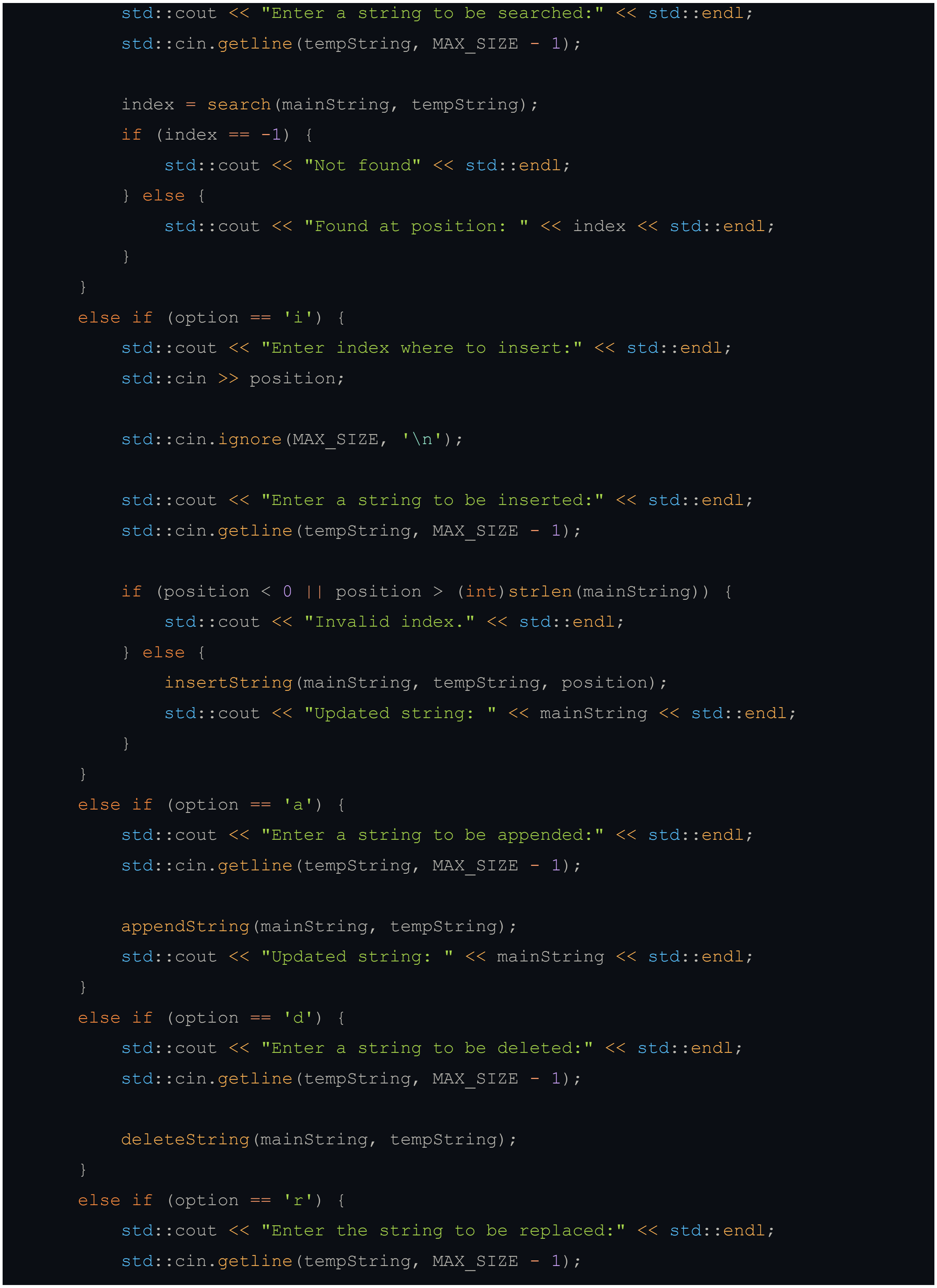
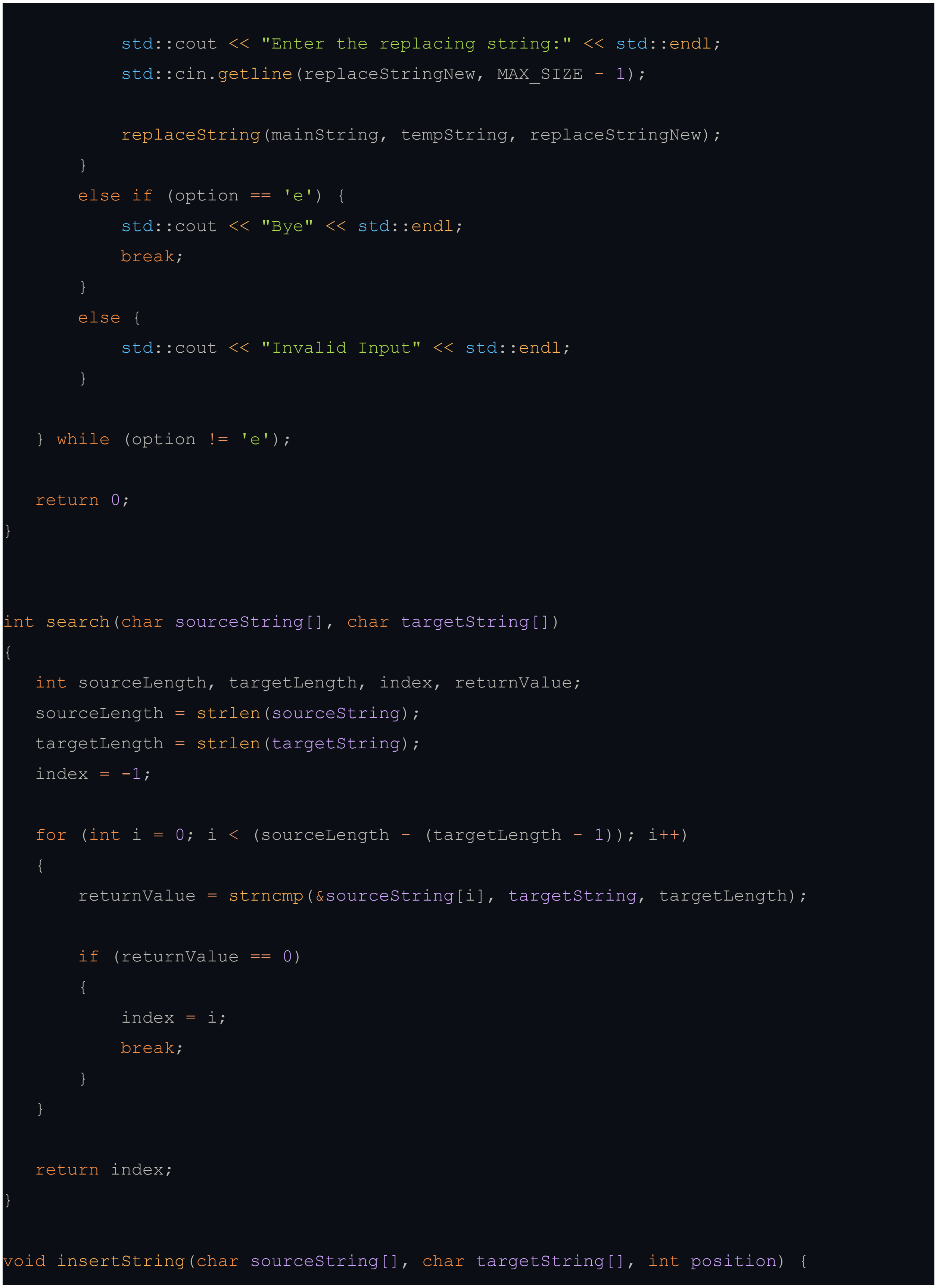
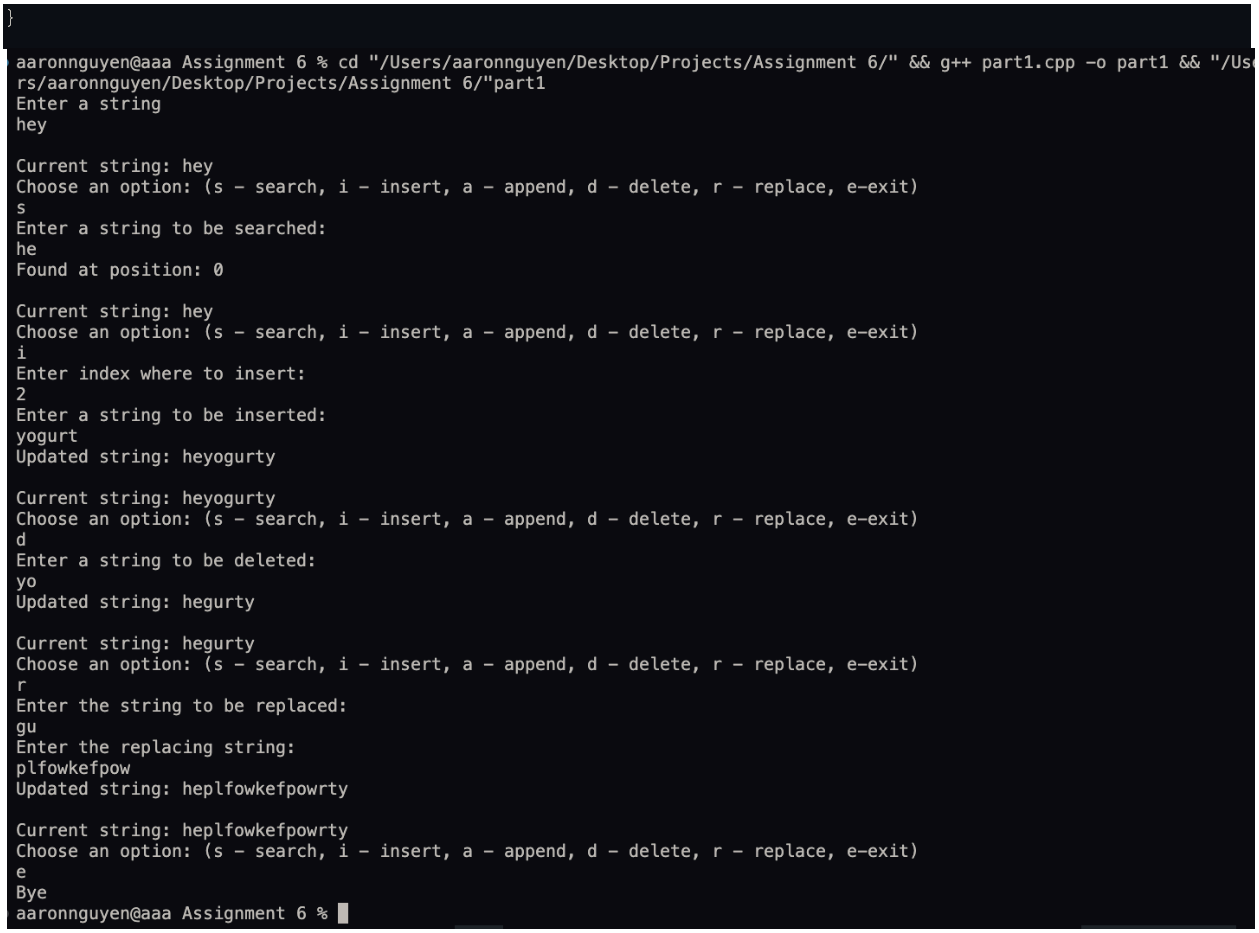
```
// ********************************
// Description: Using strings, make an algorithm to allow the user to edit a string
// Author: AAron Nguyen
// COMSC-165-5065
// Date: October 22, 2025
// Status: Complete
// ********************************

#include <cstring>
#include <iostream>
#include <cstdlib>

int search(char sourceString[], char targetString[]);
void insertString(char sourceString[], char targetString[], int position);
void appendString(char sourceString[], char targetString[]);
void deleteString(char sourceString[], char targetString[]);
void replaceString(char sourceString[], char toReplace[], char replaceWith[]);

const int MAX_SIZE = 100;

int main() {

   char option;
   char mainString[MAX_SIZE];
   char tempString[MAX_SIZE];
   char replaceStringNew[MAX_SIZE];
   int index;
   int position;

   std::cout << "Enter a string" << std::endl;
   std::cin.getline(mainString, MAX_SIZE - 1);

   do {
       std::cout << "\nCurrent string: " << mainString << std::endl;
       std::cout << "Choose an option: (s - search, i - insert, a - append, d -
