5467134
Text: Method and system for compressing video data A method for compressing video movie data to a specified target size using intraframe and interframe compression schemes. In intraframe compression, a frame of the movie is compressed by comparing adjacent pixels within the same frame. In contrast, interframe compression compresses by comparing similarly situated pixels of adjacent frames. The method begins by compressing the first frame of the video movie using intraframe compression. The first stage of the intraframe compression process does not degrade the quality of the original data, e.g., the method uses run length encoding based on the pixels' color values to compress the video data. However, in circumstances where lossless compression is not sufficient, the method utilizes a threshold value, or tolerance, to achieve further compression. In these cases, if the color variance between pixels is less than or equal to the tolerance, the method will encode the two pixels using a single color value--otherwise, the method will encode the two pixels using different color values. The method increases or decreases the tolerance to

achieve compression within the target range. In cases where compression within the target range results in an image of unacceptable quality, the method will split the raw data in half and compress each portion of data separately. Frames after the first frame are generally compressed using a combination of intraframe and interframe compression. Additionally, the method periodically encodes frames using intraframe compression only in order to enhance random frame access.
Cosine Similarity : 0.17242146552067178

Patent Key: 5512921
Text: Visual display system having low energy data storage subsystem with date compression capabilities, and method for operating same A visual display system for use in computers includes a frame buffer for holding visual information data in a particular format for ready input to a visual display device. The system also includes a compressed frame buffer for storing the visual information data in a compressed format which can be rapidly decompressed in real-time and used in the visual display device. The data is compressed by a microprocessor during idle times and decompressed by a decompression circuit on the fly. In some circumstances, the power consumed by compressing and then repeatedly handling the compressed data is less than the power used to repeatedly handle the full uncompressed data set. The visual display system analyzes the visual information data and determines whether compression would help save energy. In the event that the handling of compressed data saves energy, the visual display system will use the compressed data set until the information is changed or updated. In this manner, the visual display system reduces power consumption which helps improve battery life in portable computers. A method for operating a visual display system using this energy saving compression technique is also described.
Cosine Similarity : 0.1469087953213037

Patent Key: 5521597
Text: Data compression for network transport Disclosed is a method and system for data compression. In a preferred embodiment, an input stream of data bytes are compressed into an encoded stream using an LZ77-based scheme. The preferred method searches for a matching sequence of already processed data bytes that is identical to a current sequence of bytes. Sequences of literals (bytes not forming part of a matching sequence) or match codes (encoded matching sequences) are identified by count values indicating the number of literals or match codes in the sequence. Preferably, the encoded stream is transmitted from a first computer to a second computer, where the encoded stream is decompressed. The method uses matching circular history buffers for compression and decompression, the history buffers being synchronized using a coherency byte included with each frame of encoded data transmitted. If an encoded frame is not received by the decompression device, the decompression device transmits a flush request to the compression device. The compression device flushes its history buffer in response to the flush request, the flushing step making the previously processed bytes stored in the history buffer incapable of becoming part of a matching sequence. The compression device includes in the coherency code of the next

encoded frame a control code indicating whether a flush request has been received by the compression device.
Cosine Similarity : 0.12589741209003297

Patent Key: 5504591
Text: System and method for compressing graphic images A system and method for compressing raster graphic or bit-map data reduces the storage requirements for the bit-map data. The system divides the bit-map data into one or more chaingons, which are a series of pixels that are contiguous in either the horizontal direction, the vertical direction, or diagonally. Each chaingon is defined by its starting location in the bit-map, and its length. Each chaingon is encoded separately using delta encoding with respect to the starting location of the chaingon. The delta encoding uses variable length data codes where the most common delta values are assigned the fewer data bits and the less common delta values are assigned more data bits. The delta encoded chaingons may be compressed to save additional storage space. The system may be readily used in any computer system where bit-map data files are stored or transmitted to a second computer. The invention is particularly useful in printers or facsimile machines where character fonts are transmitted along with text data. The character fonts may be processed using the present invention prior to transmission.
Cosine Similarity : 0.09890539041700445

Patent Key: 5572206
Text: Data compression method and system A method and system for compressing an input stream of data bytes into a compressed stream of data bytes using an LZ77-based compression scheme. The method and system also includes a decompressor for decompressing the compressed stream into a decompressed stream of data bytes that is identical to the input stream. The compression system encodes matches using token offsets rather than the byte offsets used by prior art LZ77-based compression schemes. The compression system uses knowledge of the internal format of the input stream to identify tokens that are used to determine the token offsets. Preferably, the method parses the input stream by dividing it into tokens and assigning a token type to each token. The method searches the input stream for a matching sequence of already processed tokens that is identical to a current sequence of tokens. If a matching sequence is found, the method determines whether the token type of a selected token, such as the first token, of the current sequence matches the token type of a corresponding token of the matching sequence. The method determines a token offset indicating the number of bytes of the matching token type occurring between the selected byte and the corresponding byte of the matching sequence. The method determines the length of the match and encodes the current sequence as a match pair that includes the token offset and the length of the match.
Cosine Similarity : 0.09693147479680427

Patent Key: 5497492
Text: System and method for loading an operating system through use of a fire system A method in a computer system for loading an operating system into memory through use of a file system that is stored on secondary storage. The operating system is stored on secondary storage as files with file names. Before the operating system is loaded into memory, a bootstrap program loads the file system from secondary storage into memory. The file system is stored at locations in secondary storage that are known to the bootstrap program. The file system also has a mapping of file names of operating system files to locations in secondary storage that contain the operating system files. After loading the file system, the bootstrap program requests the loaded file system to load the operating system files by specifying the file names of the operating system files to be loaded. In response to the request, the file system uses the mapping to retrieve the locations in secondary storage of the operating system files specified by the file names. The loaded file system then loads the operating system files into memory from the retrieved locations of secondary storage. Control can then be transferred to the operating system files.
Cosine Similarity : 0.07740996123809185

Patent Key: 5204960
Text: Incremental compiler A system and method of incrementally coupling a high level language into an object file is disclosed. A source file and an object file are organized into logical blocks. An intermediate file, termed an .mdt file, is generated and stores information about the logical blocks in both the source file and the object file and their relationship to each other. Boundaries are established in the source program to define logical blocks within it, each block being termed a function. Each function is further divided into a global region and a local region. If a change has been made in a particular local region in the source file, only that region is recompiled. The recompiled portion of the .obj file is patched into the .obj file to replace the previous material corresponding to that region. Significant time savings is realized by incrementally compiling the source program because only those local regions which have been changed are recompiled and they are patched into the existing .obj file.
Cosine Similarity : 0.06880866395309418

Patent Key: 5261051
Text: Method and system for open file caching in a networked computer system A method and means for improving the performance of distributed computer systems including a file server and a plurality of remote workstations. A system workstation issues a request from one of the remote workstations to open a batch file resident on the file server in a sharing mode. The request is automatically converted into a request to open the file in an OPlocked/OPbatched exclusive mode. The file server then determines whether the requested batch file has been opened by another workstation. The requested file is opened in an OPlocked/OPbatched exclusive mode if the requested file is not currently open,

wherein the batch file is copied to a workstation and executed locally while keeping the batch file open on the file server. The file is opened in a sharing mode if the requested batch file is currently open. The batch file is written to the file server and closed and the system reverts to a sharing mode if the batch file is opened in the OPlocked/OPbatched exclusive mode and the batch file is requested by another of the system workstations.
Cosine Similarity : 0.06691375905863164

Patent Key: 5363487
Text: Method and system for dynamic volume tracking in an installable file system A method and apparatus interfaces a computer operating system with a storage volume, which is all or part of a data storage media such as a removable floppy-type disk or a hard disk. In a preferred embodiment, the method and apparatus select and associate the appropriate one of a plurality of system drivers with a respective storage volume to permit data communication between the storage volume and the operating system. The method and apparatus permit a single operating system to access a storage medium formatted in accordance with differing file systems, without reprogramming or otherwise altering the operating system. Generally, the operating system identifies which of the plurality of file system drivers is appropriate for reading a particular storage volume and, thereafter, associates the identified file system driver with the particular storage volume. In operation, the operating system accesses the plurality of file system drivers, by providing a mount command, to allow each file system driver to execute a set of instructions to determine whether the accessed file system driver is capable of reading the storage volume. If a file system driver successfully reads the storage volume, it provides an indication to the operating system by providing a certain media signal. The operating system then responds to the certain media signal to associate the file system driver with the storage volume.
Cosine Similarity : 0.0585983126115321

Patent Key: 5586186
Text: Method and system for controlling unauthorized access to information distributed to users A system for controlling unauthorized access to information distributed to users and, more particularly, for controlling unauthorized access to software distributed to users is provided. One method utilizing the system of the present invention enables the software to be encrypted using a single encryption key and to be decrypted using a multiplicity of "decryption" keys, each of which is unique to a particular user. The "decryption" keys are the products of numeric representations of identifying information relating to users and unique user keys generated using the numeric representations and a "true" decryption key. Since each user receives a unique user key and both the numeric representation and the user key are generated using the identifying information, if the user reveals the numeric representation and the user key (or the product of the numeric representation and the user key), the numeric representation and the user key can be traced to the user who revealed them. Another method

utilizing the system of the present invention introduces randomness or pseudo-randomness into the decryption scheme to provide an additional level of security to the scheme.
Cosine Similarity : 0.055394785943311056

Patent Key: 5504889
Text: Method and system for monitoring file attributes using bitmaps to determine group membership of files and to determine which files have been processed A method and system for monitoring attributes of files, such as whether a file has been read, in a computer system includes a file index organized into groups, with at least one group including one or more files. The computer system also includes a number of bitmaps. A group bitmap is maintained for each group of the file index, with each group bitmap specifying the files included within the group. A user bitmap is maintained for each user of the computer system and specifies the files in the file index that have been read by the user. When the user of the computer system enters a request to determine which files within a selected group have been examined and which remain unexamined, the preferred embodiment performs a logical AND operation on the group bitmap for the selected group and the user bitmap for the user to produce a result bitmap. The computer system determines the answers to the user's request based on the contents of the result bitmap.
Cosine Similarity : 0.054745263412551454

Patent Key: 5471563
Text: System and method for automatic resolution reduction A resource oriented host computer-printer system in which the host computer and printer share information and data processing duties. A system and method for analyzing the execution times for draw primitives allows the host computer to determine whether the printer will be able to render draw primitives in real-time. A resource assembler calculates the cost of executing each draw primitive within a band to determine if the printer can render the draw primitive in real-time. If the band is too complex for the printer to render in real-time, the printer may pre-render the band or the host computer will render the band and transmit the bit-map of that band to the printer. The host computer makes a series of decisions as to the best form for transferring data from the host computer to the printer. If the printer cannot store the bit-map data file, the bit-map data file is compressed. If the printer cannot store the compressed bit-map data file, the host computer will reduce resolution in two stages, if necessary, until the printer can store the reduced resolution bit-map data file. The second stage of resolution reduction is guaranteed to fit within the printer. The host computer displays a message advising the user that the resolution has been reduced.
Cosine Similarity : 0.05432655057003885

