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\* Justin Mendes

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\* Unit 5 Activity 1 Program/Question 1

\* This program will use a binary search to display the first few words of a certain passage

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**import** javax.swing.JOptionPane;

**public** **class** Psalms

{

**public** **static** **void** main(String[] args)

{

//Variable Declarations and Initializations

**int** psalmNumber = Integer.*parseInt*(JOptionPane.*showInputDialog*(**null**,"Which psalm number would you like to see? (1-99):", "Psalm Passages", JOptionPane.***QUESTION\_MESSAGE***));

**int** psalmIndex[] = {2, 4, 7, 8, 12, 16, 18, 22, 23, 26, 29, 33, 37, 40, 44, 49, 58, 63, 68, 71, 81, 86, 94};

String psalmOutput[] = {"\nThe two ways", "\nThe messianic drama", "\nEvening prayer", "\nPrayer of the virtuous under persecution", "\nThe munificence of the creator", "\nAgainst a deceitful world",

"\nYahweh, my heritage", "\nSong of triumph for the king", "\nThe sufferings and hope of the virtuous man", "\nThe good shepherd", "\nPrayer of the blameless", "\nHymn to the lord of the storm",

"\nHymn to Providence", "\nThe fate of the virtuous and the wicked", "\nSong of praise and prayer for help", "\nNational lament", "\nThe futility of riches", "\nThe Judge of earthly judges",

"\nDesire for God", "\nNational song of triumph", "\nAn old man's prayer", "\nFor the feast of Tabernacles", "\nPrayer in ordeal"};

**int** psalmConnector;

**if**(*binarySearch*(psalmIndex, 0, psalmIndex.length - 1, psalmNumber) == **true**)

{

**for**(**int** i = 0; i < psalmIndex.length; i++)

{

**if**(psalmIndex[i] == psalmNumber)

{

psalmConnector = i;

JOptionPane.*showMessageDialog*(**null**, "Psalm " + psalmNumber + psalmOutput[psalmConnector]);

**break**;

}//end if

}//end loop

}//end if

**else**

{

JOptionPane.*showMessageDialog*(**null**, "Psalm number " + psalmNumber + " is not found in the file.");

}//end else

}//end main

**public** **static** **boolean** binarySearch(**int** psalmIndex[], **int** left, **int** right, **int** searchForPsalm)

{

//Variable Declarations and Initializations

**int** middle;

//Temporary print for learning purposes

**if** (left > right)

{

**return** **false**;

}//end if

middle = (left + right) / 2;

**if** (psalmIndex[middle] == searchForPsalm)

{

**return** **true**;

}//end if

**if** (searchForPsalm < psalmIndex[middle])

{

**return** *binarySearch*(psalmIndex, left, middle - 1, searchForPsalm);

}//end if

**else**

{

**return** *binarySearch*(psalmIndex, middle + 1, right, searchForPsalm);

}//end else

}//end method binarySearch()

}//end class