delete, r - replace, e-exit)" << std::endl;

       std::cin >> option;

       std::cin.ignore(MAX_SIZE, '\n');

       if (option == 's') {
```



```
            std::cout << "Enter a string to be searched:" << std::endl;
            std::cin.getline(tempString, MAX_SIZE - 1);

            index = search(mainString, tempString);
            if (index == -1) {
                std::cout << "Not found" << std::endl;
            } else {
                std::cout << "Found at position: " << index << std::endl;
            }
        }
        else if (option == 'i') {
            std::cout << "Enter index where to insert:" << std::endl;
            std::cin >> position;

            std::cin.ignore(MAX_SIZE, '\n');

            std::cout << "Enter a string to be inserted:" << std::endl;
            std::cin.getline(tempString, MAX_SIZE - 1);

            if (position < 0 || position > (int)strlen(mainString)) {
                std::cout << "Invalid index." << std::endl;
            } else {
                insertString(mainString, tempString, position);
                std::cout << "Updated string: " << mainString << std::endl;
            }
        }
        else if (option == 'a') {
            std::cout << "Enter a string to be appended:" << std::endl;
            std::cin.getline(tempString, MAX_SIZE - 1);

            appendString(mainString, tempString);
            std::cout << "Updated string: " << mainString << std::endl;
        }
        else if (option == 'd') {
            std::cout << "Enter a string to be deleted:" << std::endl;
            std::cin.getline(tempString, MAX_SIZE - 1);

            deleteString(mainString, tempString);
        }
        else if (option == 'r') {
            std::cout << "Enter the string to be replaced:" << std::endl;
            std::cin.getline(tempString, MAX_SIZE - 1);
```

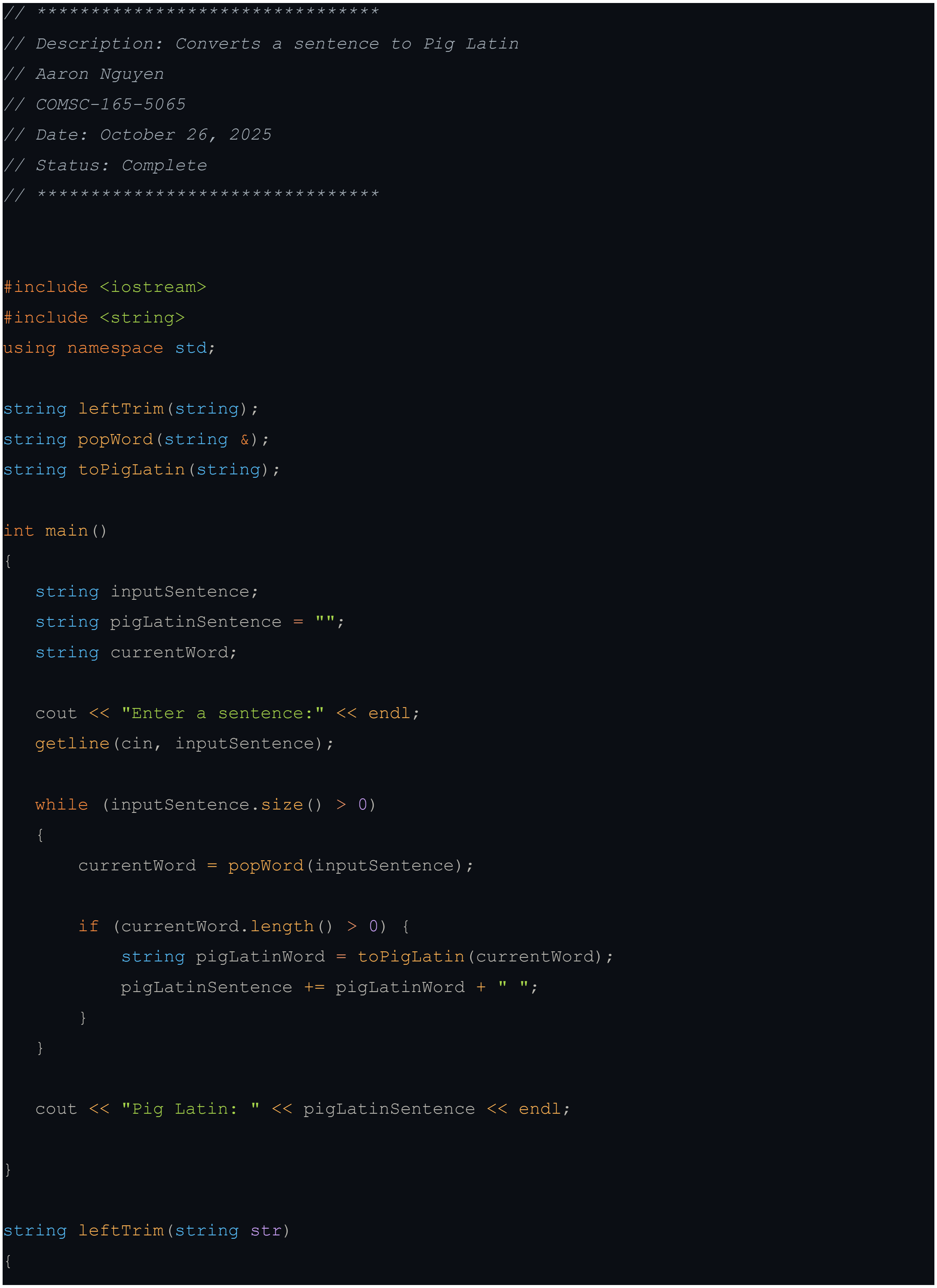


```
           std::cout << "Enter the replacing string:" << std::endl;
           std::cin.getline(replaceStringNew, MAX_SIZE - 1);

           replaceString(mainString, tempString, replaceStringNew);
       }
       else if (option == 'e') {
           std::cout << "Bye" << std::endl;
           break;
       }
       else {
           std::cout << "Invalid Input" << std::endl;
       }

   } while (option != 'e');

   return 0;
}


int search(char sourceString[], char targetString[])
{
   int sourceLength, targetLength, index, returnValue;