Patent Key: 5495566

Text: Scrolling contents of a window An improved method and system is provided for scrolling contents of a window. In accordance with a first aspect of the present invention, variable speed scrolling is provided when scrolling beyond a screen boundary. In accordance with the first aspect of the present invention, the variable speed is proportional to the acceleration of the mouse cursor. In accordance with a second aspect of the present invention, variable speed scrolling is provided when scrolling beyond a screen boundary. The variable speed of the second aspect of the present invention is inversely proportional to a number of times that scrolling has been initiated. In accordance with a third aspect of the present invention, an improved method and system for scrolling in response to navigation key input is provided. In accordance with the third aspect of the present invention, a scrolling mode is selected after examining navigation key input. When the navigation key input comprises more than a predefined number of keys with each key being received within a predefined period of time, the third aspect of the present invention performs jump to scrolling. If there are less than the predefined number of keys or the keys are not within the predefined time period, the third aspect of the present invention performs animated scrolling.
Cosine Similarity : 0.04781524673916193

Patent Key: 5381521
Text: System and method of rendering curves A system and method of rendering a curve using data look-up tables for rasterizing the curve. The curve is subdivided so that it is approximated by a series of straight line segments of approximately equal length, with no line segment exceeds two pixels in length. The system subdivides any line segment that crosses horizontal axis of two adjacent horizontal scan rows. If the line segment does not cross the horizontal axis of a scan row, the pixel does not require detailed analysis. If the line segment does cross the horizontal axis of a particular horizontal scan row, the system uses look-up tables to determine the distance from the center point of the pixel in which the line segment crosses the horizontal axis to the point at which the line segment crosses the horizontal axis. The system uses three indices as pointers to the data look-up table containing the desired data. The three indices are themselves pointers to separate index tables in which the multiplication calculations required for the data look-up table have been precalculated and are incorporated into the values stored in the index tables. The index tables also incorporate a reduction in resolution from 1/64 to 1/8 pixel resolution. The index tables are also nonlinear to allow more data entries in areas where the round off error resulting from the resolution reduction are greatest. If the line segment crosses the horizontal axis to the left of the center of a pixel, the logic state for the pixel is changed. The system can be implemented on any computer and operates with any raster scan graphics display unit.
Cosine Similarity : 0.0470904853379069

Patent Key: 5455577

Text: Method and system for data compression A method and system for compressing a stream of bytes in a compression system. The compression system has a search data structure containing slots for identifying the position of occurrences of byte sequences in an input stream. A byte sequence is retrieved from the input stream. The method then determines whether the search data structure contains a slot identifying the position of a byte sequence that matches the retrieved byte sequence. If the search data structure contains a slot which identifies a matching byte sequence, then the contents of a search data structure slot containing the match is replaced with the position of the retrieved byte sequence. If the search data structure does not contain a slot identifying a matching byte sequence, then a slot is selected using a least recently updated slot algorithm. The contents of this least recently updated slot are then replaced with the position of the retrieved byte sequence. When a matching byte sequence is determined, an indicator of the position identified in the slot before replacement is output. If no matching byte sequence is determined, then a byte of the retrieved byte sequence is output.
Cosine Similarity : 0.04552716507934325

Patent Key: 5359430
Text: Block-halftoning method and system with compressed error image A digital image processing system for convening continuous-tone images into halftone images to be output by a receiver with limited storage capacity. The continuous-tone image is converted into a first halftone image by threshold screening. Threshold screening involves comparing the pixel values of blocks of the continuous-tone image with cell values of a threshold array and turning on pixels of a first halftone image according to whether the pixel values of the continuous-tone block are greater than or equal to the cell values of the threshold array. The threshold array is associated with a plurality of gray patterns. A block count is determined which equals the number of pixels of each block of the first halftone image that are tuned on. A second halftone image is produced by combining gray patterns corresponding to the block counts. An error image is produced by determining differences between the first halftone image and the second halftone image. Scattered pixels in the error image are removed. The error image is compressed and sent to the receiver along with the block counts. The receiver produces a final output halftone image by reversing the process that was used to create the error image.
Cosine Similarity : 0.04513458126181728

Patent Key: 5577224
Text: Method and system for caching data A method and system for caching data that improve the efficiency of a cache are provided. Generally, three types of data are stored in a cache constructed according to the principles of the present invention. These types of data include: (1) path tables, (2) directories, and (3) files. Path tables include data regarding all of the directories on a storage medium, directories include data regarding all of the subdirectories and files in each directory, and files include the actual file

data. The preferred embodiment of the cache logically includes eight regions. These regions include (in order of preferred descending priority): (1) path table, (2) directory, (3) two-access, (4) zero-access or prefetch, (5) sequential-locked, (6) one-access, (7) discarded, and (8) invalid. The path table region includes sectors containing path table data, the directory region includes sectors containing directory data, the two-access region includes sectors containing file data that have been accessed twice, the prefetch region includes sectors containing file data that have been prefetched, the sequential-locked region includes sectors containing file data that were prefetched and have now been locked for access, the one-access region includes sectors containing file data that have been accessed once, the discarded region includes empty sectors that are available for reuse, and the invalid region includes a single dummy sector that is used as a placeholder. During operation, a cache manager manages the cache. The cache manager is responsible for manipulating the cache, such as by adding and removing sectors to and from the cache.
Cosine Similarity : 0.04297052444755608

Patent Key: 5506983
Text: Method and system for transactioning of modifications to a tree structured file A method and system for interfacing an application program with a compound document storage system. The present invention provides an interface which an application program uses to manipulate compound documents. In a preferred embodiment, this interface is implemented in a multilayered architecture. The first layer provides methods which an application program uses to access a compound document using the functions of the second layer. The second layer maps requests to store data in the compound document to a storage format using the functions of the third layer. The third layer maps requests to write to a file to an arbitrary storage medium. In another aspect, the present invention provides for the transactioning of modifications to data in a file that is stored in a tree structure having nodes. When modifications are made to a node that is not transacted, the modifications are associated with the closest ancestor node that is transacted. When modifications are made to a node that is transacted, the modifications are associated with that node. When such associated modifications are committed, the modifications are disassociated from that node and associated with the closest ancestor node that is transacted.
Cosine Similarity : 0.04283581993828403

Patent Key: 5218697
Text: Method and system for networking computers having varying file architectures An improved, distributed network comprising a central server and at least one foreign server, which provides a method and means for integrating multiple networks with varying file systems is provided. The present invention allows foreign servers to coexist on a single integrated file server while eliminating server-to-server translations, thus improving the performance of the network. In a preferred embodiment, the central server communicates with central server clients in accordance with a central server network protocol, and

converts central server network file service requests from the central server clients into central server file system commands. Foreign servers communicate with foreign server clients in accordance with a foreign server network protocol and convert foreign server network file service requests from foreign server clients into central server file system commands. The foreign servers also inform the central server of file system operations performed on the central server file system by the foreign file servers.
Cosine Similarity : 0.037426498450197555

Patent Key: 5473691
Text: System and method for computer data transmission The system of the present invention processes data for communication between first and second computers by linearizing the communications message. The message comprises a linear header portion, an extended header portion, and a message body. The linear header portion identifies the number of message recipients and message types. The extended header contains detailed information about the message recipients, such as recipient name and address. The extended header may also contain message subject information, polling information, and password data. The header information is used by the receiving computer to prepare to process the expected data type. The message body may be transferred in a form that takes advantage of the data processing capabilities of the first and second computers. The computers may exchange data processing capabilities so that the most efficient transfer form may be selected. The extended header and message body are encoded using a well-known ASN-1 data encoding process. In addition, the message body may be compressed and encrypted. The system may be readily used in facsimile communication where the first and second computers are facsimile machines.
Cosine Similarity : 0.03703541166647574

Patent Key: 5467435
Text: System and method for mode switching A host computer and printer and method of operation wherein the printer is able to switch between two modes of operation. When the printer is powered up, it initializes its internal data registers and printer memory, followed by a check to see if additional firmware, in the form of a cartridge or the like, is added to the printer. If additional firmware is present, the printer turns operational command over to the additional firmware. The present invention, residing in the additional firmware, stores a complete image of the printer state, internal registers, and memory in a location that cannot be accessed by either mode of operation. The present invention compresses the data so that the complete image of the printer state, internal registers, and memory occupies approximately eight KBytes of memory. The storage location may be part of the printer memory itself, or any other suitable location. The additional firmware then returns operational control to the original firmware within the printer thus allowing the printer to operate in the first mode of operation. The host computer may cause the printer to switch to the second mode of operation by simply overwriting the internal data

registers and printer memory, except for the portion of printer memory that is used to store the compressed image of the initial printer state. The printer may be switched back to the first mode of operation by expanding the compressed image to restore the printer to its initial state. From the perspective of the printer, it has just completed initialization. Thus, the printer may be easily and quickly switched modes of operation.
Cosine Similarity : 0.036743047107376726

Patent Key: 5530895
Text: System and method for computer interface board identification by serially comparing identification address bits and asserting complementary logic patterns for each match A system and method for automatically identifying and configuring interface boards connected to a computer bus is disclosed. Each interface board contains a pair of interface ports that can be addressed by the system and a unique identification address. The interface boards are instructed to serially read the identification address and place a logic 10 in the two least significant bits of the data bus if the first data bit is a logic one. The serial read instruction is performed twice for each data bit in the identification address with a logic 01 data pattern placed on the data bus for the second serial read to assure that a floating data bus is not causing false readings. If no interface board responds to any particular read identification instruction, the system assigns a logic zero for that particular bit of the identification address. Any interface board not having a logic one for a particular first data bit in the identification automatically places itself in a disabled state if the first and second serial read instructions indicate that another interface board did have a logic one for that particular data bit of the identification address. By the time that the system has read all of the identification bits, one and only one interface board will have been identified and enabled. The system can read registers on the interface board to determine which resources are required for operation of that board and assigns parameters such as I/O address, interrupt line, and data channel line. The system enables the other previously disabled interface boards and repeats the identification instructions until all interface boards have been identified and configured.
Cosine Similarity : 0.03542171680248009

Patent Key: 5581669
Text: System and method for peripheral data transfer A system and method for increasing the rate of data transfer from a host computer to a peripheral such as a printer without the need for special hardware within the host computer or a special interface cable coupling the host computer to the peripheral. Data is transferred from the host computer to the peripheral in 4 Kbyte bursts. Handshaking occurs between the host computer and the peripheral only between bursts. Bytes of peripheral data are apportioned into multiple bytes of data within the host computer. The multiple bytes are transmitted from the host computer to the peripheral, each transmitted byte containing a data clock and several bits of peripheral data. In one embodiment, the peripheral data byte is

apportioned into two bytes within the host computer with each byte having a pair of clock signals transmitted along with the peripheral data portion. In another embodiment, three bytes of peripheral data are apportioned into four bytes within the host computer with each byte having a single clock signal transmitted along with the peripheral data portion. Within the peripheral, a clock circuit detects the clock signal from each transmitted byte and generates a delayed signal to latch peripheral data bytes into a storage register. In addition, the first transmitted byte contains a flag to signal the peripheral that the data that follows is RLE compressed data. Parity bits are also included in the transmitted data. The system can be easily implemented on any Centronics compatible printer system to increase the rate of data transfer.
Cosine Similarity : 0.03510808237778483

