# Lesson 10 Lab

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Task 1: To define a functions which takes three char\* (a, b, c) and then concatenate a and b to become a new string, put the string into c, you can assume both a and b have valid string and c is large enough. The prototype is as:

void my\_concat( const char \*a, const char \*b, char\* c);

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| void my\_concat(const char \*a, const char \*b, char\* c)  {      int lengthOfA = 0;      int lengthOfB = 0;      for (; a[lengthOfA]; lengthOfA++);      for (; b[lengthOfB]; lengthOfB++);        for (int x = 0; x < lengthOfA; x++)          c[x] = a[x];        for (int x = 0; x < lengthOfB; x++)          c[lengthOfA + x] = b[x];        c[lengthOfA + lengthOfB] = '\0';  } |

Task 2: To define a program to compare each pair of the strings and print the bigger one for each pair, using function **strcmp**

1. ”Az” and “aZ”
2. “ABCDEF” and “a”
3. “sushi-roll” and “unagi”

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| #include <stdio.h>  #include <string.h>  int main()  {      printf("Az vs. aZ: %s\n", strcmp("Az", "aZ") > 0 ? "Az" : "aZ");      printf("ABCDEF vs. a: %s\n", strcmp("ABCDEF", "a") > 0 ? "ABCDEF" : "a");      printf("sushi-roll vs. unagi: %s\n", strcmp("sushi-roll", "unagi") > 0 ? "sushi-roll" : "unagi");      return 0;  } |

Task 3: To define a program to find the second ‘a’ in string “apple-pineapple”, using function **strchr**, print “yes” if you found the second, print “no” otherwise.

[Challenge] Try to see whether you can print the index of the second ‘a’, if found

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| #include <stdio.h>  #include <string.h>  int main() {  const char \*str = "apple-pineapple";  const char \*first = strchr(str, 'a');  if (first) {  const char \*second = strchr(first + 1, 'a');  if (second) {  int index = second - str;  printf("yes\n");  printf("Index of second 'a': %d", index);  } else {  printf("no\n");  }  } else {  printf("no\n");  }  return 0;  } |

Task 4: To define a program which defines two integer arrays, and then copy array1 values into array2, using function memcpy

Note: give your array1 some initial values, for example:

int array1 [] = {1,2,3,4,5,6,7,8,9,0};

int array2[10];

[Hint: We can assume array1 and array2 have same length.]

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| #include <stdio.h>  #include <string.h>  int main() {      int array1[] = {1,2,3,4,5,6,7,8,9,0};      int array2[10];      memcpy(array2, array1, sizeof(array1));      for (int x = 0; x < 10; x++) {          printf("%d", array2[x]);      }      return 0;  } |

Task 5: To define a function which takes in two strings, and then prints the longer one, using strlen to understand which one to print

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| #include <stdio.h>  #include <string.h>  void printBigger(const char \*one, const char \*two)  {      if (strlen(one) > strlen(two))      {          printf("%s", one);          return;      }      printf("%s", two);  } |