   sourceLength = strlen(sourceString);
   targetLength = strlen(targetString);
   index = -1;

   for (int i = 0; i < (sourceLength - (targetLength - 1)); i++)
   {
       returnValue = strncmp(&sourceString[i], targetString, targetLength);

       if (returnValue == 0)
       {
           index = i;
           break;
       }
   }

   return index;
}

void insertString(char sourceString[], char targetString[], int position) {
   char tempTail[MAX_SIZE];
   strcpy(tempTail, &sourceString[position]);
   strcpy(&sourceString[position], targetString);
   strcat(sourceString, tempTail);
}

void appendString(char sourceString[], char targetString[]) {
   strcat(sourceString, targetString);
}

void deleteString(char sourceString[], char targetString[]) {
    int index = search(sourceString, targetString);

   if (index == -1) {
       std::cout << "Not found" << std::endl;
   } else {
       int lenToDelete = strlen(targetString);

       if (sourceString[index + lenToDelete] == ' ') {
           lenToDelete++;
       }

       strcpy(&sourceString[index], &sourceString[index + lenToDelete]);
       std::cout << "Updated string: " << sourceString << std::endl;
   }
}

void replaceString(char sourceString[], char toReplace[], char replaceWith[]) {
   int index = search(sourceString, toReplace);

   if (index == -1) {
       std::cout << "String to be replaced, Not found" << std::endl;
   } else {
       char tempTail[MAX_SIZE];
       int lenToReplace = strlen(toReplace);

       strcpy(tempTail, &sourceString[index + lenToReplace]);
       strcpy(&sourceString[index], replaceWith);
       strcat(sourceString, tempTail);

       std::cout << "Updated string: " << sourceString << std::endl;
   }
```



```
}
```

```
aaronnguyen@aaa Assignment 6 % cd "/Users/aaronnguyen/Desktop/Projects/Assignment 6/" && g++ part1.cpp -o part1 && "/Use
rs/aaronnguyen/Desktop/Projects/Assignment 6/"part1
Enter a string
hey

Current string: hey
Choose an option: (s - search, i - insert, a - append, d - delete, r - replace, e-exit)
s
Enter a string to be searched:
he
Found at position: 0

Current string: hey
Choose an option: (s - search, i - insert, a - append, d - delete, r - replace, e-exit)
i
Enter index where to insert:
2
Enter a string to be inserted:
yogurt
Updated string: heyogurty

Current string: heyogurty
Choose an option: (s - search, i - insert, a - append, d - delete, r - replace, e-exit)
d