Patent Key: 5528742
Text: Method and system for processing documents with embedded fonts A user of a host computer creates a document and embeds in the document a font file used to create the document. The user then transfers the document, along with the embedded font file, to a remote computer. The remote computer processes the document using the embedded font file. If the embedded font file contains a preview and print type of font, then the remote computer allows users to preview the document on a display screen and to print the document on a printer using the embedded font. However, the preview and print type of font does not allow the user to modify the document. If the embedded font file contains an editable type of font, then the remote computer allows the user to modify the document, save the modified document to an original file name, and print the modified document on the printer. However, the editable type of font does not allow the user to save the document under a file name different from the original file name.
Cosine Similarity : 0.03423480040032346

Patent Key: 5513315
Text: System and method for automatic testing of computer software A system and method for automatically testing software using a deterministic acceptance test and random command sequence selections to more rapidly uncover errors in computer software. A results analyzer checks test parameters following the execution of each of a series of predetermined test commands and a series of random test commands to determine if the commands were properly executed. The test command sequences and test results determined by the results analyzer are stored in a log file which may be examined by the tester. The randomly selected test command sequence is stored in a tracker log file. The tester may reexecute the tracker file in its entirety or any portion selected by the tester as a means of determining the cause of an error in the software. The system also provides for error recovery. When an error is detected, the system restarts the test of the computer software and continues maintaining the log file and the tracker file. The system also uses the probabilities for various responses that an end-user may make in response to a particular screen display or program

state. The system may select random responses corresponding to the probabilities. These probabilities are calculated for each individual screen display or software state. Because the present invention executes a random selection of command sequences, a particular applications program may be tested on multiple machines, thereby decreasing the overall time required for acceptance testing.
Cosine Similarity : 0.03153191629273203

Patent Key: 5499109
Text: System for transferring messages between input and output devices in a communication device A method and system for processing messages is provided. In a preferred embodiment of the present invention, a message scheduler, a job process, and a format resolution module are used. The message scheduler identifies when a new message is to be processed, schedules the new message for processing, invokes the format resolution module to determine a method of converting data in the message to an appropriate format for a destination device or file, and invokes a job process. The format resolution module determines an appropriate method for converting data in the message from a format acceptable to the source devices or files to a format acceptable to the destination devices or files and creates a target message containing a reference to a destination device or file. The job process sends the data between the source devices or files to a destination device or file and performs the appropriate conversion. The preferred embodiment of the present invention is designed to allow for the support of new devices and new data formats with little change to the existing system through the use of a building block methodology. Therefore, new devices and data formats can be supported in an easy and efficient manner.
Cosine Similarity : 0.030934261653043305

Patent Key: 5414526
Text: System and method for encoding facsimile data A system and method for facsimile data encoding uses vectors indicating the locations of changing elements along a horizontal scan line. The change vectors are stored in a vector table. The system may use a reference vector table and a coding vector table if CCITT recommendation T.6 two dimensional encoding is used. The system encodes horizontal scan lines using the vectors to determine the location of the changing elements. The value of the reference changing element is easily determined using the vector tables. The system determines the locations of all changing elements on a horizontal scan line before performing any encoding of that particular scan line thus simplifying the encoding process. The system can receive and decode facsimile data to generate change vectors. The change vectors provide a simple mechanism for regenerating the raw data. The change vectors are used to encode raw data into any standard facsimile encoding format, to decode facsimile data, and to interconvert from one encoding format to another without having to convert the encoded data back to raw data.
Cosine Similarity : 0.03087120112810153

Patent Key: 5438433
Text: System and method for facsimile cover page storage and use A user interface simplifies operation of a intelligent facsimile machine (IFAX). A display screen displays a plurality of menus and allows the user to select from the menus. The IFAX can store a plurality of digital cover pages to minimize transmission time for a facsimile cover page. The user may select from a list of stored digital cover pages. The user may also attach a binary data file to a facsimile message and transfer the data to another facsimile machine. The IFAX uses a storage location for storing outgoing facsimile messages. The IFAX periodically check the storage location to determine if more than one facsimile message is to be transmitted to the same location and transmits the facsimile messages in one facsimile telephone call. If the IFAX is coupled to a second IFAX on a network, the two IFAX machines can balance the work load by sending a load transfer request if the number of outgoing facsimile messages exceeds a predetermined threshold level. The IFAX can also route incoming facsimile messages to a variety of destinations such as a floppy disk or other storage device, or an external computer. The IFAX can also relay incoming facsimile messages to another facsimile machine, using a set or relay instructions. The relay instructions may be stored in the IFAX or may be a portion of the incoming facsimile message. The relay instructions may be nested, and the IFAX sends the facsimile message to a second IFAX with instructions for the second IFAX to relay the facsimile message to a third facsimile machine. The IFAX contains security measures to prevent unauthorized relaying.
Cosine Similarity : 0.02470636421303212

Patent Key: 5537415
Text: Multi-channel personal messaging unit A mobile communications system in accordance with the invention comprises primary and secondary wireless digital communications networks. The system also comprises a wireless mobile messaging unit. The primary wireless digital communications network operates on a first communications channel using a reserved time slot protocol having discrete time slots reserved for data transmissions to the mobile messaging unit. The secondary wireless digital communications network operates on a second communications channel using a continuous downlink protocol under which data transmissions to the mobile messaging unit might take place at any time. The wireless mobile messaging unit has channel selection logic operatively connected to tune the mobile messaging unit to the first communications channel during the discrete time slots and to the second communications channel during other times. This allows the mobile unit to communicate concurrently with both of the primary and secondary digital communication networks, while requiring only a single radio receiver or transceiver.
Cosine Similarity : 0.024311979612573108

Patent Key: 5461701
Text: System and method for peripheral data transfer A system and method for

increasing the rate of data transfer from a host computer to a peripheral without the need for special hardware within the host computer or a special interface cable coupling the host computer to the peripheral. Some simple hardware modifications are required within the peripheral interface. Data is transferred from the host computer to the peripheral in 4 KByte bursts. Handshaking occurs between the host computer and the peripheral only between bursts. Each byte of peripheral data is apportioned into two nibbles within the host computer. Two bytes are transmitted from the host computer to the peripheral, each transmitted byte containing two data clocks, a panty bit, and a nibble of peripheral data. Within the peripheral, a clock circuit receives the two clock signals from each transmitted byte and generates delayed signals to latch the nibbles of peripheral data into storage registers. The latching signals are generated only after the logic transition of both clock signals. The storage registers are used to reform the original byte of peripheral data from the two nibbles. In addition, one of the transmitted bytes contains a flag to signal the peripheral that the data that follows is out-of-band data. This allows the host computer to address registers within the peripheral. Data compression may also be implemented to increase the speed of data transfer. Out-of-band data can include a data number indicating the number of times that a particular byte of peripheral data should be repeated. The system can be easily implemented on any Centronics compatible printer system to increase the rate of data transfer.
Cosine Similarity : 0.02389787144261287

Patent Key: 5550930
Text: Method and system for training a handwriting recognizer at the time of misrecognition A method and system for training a handwriting recognizer at the time of misrecognition is provided. In a preferred embodiment, a trainer program traps and stores the output from a recognizer. The output includes the recognized symbols mapped to the handwritten data. When training is requested by a user, the trainer displays the handwritten data that was input by the user and the recognized symbols. The user then selects the symbols to train on. In response to the selection, the trainer displays the portion of the handwritten data corresponding to the selected symbols. The user then enters the symbols that the displayed portion of the handwritten data should be recognized as. The trainer then requests the recognizer to train based on the displayed portion of the data and the entered symbols. When training is complete, the trainer requests re-recognition of the handwritten data and displays the newly recognized symbols.
Cosine Similarity : 0.023154905551659416

Patent Key: 5287417
Text: Method and system for recognizing a graphic object's shape, line style, and fill pattern in a pen environment A method and system for recognizing a graphic object's shape, line style, and fill pattern in a pen environment are provided. In a preferred embodiment, a user draws a graphic object on an

electronic tablet of a computer system. The graphic object comprises a shape attribute, a line style attribute, and a fill pattern attribute. A Recognizer, provided by the present invention, recognizes the graphic object drawn by the user. The graphic object drawn by the user is made up of a plurality of data points, each data point having an x-coordinate and a y-coordinate. The Recognizer subdivides the plurality of data points into one or more strokes, each stroke representative of a path travelled by the handwriting instrument after the handwriting instrument touches the electronic tablet and before the handwriting instrument is lifted off of the electronic tablet. For each data point in each stroke, the recognizer maps the data point to a normalized data point, then transforms the normalized data point into a transformed data point, and then determines whether the transformed data point is a shape-defining data point or an interior-defining data point. Shape-defining data points are representative of the shape attribute and the line style attribute, while the interior-defining data points are representative of the fill pattern attribute. Based on the coordinates of the transformed data points and the coordinates of the data points input by the user, the recognizer determines the attributes. After determining what the attributes of the graphic object are, the recognizer selects a representation of the graphic object that corresponds to the determined attributes and displays the selected representation on the electronic tablet.
Cosine Similarity : 0.022945335594636705

Patent Key: 5511197
Text: Method and system for network marshalling of interface pointers for remote procedure calls A computer method and system for passing a pointer to an interface from a server process to a client process. In a preferred embodiment, the server process instantiates an object that has multiple interfaces. The server process identifies an interface to pass to the client process and creates a stub object for receiving a request to invoke a function member of the interface and for invoking the requested function member upon receiving the request. The server process then sends an identifier of the stub to the client process. When the client process receives the identifier of the stub, it instantiates a proxy object for receiving requests to invoke a function member of the interface and for sending the request to the identified stub. The client process can then invoke the function members of the interface by invoking function members of the proxy object. The proxy object sends a request to the identified stub. The identified stub then invokes the corresponding function member of the interface.
Cosine Similarity : 0.022798806901462697

Patent Key: 5565886
Text: Method and system for rapidly transmitting multicolor or gray scale display data having multiple bits per pixel to a display device A method and system for rapidly transmitting multicolor or gray scale display data having multiple bits per pixel to a display device is provided. In a preferred

embodiment, the method and system constitutes a software facility. The facility first encodes the image into multiple bit per pixel raster data. The multiple bit per pixel raster data has a number of pixels. Each pixel stores a color value corresponding to the color of a particular region within the image. The facility then associates one or more single bit per pixel raster planes with the multiple bit per pixel raster data. Each single bit per pixel raster plane corresponds to a color value that appears in the multiple bit per pixel raster data. Each pixel of each single bit per pixel raster plane corresponds to a pixel of the multiple bit per pixel raster data, and indicates whether the corresponding pixel in the multiple bit per pixel raster data contains the color value of the single bit per pixel raster plane. The facility then transmits the associated single bit per pixel raster planes to the display device. Each single bit per pixel raster plane is accompanied by one or more instructions to draw the single bit per pixel raster plane in the corresponding color value.
Cosine Similarity : 0.022502088666935337

Patent Key: 5581736
Text: Method and system for dynamically sharing RAM between virtual memory and disk cache In a computer system having a processing unit, a primary memory space (RAM) and a secondary memory space (disk), the primary memory space being allocated between a virtual memory portion and a disk cache portion, a method of dynamically adjusting the allocation of the primary memory space. The number of times that the processing unit accesses the secondary memory space in a predetermined time period is measured. Next, it is determined whether an adjustment to the allocation of the primary memory space would reduce the number of times that the secondary memory space is accessed by the processing unit. If it is determined that an adjustment to the allocation of the primary memory space would reduce the number of times that the secondary memory space is accessed by the processing unit, then the allocation of the primary memory space will be adjusted by increasing the portion allocated to either virtual memory or disk cache, and decreasing the portion allocated to the other.
Cosine Similarity : 0.022449050404412647

Patent Key: 5574854
Text: Method and system for simulating the execution of a computer program A simulation system to simulate the execution of a computer program. The computer program is developed for invoking operating system functions of a first operating system. Each operating system function performs a behavior in accordance with passed parameters. The simulation system generates a log during the execution of the computer program under control of the first operating system. The log includes an indication of each invocation of an operating system function by the computer program and an indication of each parameter passed to the operating system function by the computer program and the current time. The logged execution is then simulated by the simulation system on a second operating system. The simulation system invokes an operating system function of the second operating system to perform a behavior similar to the behavior

performed by each logged invocation of the operating system function of the first operating system in accordance with the passed parameters. Comparison of the functionality, reliability, and performance of the two systems are thereby enabled.
Cosine Similarity : 0.02078957460352923

Patent Key: 5272628
Text: Method and system for aggregating tables having dissimilar formats The present invention contemplates a method and system for automatically aggregating tables having a variety of configurations or layouts into a single destination table. Specifically, tables having a variety of categories with multiple divisions within those categories may be combined wherein rows and columns are automatically created in a destination table based on the categories and divisions of one or more source tables. In accordance with the teachings of the present invention, a plurality of source tables are selected as input to the system. A template containing categories and divisions for aggregation is then manually generated by a user or automatically generated by the computer system based on the categories and divisions contained within the source tables. Once the template is generated, mapping tables for rows and columns are created wherein each mapping table comprises an array of pairs of values wherein each pair comprises a first value for identifying a source table location and a second value for identifying a template location. The system then generates a single destination table by applying the mapping tables and by performing the desired mathematical function on the values in the source and destination tables (e.g., summing the values in the appropriate locations in the source and destination tables).
Cosine Similarity : 0.020672127345909206

Patent Key: 5337258
Text: Cost metrics A resource oriented host computer-printer system is disclosed in which the host computer and printer share information and data processing duties. A system and method for analyzing the execution times for draw primitives allows the host computer to determine whether the printer will be able to render draw primitives in real-time. The inventive system sends a series of test instructions to the printer at the time the printers is installed on the host computer. A timer is used to time a predetermined period of time during which the draw primitives are sent to the printer for execution. Based on the number of draw primitives executed and the type of draw primitives executed, the system constructs a printer model. A log file is used to store the acquired cost metric data. In one embodiment of the invention, a clumping procedure is used to classify cost metric data. A series of cost tables stores the classified cost metric data. A map table provides a map to the cost table to speed up the process of cost metric data retrieval. At run time, a resource assembler calculates the cost of executing each draw primitive within a band to determine if the printer can render the draw primitive in real-time. If the band is too complex for the printer to render in real-time, the host computer will render

the band and transmit the bit-map of that band to the printer. If too many bands on one page are complex, the host computer may render the entire page and transmit the bit-map for all bands on the page.
Cosine Similarity : 0.020601818008255567

Patent Key: 5339432
Text: Method and system for providing user control of device driver configuration A method and system for providing a user with interactive control of device driver configuration. In a preferred embodiment, during configuration of a device driver composed of multiple component drivers, each of a plurality of available component drivers is invoked for potential inclusion in the device driver. For each available component driver, a component driver definition file is provided which contains definition statements. Also for each available component driver, an entry in a parameter registry is provided which contains a list of configuration parameters to be passed to the available component driver when it is invoked. Upon user selection of a component driver, the corresponding component driver definition file is read and the definition statements from the corresponding component driver definition file are provided to the user. In accordance with user responses to the definition statements, the configuration parameters are assigned appropriate values and updated in the corresponding entry in the parameter registry. As a result, upon a next configuration of the device driver, the modified configuration parameters are passed to the selected component driver when invoked for inclusion in the device driver.
Cosine Similarity : 0.020451399377390475

Patent Key: 5557440
Text: Noise-insensitive optoencoding techniques with compensation for device variations A method of detecting quadrature signals in a computer input device allows a microprocessor in the input device to perform comparator functions, thus eliminating the need for external comparator circuitry. At least one light-emitting element in the input device emits light pulses, and these light pulses are selectively received by a light-detecting element. A notched encoder wheel separates the light-emitting element from the light-detecting element, allowing various amounts of light to be received by the light-detecting element depending on whether a notch separates the two elements. The microprocessor loads a sample of the output from the light-detecting element: a first sample taken at a selected time value and a second sample taken at twice the selected time value. The second sample is used for quadrature calculations used in determining cursor movement on a video display device. The first sample is retrieved by the microprocessor and determined if it is a digital "1" signal. If it is, then the selected time value is decremented by one sampling period.
Cosine Similarity : 0.019966136896757528

Patent Key: 5481667
Text: Method and system for instructing a user of a computer system how to

perform application program tasks A method and computer system for coaching a user how to perform application program tasks is provided. The user activates the coaching program of the present invention while an application program is running on the computer system. If the user needs such assistance, the coaching program helps the user determine the next task the user wishes to perform in the application program. The coaching program then determines if the application program is in the correct state for performance of the next task. If the application program is not in the correct state, the coaching program guides the user through performing essential preliminary tasks that place the application program in the correct state for performance of the next task. The computer system simultaneously displays on the display screen output, such as application program instructions, generated by the coaching program and a user interface display generated by the application program. Output generated by the coaching program always overlays the user interface display in such a way that it does not block the working portion of the user interface display and it does not interrupt the operation of the application program. The user performs the next task in the application program by interacting with the working portion of the user interface display, while the computer system continues to display the output generated by the coaching program. This enables the user to read instructions displayed on the display screen on how to perform the next task during performance of the next task.
Cosine Similarity : 0.01957539440528691

Patent Key: 5469533
Text: Resource-oriented printer system and method of operation A host computer and printer and method of operation in which the data file describing a document is examined by a resource assembler which determines which resources are required from the host computer to print the document. The resource assembler translates the document into a set of render primitives for each band or page of the document and creates a dependency list interrelating the required resources with each band or page. The resource assembler places the required resources and set of primitives into a host resource store and communicates the dependencies to other portions of the system. A resource loader uses the list to determine the most efficient manner for loading and releasing resources from a printer resource store. A resource scheduler controls the actual timing of resource and primitives transfer and determines when all required resources for a band or page are present within the printer resource store. The resource scheduler generates an execute signal which causes a resource executor to convert the primitives to a bit-map data file. The resource assembler may convert the primitives to a bit-map data file if the resource executor cannot convert the primitives in real-time while the print engine is printing the band or page. The resource assembler also converts the primitives if it is more efficient than the resource executor for converting a particular band or page. If bidirectional communication is available between the printer and host computer, the printer manages its own memory and determines the most efficient printing sequence. Enhanced error recovery is also possible with bidirectional communication.
Cosine Similarity : 0.019505630599508352

Patent Key: 5357603
Text: Method and system for changing a shape type while maintaining existing graphic characteristics A computer method and system for changing a shape type of a graphic data object. A first shape type is obtained through user selection and a graphic data object is created having graphic characteristics as predefined and/or as designated by the user. When so desired by the user, a second shape type is obtained through user selection. The graphic data object is then modified to have the second shape type while maintaining the other graphic characteristics. In a preferred embodiment, the first and second shape types are selected via a mouse through which the user positions the cursor on a shape type menu. To initially define the appearance of the graphic data object having the first shape type, graphic characteristics are obtained from the user, including color, fill pattern, border and size. The shape type of the graphic data object can be changed by re-selecting a new shape type from the shape type menu. The graphic data object is then redefined and displayed having the new shape type and maintaining the other graphic characteristics as originally selected.
Cosine Similarity : 0.01920449357695294

Patent Key: 5231577
Text: Method and system for processing formatting information in a spreadsheet A method and system wherein characters in cells of a spreadsheet may be assigned character attribute information, such as font type, font size, bold, italics, underline, etc., wherein the character attribute information is referred to as an extended format. Each possible extended format combination is stored in an extended format table comprising a linked list of extended format combinations. When a new extended format combination is created, its position in the XF table is calculated according to a predetermined hash function. If two extended format combinations hash to the same location, the conflicting extended format is placed in an overflow table. Each cell in the spreadsheet contains an internal index which references a cell to an entry in the extended format table. Character format information is not stored in individual cells, and cells may share the same format combinations by merely setting the cell index to point to a desired format combination.
Cosine Similarity : 0.018651615975656618

Patent Key: 5537589
Text: Method and system for efficiently performing database table aggregation using an aggregation index A method and system for efficiently performing database table aggregation is provided. In a preferred embodiment, an aggregation facility efficiently aggregated a source table using indices on an aggregated column of the source table and a grouping column of the source table. The facility uses the index on the aggregated column to identify the contents of the aggregated column in each row of the source table. The facility further uses information derived from the index on the grouping column to identify the

contents of the grouping column in each row of the source table. For each row of the source table, the facility aggregates the identified aggregated column contents into a result value for the identified grouping column contents. In a further preferred embodiment, the facility generates a relation mapping from source table row to grouping column, which the facility uses to identify the contents of the grouping column in each row of the source table. In a further preferred embodiment, the facility may be used to perform multiple-level aggregations, as well as aggregations in which there are multiple grouping columns, multiple aggregated columns, and/or multiple result columns.
Cosine Similarity : 0.01860032586245294

Patent Key: 5510811
Text: Apparatus and method for controlling cursor movement An apparatus and method for navigating through an application program on a computer coupled to a computer-controlled display screen. The user can control the cursor position on the computer-controlled display using simple controls. The invention may use a hand-held controller with a four direction control button and a function select button. The computer accepts the direction input information and moves the cursor or focus according to one of three different navigation functions. The first two navigation functions are selected by the application program, and may change from one navigation to another in different portions of the program or under user control. With the first navigation function, the direction buttons on the controller shift the focus from one hot spot to another hot spot in the selected direction using predefined criteria. With the second navigation function, the focus is shifted from a present position on the computer-controlled display to the adjacent position in the selected direction. If the function select button is depressed while the focus is on a hot spot, the function associated with that particular hot spot are enabled. A third navigation function is enabled if the function select button and the directional control button are both depressed. With the third navigational function, the focus moves from the current position in any direction selected by the directional control button. The focus movement may simultaneously occur in two dimensions using any of the navigational functions if the user selects directions in two dimensions on the four directional control button.
Cosine Similarity : 0.018214901358256673