Enter a string to be deleted:
yo
Updated string: hegurty

Current string: hegurty
Choose an option: (s - search, i - insert, a - append, d - delete, r - replace, e-exit)
r
Enter the string to be replaced:
gu
Enter the replacing string:
plfowkefpow
Updated string: heplfowkefpowrty

Current string: heplfowkefpowrty
Choose an option: (s - search, i - insert, a - append, d - delete, r - replace, e-exit)
e
Bye
aaronnguyen@aaa Assignment 6 % 
```



```cpp
// ********************************
// Description: Converts a sentence to Pig Latin
// Aaron Nguyen
// COMSC-165-5065
// Date: October 26, 2025
// Status: Complete
// ********************************


#include <iostream>
#include <string>
using namespace std;

string leftTrim(string);
string popWord(string &);
string toPigLatin(string);

int main()
{
   string inputSentence;
   string pigLatinSentence = "";
   string currentWord;

   cout << "Enter a sentence:" << endl;
   getline(cin, inputSentence);

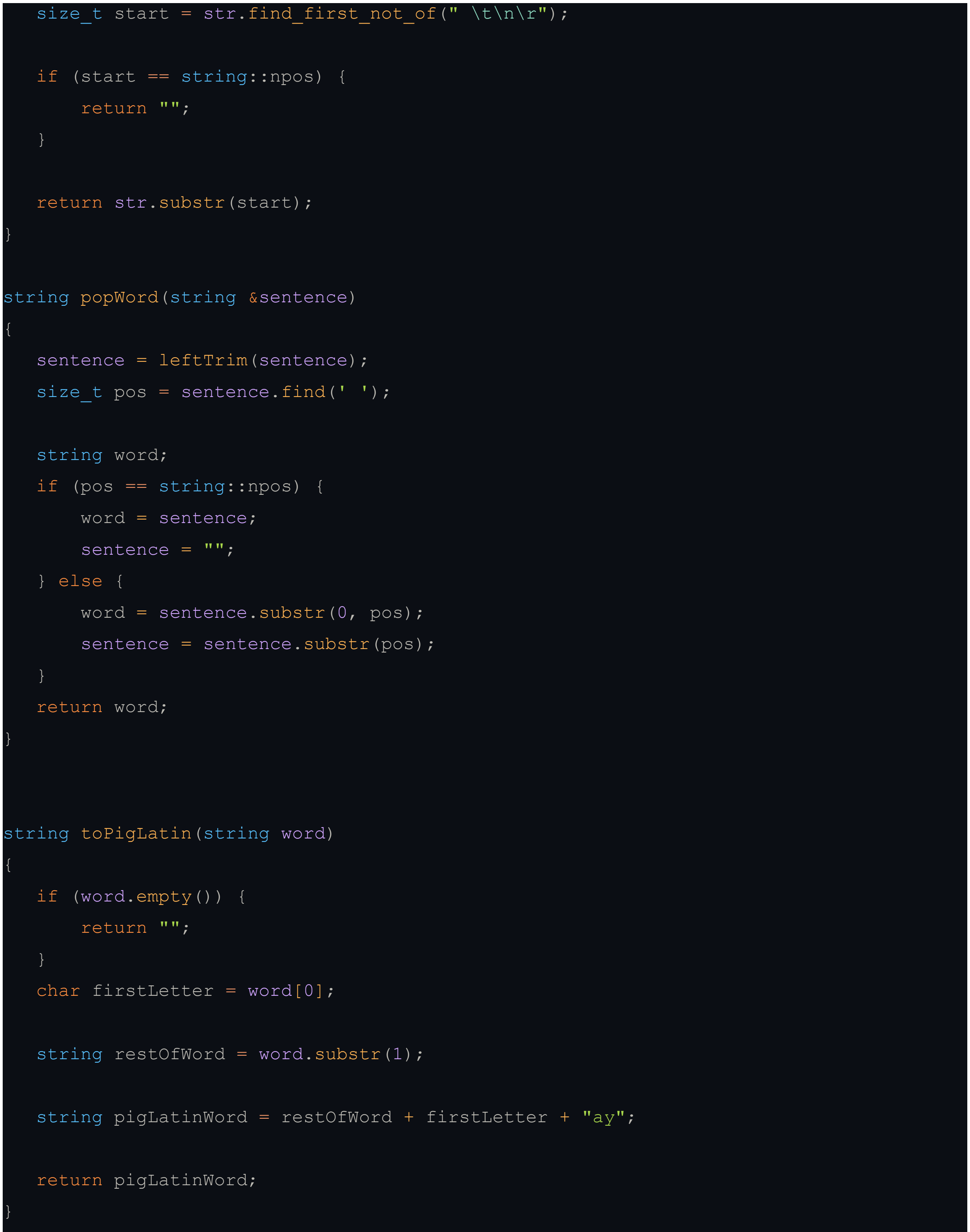
   while (inputSentence.size() > 0)
   {
       currentWord = popWord(inputSentence);

       if (currentWord.length() > 0) {
           string pigLatinWord = toPigLatin(currentWord);
           pigLatinSentence += pigLatinWord + " ";