Patent Key: 5124989
Text: Method of debugging a computer program A method and system for recording debug commands as they are executed on a program is disclosed. The line number in the program reached after executing the debug command is also stored on the tape. The debug history tape is a sequential record of the debug commands. A user may reexecute one or more of the debug commands on the program by running the debug history tape. The user may stop the reexecution of the debug commands on a given line in the program generally in the area thought to contain the error, by moving an ending pointer to that region in the debug history tape. The tape will execute up to the ending pointer and then stop. The user may then

examine the program, execute additional debug commands or take other action to locate the error. Any additional debug commands are also stored on the tape. The ability to reexecute the debug commands and stopping their execution at selected lines in the program aids the user in locating errors. After locating the errors, the user modifies the program. The user may then reexecute the same debug commands on the modified program to ensure that the error has been corrected.
Cosine Similarity : 0.018161370244970956

Patent Key: 5375241
Text: Method and system for dynamic-link library A dynamic-link library method and system for providing services to one or more application programs. The system includes a code resource that includes a plurality of service routines to allow any of the programs to use the service routines. The code resource is physically distinct from the application programs and does not have to be copied into the application programs, which allow the code resource and the application programs to be updated, compiled, and tested separately from each other. A selector routine receives the selection information from the stub routine, and in response thereto accesses the associated service routine and causes the associated service routine to perform its intended service. Preferably, the stub routine allocates parameters to be used by the associated service routine and passes the parameters to the selector routine along with the selection information. Preferably an interface routine is used to translate an index to the code resource into a selector pointer to the selector routine. The interface routine receives the selection information from the stub routine and passes the selection information to the selector routine using the selector pointer. A resource initiation routine loads and locks the code resource into memory. The resource initiation routine allocates resource global variables space for storing resource global variables used by the code resource. The selector routine saves an index to program global variables space for storing program global variables, the index being previously stored in a register. The selector routine stores an index to the resource global variables space into the register. After a service routine performs its service the selector routine restores the index to the program global variables space into the register. When the services of the code resource are no longer needed the current main program calls a resource termination routine. The resource termination routine unlocks the code resource in and disposes of the index to the resource global variables space.
Cosine Similarity : 0.017734522036153742

Patent Key: 5432936
Text: Method for implementing pointers to members in a compiler for an object-oriented programming language A method and system in an object-oriented environment for determining the offset of a data member of a derived class when the derived class has a virtually inherited base class and the data member is defined in the base class. In a preferred embodiment, the base class has a data

structure and a class address. The base class data structure has the data member located at a data member offset from the base class address. The derived class has a data structure and a class address. The derived class data structure includes an occurrence of the base class data structure. The occurrence of the base class data structure is located at a base class offset from the derived class address. In a preferred embodiment, the base class offset is stored at a memory location, a first field and a second field for a pointer to the data member are allocated, the data member offset is stored in the first field, an indicator of the stored base class offset is stored in the second field, the pointer is dereferenced by retrieving the base class offset using the indicator stored in the second field, retrieving the data member offset from the first field, and adding the retrieved base class offset to the retrieved data member offset to give the offset of the data member within the derived data structure.
Cosine Similarity : 0.017368743863978874

Patent Key: 5418956
Text: Method and system for avoiding selector loads An improved method and system for reducing the number of segment register loads that occur during the transfer of control from an application program to an operating system routine is provided. In preferred embodiments on an Intel 80386 processor, an application program and operating system kernel share a code segment address space and a data segment address space from 0 to 4G. During the execution of the application program, which executes in user mode, a page table is defined to prevent the application program from accessing pages which correspond to the address space of 2G to 4G. When the application program invokes a system routine, the system routine does not need to load the data segment register since the application program and the kernel share the same data segment. If an application program does load the data segment register with a selector other than the selector for the shared data segment, then when the kernel tries to access memory using the data segment register, an exception is generated. The exception handler restores the selector for the shared data segment into the data segment register and resumes execution of the instruction which caused the exception.
Cosine Similarity : 0.016366010725225637

Patent Key: 5146580
Text: Method and system for using expanded memory for operating system buffers and application buffers A method and system for allowing both operating system buffers and application program buffers to reside in expanded memory is provided. In a preferred embodiment, a page frame in conventional memory is provided through which pages in expanded memory are accessed. An application program allocates pages in expanded memory and maps pages into the page frame. An operating system also allocates pages in expanded memory. In a preferred embodiment, an application program maps its allocated pages into each page of the page frame. The application then issues a read request to read data from a file storage device into the page frame. Upon completion of the transfer from

the file storage device, the operating system determines if there are system buffers that contain a more current version of the data transferred. If so, the operating system maps a system buffer into the highest page of the page frame and then transfers the more current data from the system buffer to the application buffer. If, however, the application buffer to receive the more current data occupies the highest page in the page frame, then the system buffer is mapped into the lowest page of the page frame.
Cosine Similarity : 0.016015331563094256

Patent Key: 5341464
Text: Luminance emphasized color image rendering A high color resolution image is rendered using a palette having a lower color resolution. The color of each pixel in the image is mapped to the nearest of the palette colors located on or between levels of uniform luminance adjacent to the pixel color. The mapping of the pixel color is further constrained to exclude palette colors for which double the error to the pixel color is outside the color gamut. The mapping is performed efficiently by a look-up table, the size of which is reduced by first dithering the pixel color to a color in an intermediate palette and then indexing the table using the intermediate palette color to find the reduced palette color. The mapping can be performed in an error diffusion process in which the pixel's color is modified by error diffused from any previously rendered neighboring pixels, then mapped to a reduced palette color to render the pixel with the reduced palette color, and finally diffuse any error between the pixel's color and the reduced palette color to any not yet rendered pixels.
Cosine Similarity : 0.015343572828068782

Patent Key: 5442751
Text: Method and apparatus for processing data through a register portion by portion A method for fetching data in the form of a group of source bits (bytes, words, etc.) from computer memory and providing successive portions of the group to a computer process. An indicator such as a bit string is loaded into one location of a register and the group of source bits is loaded into another location in the register. The contents of the register are then rotated to move successive portions of the group into a register location where the portions can be accessed for a process. Tracking the processing of the successive portions of the bit group is handled efficiently in a loop through monitoring of the indicator, which "walks" through the register concurrently with movement of the successive portions of the source bit group. When the indicator bit has returned to its initial register location, the processing of the group of source bits is complete. The method may be applied where it is desirable to process bytes, words or other groups of bits in smaller portions, such as in image processing for expanding a one bit per pixel image to a multibit per pixel image.
Cosine Similarity : 0.015150066953099488

Patent Key: 5485558

Text: Method and system for displaying color on a computer output device using dithering techniques A method and system for generating a dither pattern for a specified color is provided. In a preferred embodiment of the present invention, a system generates a dither pattern corresponding to a specified RGB value. The dither pattern contains a specified number of pels, each pel capable of being set to each color in a set of active colors. Each active color has a corresponding RGB value. Each RGB value is defined as a point in a three dimensional coordinate system having a red, green, and blue component. The coordinate system has a plurality of non-overlapping, spaces with each vertex representing an active color. One space is designated as a mapping space. The system maps the specified RGB value to the mapping space from an original space containing the specified RGB value. The system then determines the four active colors whose corresponding RGB values are closest to the mapped RGB value. The system then determines the number of pels in the dither patter to set to each determined active color based on the distance between the RGB value corresponding to the determined active color and the mapped RGB value. The system then maps the determined active colors to the original space. Finally, the system sets the pels in the dither pattern to the mapped active colors based on the determined number of pels for that color.
Cosine Similarity : 0.014820390752020919

Patent Key: 5281958
Text: Pointing device with adjustable clamp attachable to a keyboard A pointing device which is removably attachable to a keyboard is disclosed. The pointing device is coupled to an attachment assembly, the attachment assembly being removably and selectively attachable to the keyboard. The attachment assembly includes a coupling assembly and a tilting assembly. The full weight of the pointing device is supported by the computer so that a work surface is not necessary. In one embodiment, a clamping assembly is provided. The clamp assembly includes a variable width clamp to permit the pointing device to be attached to any one of a number of different keyboards or in different positions on the same keyboard. The tilting assembly permits the user to select whether the pointing device is in a horizontal, vertical or other orientation. A rotatable ball of the pointing device is retained in contact with the rotation sensing encoders regardless of the orientation of the housing. The buttons for activating switches to enter commands into the computer overlap a top portion and a side portion of the pointing device.
Cosine Similarity : 0.012505954194772968

Patent Key: 5155842
Text: Logical event notification method and apparatus A method and apparatus for notifying programs that a logical event has occurred on a network, said event being a power failure. Upon the occurrence of a logical event in an operating program, an alert report is generated and stored in a buffer. An alert function call occurs, providing the event type and a pointer to the buffer. The alert function call reads a look-up table listing the programs or users

requesting notification of events. The look-up table provides the addresses to which notification should be sent and the type of notification requested. The alert subroutine sends the requested event data from the buffer to the listed addresses. The alert function is completed and the operating program resumes operation. Upon receiving the event report, the receiving program stores it, displays it to a user, generates additional reports, begins controlling network activities, or the like as directed by the receiving program. The invention provides the advantage that each operating program need only perform a universal function call to send event data through the network and then may return to a task. The operating program is not concerned with who receives the report or what action is taken based on the report. The programs requesting alert data from an operating program of any type need only provide a request to an alert look-up table. The sources of the events and requesting programs are all software controlled, providing ease in adding or modifying each.
Cosine Similarity : 0.011594999573852353

Patent Key: 5471564
Text: System and method for dynamic printer timeout A resource oriented host computer-printer system in which the host computer and printer share information and data processing duties. A system and method for analyzing the execution times for draw primitives allows the host computer to determine whether the printer will be able to render draw primitives in real-time. If the printer cannot render the draw primitives in real-time, the host computer may send the draw primitives to be pre-rendered by the printer. The rendering is accomplished in less than thirty seconds. The host computer can determine the execution times for the draw primitives and dynamically alter the timeout period accordingly. If the printer exceeds the determined execution time, the host computer generate a timeout error message. No false timeout error messages are generated by the host computer because the timeout period is related to the actual processing time required by the printer. If the printer is coupled to a network, the timeout period may be set to the maximum thirty second period because the host computer may not have continuous communication with the printer. The host computer will still not generate false timeout errors because the maximum timeout period is still related to the actual processing time required by the printer. The inventive system and method are applicable to any peripheral in which a timeout period is used.
Cosine Similarity : 0.01144744620181387

Patent Key: 5546581
Text: Method for integrating a discrete subprogram into a main program A method is disclosed for integrating a plurality of discrete subprograms with a main program. The method enables the main program to integrate any discrete subprogram stored in its directory with the main program. The method includes the step of identifying each discrete subprogram stored in the directory of the main program and creating a cross reference array to enable the main program to access the plurality of subprograms. In addition to creating the cross reference

array, an event reference list of the main program is updated, enabling commands of the subprogram to be given key and menu assignments, thereby further integrating the subprogram with the main program. Similarly, the subprogram can be removed from the main program simply by deleting the subprogram from the directory of the main program. Further features of the subject invention include a method for enabling the subprogram to request the main program to perform main program functions, and a method for limiting the number of subprograms loaded in the address space of the computer.
Cosine Similarity : 0.011057550184679606

Patent Key: 5410705
Text: Method for generating an object data structure layout for a class in a compiler for an object-oriented programming language A method for a computer compiler for an object-oriented programming language for implementing virtual functions and virtual base classes is provided. In preferred embodiments of the present invention, the data structure layout of an object includes a virtual function table pointer, a virtual base table pointer, occurrences of each non-virtual base class, the data members of the class, and occurrences of each virtual base class. If a class introduces a virtual function member and the class has a non-virtual base class with a virtual function table pointer, then the class shares the virtual function table pointer of the non-virtual base class that is first visited in a depth-first, left-to-right traversal of the inheritance tree. In preferred embodiments of the present invention, each instance of a given class shares a set of virtual function tables and virtual base tables for that class. In preferred embodiments, adjusters are used when a function member in a derived class overrides a function member that is defined in more than one base class, and when a derived class has a base class that overrides a function member in a virtual base class of that class and the derived class itself does not override the function member.
Cosine Similarity : 0.010951113293738194

Patent Key: 5546518
Text: System and method for composing a display frame of multiple layered graphic sprites A data processing apparatus includes a graphics display device for displaying a display frame comprising a plurality of display frame pixels. A sprite management system composes the display frame from a plurality of graphic sprites. Each graphic sprite comprises a plurality of sprite pixels and corresponding sprite pixel values. Each sprite has a specified depth relative to the other sprites. One of the sprites is designated to be a video sprite. This sprite is loaded with a chroma-key value. The sprite management system includes a data processing device connected to access a display frame composition buffer. The data processing device is programmed to write pixel values of individual sprites to the display frame composition buffer. This writing begins with the pixel values of the sprite having the greatest depth and proceeds with the pixel values of the remaining sprites in order of decreasing sprite depth. The display frame data is then passed to a video overlay board which overlays a video image

over those pixels containing the chroma-key value. The result is a display frame in which the plurality of graphic sprites, including the video sprite, appear layered with respect to each other in accordance with their respectively specified depths.
Cosine Similarity : 0.010780514479708991

Patent Key: 5581760
Text: Method and system for referring to and binding to objects using identifier objects A method and system for referring to and binding to objects using a moniker object is provided. In a preferred embodiment, a moniker object contains information to identify linked source data and provides methods through which a program can bind to the linked source data. A binding method is provided that returns an instance of an interface through which the linked source data can be accessed. The moniker object can identify source data that is stored persistently or nonpersistently. In addition, moniker objects can be composed to form a composite moniker object. A composite moniker object is used to identify linked source data that is nested in other data. In a preferred embodiment, the moniker object provides other methods including a reducing method that returns a more efficient representation of the moniker object; equality and hash methods for comparing moniker objects; and inverse, common prefix, and relative-path-to methods for comparing and locating moniker objects from other moniker objects. Several implementations of a moniker object are provided including a file moniker, an item moniker, a generic composite moniker, a pointer moniker, and an anti moniker. Each implementation is a moniker class and has a class identifier that identifies code to manage the moniker class.
Cosine Similarity : 0.010514544758252097

Patent Key: 5588100
Text: Method and system for creating a freeform drawing object A method and system for creating a freeform drawing object having any desired combination of polygonal and freehand segments. In a preferred embodiment, at any time during creation of the freeform drawing object, a polygonal segment is created by releasing a mouse at a polygonal cursor start point and then depressing it at a polygonal segment end point, and a freehand segment is created by dragging the mouse from a freehand cursor start point to a freehand cursor end point. Interpretation of whether a depress-move-release sequence should be considered a drag is based on the amount of time the mouse button is held down before being released. Any combination of polygonal and freehand segments is thus provided until the freeform object is completed by double clicking the mouse or by clicking the mouse at a cursor location within a predetermined distance from an original cursor point. During the creation of a polygonal segment a polygonal cursor is displayed and a straight rubber band line is drawn from the starting to current cursor location. During the creation of a freehand segment a freehand cursor is displayed which differs in appearance from the polygonal cursor, and a solid line is drawn along the cursor path.
Cosine Similarity : 0.01031966018986342

Patent Key: 5297284
Text: Method and system for implementing virtual functions and virtual base classes and setting a this pointer for an object-oriented programming language A method for a computer compiler for an object-oriented programming language for implementing virtual functions and virtual base classes is provided. In preferred embodiments of the present invention, the data structure layout of an object includes a virtual function table pointer, a virtual base table pointer, occurrences of each non-virtual base class, the data members of the class, and occurrences of each virtual base class. If a class introduces a virtual function member and the class has a non-virtual base class with a virtual function table pointer, then the class shares the virtual function table pointer of the non-virtual base class that is first visited in a depth-first, left-to-right traversal of the inheritance tree. In preferred embodiments of the present invention, each instance of a given class shares a set of virtual function tables and virtual base tables for that class. In preferred embodiments, adjusters are used when a function member in a derived class overrides a function member that is defined in more than one base class, and when a derived class has a base class that overrides a function member in a virtual base class of that class and the derived class itself does not override the function member.
Cosine Similarity : 0.010271366158754312

Patent Key: 5452353
Text: Canonical telephone numbers A system and method using canonical telephone numbers which allows automatic calling with any location in the world independent of the caller's location. The caller canonical telephone number and a plurality of caller prefixes are stored within the system. A telephone directory stores a plurality of callee canonical telephone numbers for locations throughout the world. The caller selects a callee canonical telephone number from the telephone directory, and the system uses the callee canonical telephone number and the caller canonical telephone number to determine which digits of the callee canonical telephone number must be placed on the telephone line to complete the call. The system then adds the appropriate prefix for international, long distance, or local telephone calls. The telephone directory may be in the form of a software file that can be transferred to any telephone location throughout the world. The telephone directory may be directly installed at any caller location without alteration for the specific location. The user may use a keypad to enter new callee canonical telephone numbers into the telephone directory, or may manually enter a non-canonical callee telephone number.
Cosine Similarity : 0.009850872941178292

Patent Key: 5287514
Text: Method and system for customizing a user interface in a computer system

Methods for allowing a user to customize an interface for a computer program are provided The methods allow a user of the computer program flexibility in organizing commands into a menu structure The methods also allow a user of a computer program to assign a keystroke sequence to a command. The user can then invoke the command by entering the keystroke sequence. A command assigned to a keystroke sequence does not need to be associated with a menu. The methods allow the user of a computer program to predefine parameters for commands. The predefinition allows the user to invoke a command without reentering the parameters. In a preferred embodiments, the methods use a command array that contains an entry for each command. The methods use an array associated with each menu. The arrays contain unique identifiers of the commands that are associated with the menu. These unique identifiers are used to reference entries into the command array. The entries in the command array include a reference to the program code that implements the commands.
Cosine Similarity : 0.009594262677372602

Patent Key: 5561786
Text: Computer method and system for allocating and freeing memory utilizing segmenting and free block lists A method and system for allocating and freeing memory is provided. A requesting program running on a computer system allocates a logically contiguous block of memory (a "heap") for the temporary storage of data structures. A Heap Manager, provided by the present invention, manages the heap in response to requests from the requesting program. The Heap Manager logically divides the heap into segments and maintains a free list for each segment. The free list is a list of the free blocks contained in a segment. The heap has an associated free block array and an associated size tree. The free block array contains entries, each entry pointing to a free list. Each leaf node of the size tree corresponds to entries in the free block array. A value contained in each leaf node indicates the size of the largest free block in the segments corresponding to the entries. The Heap Manager selects a free block for allocation to the requesting program by searching to size tree and the free block array and selecting segment that contains a free block that will satisfy the request, and then searching the free list corresponding to the selected segment to locate the smallest free block that satisfies the request.
Cosine Similarity : 0.009268903263934564

Patent Key: 5517257
Text: Video control user interface for interactive television systems and method for controlling display of a video movie A video control user interface is provided for use in an interactive television system. The video control user interface includes a remote control handset with a multi-purpose, multi-direction actuation pad and a set-top box configured to operate in different modes, including a movie-on-demand mode. In this mode, the set-top box receives digitally transmitted video data streams of a selected movie from a centralized head end server. During display of a video movie, the set-top box can cause, at the viewer's request, the television to display an icon representing a physical

layout of the actuation pad on the remote control handset and one or more symbols arranged at locations relative to the icon. The symbols relate to shuttle controls for controlling viewing of the video movie. This user interface presents an intuitive visual mapping of the shuttle controls about the depicted icon onto physical actuation positions of the multi-direction pad on the remote control handset. When the viewer wishes to change the viewing mode (such as from "play" to "pause"), the viewer simply depresses the pad at an actuation position that corresponds to a desired shuttle control symbol arranged at approximately the same location relative to the pad-resembling icon that is displayed on the screen. This user interface provides intuitive video control using a multi-purpose actuator, thereby eliminating the need for dedicated shuttle control buttons on the remote control handset.
Cosine Similarity : 0.008867180885147638

Patent Key: 5426729
Text: Method and system for nonuniformly adjusting a predefined shape A method and system for adjusting at position of an adjustable portion of a predefined shape. The predefined shape is displayed on a display with an adjust handle positioned near a reference point on the predefined shape. The position of the adjustable portion of the predefined shape is then adjusted in accordance with user input to reposition the adjust handle. The predefined shape is then again displayed having the adjustable portion as adjusted by the user input. The user input is performed by a user positioning device, such as a mouse, by dragging the adjust handle to the desired location. The adjustable portion is predefined with respect to the predefined shape, and is made up of certain segments of the predefined shape that are likely to be altered. In some cases, only segments directly adjacent to a vertex of a predefined shape are adjusted. In some cases, segments symmetrically opposite to those segments are also adjusted.
Cosine Similarity : 0.008511314687293261

Patent Key: 5586318
Text: Method and system for managing ownership of a released synchronization mechanism A method and system for managing ownership of a released synchronization mechanism is provided. In a preferred embodiment, a number of entities, such as threads, are attempting to acquire the synchronization mechanism when the synchronization mechanism becomes available. Each of the entities has a priority indicator that indicates the relative urgency of the attempt by the entity to acquire the synchronization mechanism. The method and system first identifies one of the entities attempting to acquire the synchronization mechanism that has the priority indicator that indicates that its attempt to acquire the synchronization mechanism is of the highest urgency. The method and system then determines whether any entity attempted to acquire the synchronization mechanism during a foregoing selected period of time. If an entity has attempted to acquire the synchronization mechanism during the selected period of time, then the method and system assigns ownership of the synchronization mechanism to the identified entity. If no entity has attempted

to acquire the synchronization mechanism during the selected period of time, then the method and system defers the assignment of ownership of the synchronization mechanism to a later time.
Cosine Similarity : 0.0075261792107526775