       }
   }

   cout << "Pig Latin: " << pigLatinSentence << endl;

}

string leftTrim(string str)
{
```



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    size_t start = str.find_first_not_of(" \t\n\r");

    if (start == string::npos) {
        return "";
    }

    return str.substr(start);
}

string popWord(string &sentence)
{
    sentence = leftTrim(sentence);
    size_t pos = sentence.find(' ');

    string word;
    if (pos == string::npos) {
        word = sentence;
        sentence = "";
    } else {
        word = sentence.substr(0, pos);
        sentence = sentence.substr(pos);
    }
    return word;
}

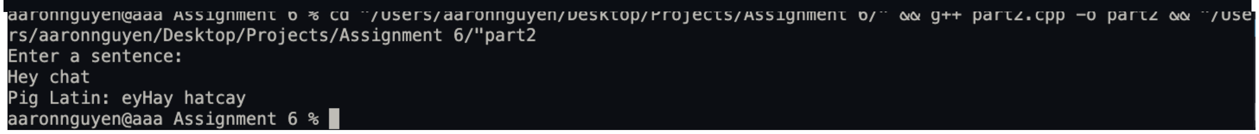


string toPigLatin(string word)
{
    if (word.empty()) {
        return "";
    }
    char firstLetter = word[0];

    string restOfWord = word.substr(1);

    string pigLatinWord = restOfWord + firstLetter + "ay";

    return pigLatinWord;
}
```



```
aaronnguyen@aaa Assignment 6 % cd "/Users/aaronnguyen/Desktop/Projects/Assignment 6/" && g++ part2.cpp -o part2 && "/Use
rs/aaronnguyen/Desktop/Projects/Assignment 6/"part2
Enter a sentence:
Hey chat
Pig Latin: eyHay hatcay
aaronnguyen@aaa Assignment 6 % 
```