Patent Key: 5561788
Text: Method and system for executing programs using memory wrap in a multi-mode microprocessor Improved methods and operating systems for use with a multi-mode microprocessor enable efficient operation in a multi-mode environment. Preferred embodiments for use with microprocessors which were not designed to switch from each mode to another mode enable multi-tasking of a mixture of programs written for different modes using the mode switching methods of the present invention. Frequently used portions of the operating system are stored in memory at locations which can be commonly addressed in all modes. Device for handling device drivers and interrupts in all modes are also provided. Preferred embodiments for use with computer systems using microprocessors such as the Intel 80286 include device for storing the operating system routines to maximize performance of the system in real mode. Auxiliary protection hardware and I/O masking hardware are also provided in alternate preferred embodiments to enhance protection during real mode operation of such systems. Device for handling interrupts in a mode switching environment and alternate embodiments to eliminate problems caused by hooking programs in a multi-tasking environment are also provided.
Cosine Similarity : 0.0071535431341672034

Patent Key: 5027273
Text: Method and operating system for executing programs in a multi-mode microprocessor Improved methods and operating systems for use with a multi-mode microprocessor enable efficient operation in a multi-mode environment. Preferred embodiments for use with microprocessors which were not designed to switch from each mode to another mode enable multi-tasking of a mixture of programs written for different modes using the mode switching methods of the present invention. Frequently used portions of the operating system are stored in memory at locations which can be commonly addressed in all modes. Means for handling device drivers and interrupts in all modes are also provided. Preferred embodiments for use with computer systems using microprocessors such as the Intel 80286 include means for storing the operating system routines to maximize performance of the system in real mode. Auxiliary protection hardware and I/O masking hardware are also provided in alternate preferred embodiments to enhance protection during real mode operation of such systems. Means for handling interrupts in a mode switching environment and alternate embodiments to eliminate problems caused by hooking programs in a multi-tasking environment are also provided.
Cosine Similarity : 0.007127234267751848

Patent Key: 5467472
Text: Method and system for generating and maintaining property sets with unique format identifiers A method and system for generating and maintaining property sets is provided. In a preferred embodiment, a property set stream is generated. The stream comprises three parts: a header, a section locator array, and one or more sections. The header contains information for uniquely identifying the property set and for identifying the number of sections within the property set. The section locator array contains a unique identifier for each section and an offset indicating where the section resides within the stream. The third part, the section definitions, contains the information necessary to maintain groups of properties for each section. Each section contains a section header, a property locator array, and an array of property type/value pairs. The section header indicates both the size of the section and the number of properties defined within the section. The property locator array contains unique property identifiers for each property defined in the section and a relative offset, from the beginning of the section, to the property definition. Each property definition appears as a type/value pair, the type indicator indicating the data format for the property and the value field containing or referencing the data. In a preferred embodiment, a property set is generated by allocating appropriate storage and by storing values in the standard structure for a property set.
Cosine Similarity : 0.00667526393905581

Patent Key: 5475743
Text: System and method for processing telephone numbers A system and method using canonical telephone numbers which allows automatic calling with any location in the world independent of the caller's location. The caller canonical telephone number and a plurality of caller prefixes are stored within the system. A telephone directory stores a plurality of callee canonical telephone numbers for locations throughout the world. The caller manually enters a callee telephone number or selects a callee telephone number from the telephone directory. The system determines if the callee telephone number is a canonical telephone number. The system expands non-canonical telephone numbers to canonical form using known telephone numbering rules for various countries. The system uses the callee canonical telephone number and the caller canonical telephone number to determine which digits of the callee canonical telephone number must be placed on the telephone line to complete the call. The system then adds the appropriate prefix for international, long distance, or local telephone calls to generate a final callee telephone number.
Cosine Similarity : 0.006653778594416567

Patent Key: 5590336
Text: Method and apparatus for performing overlapping service of multiple IDE peripheral devices A method and apparatus for performing overlapping service of requests to two peripheral devices, specifically a CD-ROM drive and a hard disk drive connected to a computer. When a read request is issued to the CD-ROM drive, a seek is immediately initiated. A timer, with a period much shorter than

the typical seek time of a CD-ROM drive, is started and any requests to the peripheral hard disk drive are initiated. When the timer times out and when the hard disk request is complete, an inquiry is made to determine whether the CD-ROM drive has finished seeking. This inquiry is accomplished by determining the status of a bit set by the CD-ROM drive in a register in the computer when the CD-ROM drive has finished seeking. If the bit is set, indicating the CD-ROM seek is complete, the data transfer request is immediately issued to the CD-ROM drive. If the bit is not set, indicating the CD-ROM seek is not complete, the timer is reset and the service of hard disk drive requests continues.
Cosine Similarity : 0.006440994128062138

Patent Key: 5442793
Text: Method and system for locating an inherited virtual function member of a derived class A mechanism for locating and calling an appropriate member function to process a message or command in an event-based system is provided. An object data structure contains data members and a pointer to a virtual function table. The virtual function table contains pointers to member functions associated with the object. The virtual function table contains a pointer to a member function that returns the address of a message map. The message map contains two entries: a pointer to a base message map and a pointer to an array of message map entries. The array of message map entries contains the addresses and parameters of member functions. A default window procedure member function searches the array of message map entries to locate a desired member function. If the desired member function is not located in the array of message map entries for the derived class, then the window procedure member function searches the array of message map entries for the base class of the derived class.
Cosine Similarity : 0.006287844643799801

Patent Key: 5274751
Text: System and method for printing graphic objects A system and method for converting coordinates on a computer graphics system so that objects drawn on a computer display screen will have the dimensions and location intended by the user when the object is printed. The user draws lines on the display screen, with the lines being aligned with marks on rulers which are also displayed along each axis of the display screen. The ruler marks are labeled in units, such as millimeters, which are often impossible to accurately display on the computer screen. The system then converts the coordinates to a high resolution coordinate system value that corresponds to the position and size of the object in relation to the labeled marks on the ruler. When the display screen is printed, the object is printed in accordance with the labels on the rulers rather than the displayed image of the object on the computer screen. Similarly, the high resolution value for the intended length of the object is used to display the image on the screen relative to the ruler when the object is moved about on the screen. The method may be easily implemented on a computer using graphics or desktop publishing software.

Cosine Similarity : 0.006029878378837356

Patent Key: 5574920
Text: Method for controlling power down of a hard disk drive in a computer An integrated device electronics (IDE) driver 40 operating in conjunction with a Basic Input/Output System (BIOS) driver (14), wherein both the IDE driver (40) and BIOS driver (14) are capable of powering down a hard disk drive (18). The IDE driver (40) monitors accesses to an alternate status register (32) by the BIOS driver (14). Upon detecting an access to the alternative status register (32), the IDE driver (40) commences writing any uncommitted data to the hard disk drive (18). The IDE driver (40) inhibits power down by the BIOS driver (14) until it finishes committing any uncommitted data to the hard disk drive (18). After all uncommitted data is committed to the hard disk drive (18), the BIOS driver (14) is permitted to power down the hard disk drive (18). A timer is set to reactivate the IDE driver (40). If the hard disk drive (18) was put to sleep, a reset from the BIOS driver (14) must occur before the IDE driver (40) can access the hard disk drive (18). If the hard disk drive (18) was placed in standby mode, the IDE driver (40) can reactivate and access the hard disk drive (18). In either case, the IDE driver (40) queues request for access to the hard disk drive (18) until such request can be performed after the hard disk drive (18) is powered-up.
Cosine Similarity : 0.005971533677249905

Patent Key: 5499369
Text: Method and system for connecting objects using alert and running states Method and system for connecting link object to a link source. In a preferred embodiment, a source process registers the link source in a running object table when the link source enters a running state. When a consumer process subsequently puts a container object containing the link object in a running state, the consumer process determines if the link source is registered in the running object table. If the link source is registered in the running object table, then a connection is established between the link object and the link source. If, however, the link source is not registered, then the consumer process registers the link object in an alert object table. When a source process subsequently puts the link source in the running state, the source process determines if the link object is registered in the alert object table. If the link object is registered in the alert object table, then the source process notifies the link object and a connection is established between the link object and the link source.
Cosine Similarity : 0.005569344908928017

Patent Key: 5187468
Text: Pointing device with adjustable clamp attachable to a keyboard A pointing device which is removably attachable to a keyboard is disclosed. The pointing device is coupled to an attachment assembly, the attachment assembly being

removably and selectively attachable to the keyboard. The attachment assembly includes a clamp and a tilting assembly. The clamp includes a variable width clamp to permit the pointing device to be attached to any one of a number of different keyboards or in different positions on the same keyboard. The tilting assembly permits the user to select whether the pointing device is in a horizontal, vertical or other orientation. A rotatable ball of the pointing device is retained in contact with the rotation sensing encoders regardless of the orientation of the housing. The buttons for activating switches to enter commands into the computer overlap a top portion and a side portion of the pointing device. The switches are activated by a user pressing downward on the top region or inward from the side region.
Cosine Similarity : 0.005322888145755156

Patent Key: 5539471
Text: System and method for inserting and recovering an add-on data signal for transmission with a video signal A system and method for inserting a data signal into a preexisting video signal in a transmitter so that the data signal is transmitted along with the video signal. The data signal is inserted into an unused portion of the video signal spectrum. The data signal is separated from the video signal in a receiver and may be used for any purpose, even purposes unrelated to the video signal. The data signal is filtered to create a filtered data signal having spectral characteristics that correspond to the unused portion of the video signal spectrum. The filtered signal modulates a carrier signal whose frequency is selected to permit direct insertion of the modulated filtered data signal into the video signal spectrum. In the receiver, the video signal is processed in a normal manner; and the data signal is undetected by normal television receivers. A signal separator separates the filtered data signal from the combined video signal, and an inverse filter recovers the original data signal. In one embodiment, a comb filter is used to generate the filtered data signal with 60 Hertz peaks. An inverse comb filter in the receiver recovers the original data signal. A recirculating buffer may also be used to generate the filtered data signal.
Cosine Similarity : 0.005198313932073694

Patent Key: 5432924
Text: Method and system for selectively applying an appropriate object ownership model A method and system for applying an appropriate object ownership model is provided. In a preferred embodiment, an operating system selectively applies an object ownership model with which running programs are compatible. This permits programs designed to be used with operating systems that do not apply a rigorous object ownership model to be used with an operating system capable of applying a rigorous object ownership model. The method and system has both an automatic object deallocation phase and an object access control phase. In the automatic deallocation control phase, the method and system defers the automatic deallocation of objects owned by programs that are incompatible with automatic object deallocation until a later time at which no such programs are still

running. Instead of immediately deallocating the objects owned by a terminating program, the method and system designates them for deferred deallocation. At a later time, the method and system checks to see whether any programs that are incompatible with automatic object deallocation are still running, and, if none are, the method and system deallocates all objects designated for deferred deallocation. In the object access control phase, the method and system allows special permissive access to objects owned by programs that are unable to authorize access to the object by other programs. Instead of denying access by a requesting program to an object owned by a program that is unable to authorize access to the object by other programs because it has not authorized any other programs to access the object, the method and system allows the requesting program to access the object.
Cosine Similarity : 0.004404104095376609

Patent Key: 5583981
Text: Method and system for changing the size of edit controls on a graphical user interface A method and system for resizing edit controls of a graphical user interface that in previous systems were of a fixed size. The preferred steps of the resize operation entail moving a mouse cursor over a designated portion of the edit control, activating a mouse button, and dragging a border of the edit control to a new location on the user interface. Upon recognition of these steps, an operating system generates messages indicating that a resize operation is requested. An application retrieves the message from the operating system and sends the message to an application edit control code. Before the message reaches the application edit control code, it is hooked by resize edit control code, which resizes the edit control in response to the messages. In this way, edit controls that in previous systems were fixed in size can, under the preferred embodiment, be resized. Subsequent use of the edit control after resizing allows data to be received and displayed in an improved manner.
Cosine Similarity : 0.003910078310660356

Patent Key: 5581686
Text: Method and system for in-place interaction with contained objects A computer method and system for interacting with a containee object contained within a container object. In a preferred embodiment of the present invention, the container object has a container application with a container window environment that has container resources for interacting with the container object. The containee object has a server application with a server window environment with server resources for interacting with the containee object. The method of the present invention displays the container window environment on a display device. A user then selects the containee object. In response to selecting the containee object, the method integrates a plurality of the server resources with the displayed container window environment. When a user then selects a server resource, the method invokes the server application to process the server resource selection. Conversely, when a user selects a container resource, the method invokes the container application to process the container

resource selection.
Cosine Similarity : 0.003717020786465403

Patent Key: 5499334
Text: Method and system for displaying window configuration of inactive programs A method and system for managing window configurations of a desktop configuration is provided. In a preferred embodiment of the present invention, a TopDesk system persistently saves the window configurations of currently-active programs of the computer system. These saved window configurations compose a saved desktop configuration. The TopDesk system displays within its window a representation of the saved desktop configuration. Each saved window configuration is displayed as a rectangle (called a ghost window) that is representative of the size and location of the saved window configuration. Each displayed rectangle preferably contains the title of the actual window for the corresponding program. The TopDesk system allows a user to move the displayed rectangles to modify the saved desktop configuration. The TopDesk system allows a user to activate a saved desktop configuration. During this activation process, the TopDesk system activates any currently-inactive programs that are associated with a saved window configuration and sets the actual window configuration of the program to the saved window configuration. Thus, a user can persistently save desktop configurations and efficiently activate a desktop configuration.
Cosine Similarity : 0.0034753861144430137

Patent Key: 5561751
Text: System and method for displaying a color image using vector error diffusion A method and system for displaying a color image with a display device using vector error diffusion. Each pixel of the color image is represented by an active color vector, which typically, but not necessarily, is an RGB (red, green, blue) triplet. Often, the display device cannot display the exact color vector desired, so it displays the closest active color to the desired color, thereby resulting in an error vector for each pixel. The method computes the error vector by vector subtracting a color vector representing the active color displayed from the color vector of the desired color. The computed error vector is diffused to adjacent pixels by adjusting the color vectors of the adjacent pixels by fractions of the computed error value. Preferably, the method characterizes each color that can be displayed on the display device by measuring the color directly using a colorimeter which eliminates errors caused by non-linear combinations of the color coordinates of the color vectors. Preferably, the method also adjusts the desired color vector for each pixel to compensate for color bleeding between pixels.
Cosine Similarity : 0.0032287907736743087

Patent Key: 5485617
Text: Method and system for dynamically generating object connections A method

and system for dynamically generating object connections is provided. In a preferred embodiment, a connection can be generated between a source object and a sink object using a connection point object. A source object has connection point objects where each connection point object corresponds to a particular interface. A sink object implements one or more notification interfaces for connecting to a source object. A connection point object of a source object can connect to multiple notification interfaces, which belong to one or more sink objects. A connection point object keeps track of pointers to the notification interfaces to which it has been connected. In order to generate a connection, a sink object requests from a source object a connection point object corresponding to a particular interface. The source object determines whether it supports such a connection point object, and if so returns a pointer to the connection point interface of the determined connection point object. The sink object then requests to be connected to the connection point object using the returned connection point interface pointer and passes a reference to a notification interface of the sink object corresponding to the particular interface. The connection point object then stores the reference to the notification interface of the sink object, creating a connection between the sink object and the source object. At some later time, the source object can utilize the connection to notify the sink object through the connected notification interfaces.
Cosine Similarity : 0.002520544821938711

Patent Key: 5559884
Text: Method and system for generating and auditing a signature for a computer program A method and system for generating and auditing a signature for executable modules are provided. A signature is a means that uniquely identifies an authorized copy of the executable module. The signature of each authorized copy is encoded within the order of instructions of the executable module. Each executable module is made up of multiple blocks of instructions. To place a signature within the executable module, a group of blocks having a flow of execution is selected from the executable module. The group of blocks is then reordered to form a signature for the executable module. To ensure that the reordered group of blocks has the same flow of execution, the blocks within the reordered group of blocks are modified to maintain the flow of execution. The reordered group of modified blocks replaces the unmodified group of blocks within the authorized copy of the executable module. The modified copy of the executable module executes in a manner that is functionally equivalent to the unmodified executable module. However, the reordered blocks provide a signature that is unique to each authorized copy. By inspecting the order of the group of blocks in a copy of the executable module, the signature can be determined, and thus it can be determined from which authorized copy the executable module derives.
Cosine Similarity : 0.002438055218906385

Patent Key: 5125087

Text: Method of resetting sequence of access to extended memory disrupted by interrupt processing in 80286 compatible system using code segment register A method and system for allowing an interrupted computer program to detect the occurrence of an interrupt. In a preferred embodiment, a system according to the present invention allows an Intel 80286-compatible based computer program executing in real mode to detect the occurrence of an interrupt during the execution of a set of instructions. According to a preferred method of the present invention, the LOADALL instruction is used to load the code segment selector with the segment address of the code in the interrupted routine to be executed upon return from an interrupt and to load the code segment base address with the segment base address of the set of instruction during whose execution interrupt is to be detected. A preferred method then executes the set of instructions. Upon occurrence of an interrrupt, the preferred method saves the value in the code segment selector and executes an interrupt routine. Upon return from the interrupt routine, a preferred method loads the code segment base address based on the saved code segment value so that the interrupted routine resumes execution at an instruction other than the interrupted instruction. The methods of the present invention allow a program executing in real mode to access data in extended memory with interrupts enabled.
Cosine Similarity : 0.0018398595494220646

Patent Key: 5303151
Text: Method and system for translating documents using translation handles A translation assistance program of a word processing program used to translate a source language document written in a source language to a target language document written in a target language. The translation assistance program displays the source language document on a translation screen portion of a display device. The translation assistance program then compares each source term in a product glossary with the source terms in the source language document. The product glossary associates each source term it stores with a target term which translates the source term into the target language. For each source term from the source language document which is stored in the product glossary, the translation assistance program: 1) underlines the source term in the source language document, 2) inserts a translation handle on the translation screen portion immediately after the source term, and 3) associates the translation handle with the target term which translates the source term into the target language. When the user decides to insert the target term at a current insertion point on the translation screen, the user invokes an insert target term command which contains the translation handle associated with the appropriate source term. In response, the translation assistance program retrieves the target term associated with the translation handle and inserts the target term at the current insertion point on the translation screen portion.
Cosine Similarity : 0.0016831475069489029

Patent Key: 5495571
Text: Method and system for performing parametric testing of a functional

programming interface The present invention provides a method and system for performing parametric testing of a functional programming interface. Parametric testing of a function verifies that the function performs as expected when a valid or an invalid parameter is passed to the function. To perform parameter testing on a function, the present invention receives as input prototype information for the function, and then formulates a testing plan. The invention tests the function according to the testing plan. The testing plan specifies a list of invalid and valid values for each parameter of the function. The invention repeatedly invokes the function, each time passing the function various combinations of invalid and valid values. The function passes the test when (1) the function does not return an error code for any combination of valid parameter values and (2) the function returns an error for any combination of parameter values that include an invalid parameter value.
Cosine Similarity : 0.0015776302222247198

Patent Key: 5526485
Text: Just-in-time debugging system and methods under the windows 3.0 and windows 3.1 operating systems The invention includes systems and methods for debugging an application program running under an operating system such as Windows.RTM. 3.0 or 3.1. Such an operating system allows registration of callback functions with an operating system exception handler. The operating system exception handler calls the registered callback functions in response to an exception generated by the application program until one of the callback functions indicates that the exception has been resolved. The invention includes a monitor program which is installed in program memory concurrently with the application program. The monitor program registers itself with the operating system exception handler to be called in response to an exception generated by the application program. When called, the monitor callback function finds the startup parameters of the application program which generated the exception and starts a debugging program, using the startup parameters. The debugging program, in accordance with normal characteristics of debugging programs, registers itself with the operating system exception handler and then yields to the operating system. The monitor program returns control to the operating system without indicating that the exception has been resolved. Thereafter, the exception handler calls the registered debugging program to initiate debugging of the application program which generated the exception.
Cosine Similarity : 0.0014944925741833613

Patent Key: 5398120
Text: Ordered dither image rendering with non-linear luminance distribution palette A high color resolution image is accurately approximated with a low resolution image through ordered dithering to colors of a displayable color palette. The colors of the displayable color palette are located at points of a grid aligned with three orthogonal axes in a three dimensional color model, including a luminance axis between black and white. The grid points are defined by the intersections of three sets of parallel planes, each set being

perpendicular to one of the three axes. The set of planes perpendicular to the luminance axis are spaced nonuniformly, preferably according to a cubic model. The ordered dithering maps the true color of a pixel in the image to the color in the displayable palette at one of eight adjacent grid points. When ordered dithering of a pixel's true color would map the true color to a grid point outside the color gamut, the pixel is instead mapped to the nearest color on the color gamut's border to the grid point.
Cosine Similarity : 0.0014596783183028954

Patent Key: 5268675
Text: Computer command and pointing device with multi-axis engagement assembly A computer command and pointing device that attaches directly to the computer or keyboard without the need for external electrical cables. A BallPoint.TM. mouse has a multi-axis mechanical engagement assembly that allows the mouse to be inserted into a recess in the computer or keyboard and have its weight fully supported by the engagement assembly. The engagement assembly provides tight mechanical coupling between the mouse and the recess, but permits the disconnection of the mouse if excessive force is applied to the mouse. The engagement assembly includes an electrical connector that permits the coupling of electrical signals between the mouse and the computer. The connector pins in the electrical connector are individually spring-loaded to allow the connector pins to recede into the electrical connector when force is applied. A mating electrical connector plate, mounted within the recess, is a flat plate made of an insulating material with electrically conductive pads on the surface thereof. The connector pins of the electrical connector electrically couple electrical signals between the mouse and the computer when the engagement assembly mechanically couples the mouse into the recess. The electrical connector does not require precise alignment of the engagement assembly when installing or removing the mouse. If excessive force is applied to the mouse, it disconnects from the recess without damaging the mouse or the computer.
Cosine Similarity : 0.0