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CSCD 437-01

Homework 4

**a.**

**// Ensure passed in arg is the correct size, and the copied string ends with \0**

int foo(char \*arg, char \*out) **// Add parameter size\_t n for max string size**

{

strcpy(out, arg); **// Change to strncpy(out, arg, n);**

**// Add a check for if n is max size (64 in this case), change out[63] = ‘\0’;**

  return 0;

}

int main(int argc, char \*argv[])

{

char buf[64];

  if (argc != 2)

  {

    fprintf(stderr, "a: argc != 2\n");

    exit(EXIT\_FAILURE);

}

**// Add variable size\_t len = strlen(argv[1]); for the length of the string passed in**

**// Add a check for if len > 64 then foo(argv[1], buf, 63);**

**// Else foo(argv[1], buf, len);**

foo(argv[1], buf);

  return 0;

}

**b.**

**// Ensure length variables are of type size\_t and space is left for ‘\0’**

int foo(char \*arg)

{

char buf[128];

  int len, i; **// Change int to size\_t**

  len = strlen(arg);

  if (len > 136) **// Change 136 to 126**

    len = 136; **// Change 136 to 126**

  for (i = 0; i <= len; i++)

    buf[i] = arg[i];

  return 0;

}

int main(int argc, char \*argv[])

{

  if (argc != 2)

  {

    fprintf(stderr, "b: argc != 2\n");

    exit(EXIT\_FAILURE);

  }

  foo(argv[1]);

  return 0;

}

**c.**

**// Ensure length variables are of size\_t and buf does not overrun allotted size**

int bar(char \*arg, char \*targ, int ltarg) **// Change Itarg type to size\_t**

{

int len, i; **// Change int to size\_t**

  len = strlen(arg);

  if (len > ltarg)

    len = ltarg;

  for (i = 0; i <= len; i++)

**// Add check if len is 126 then targ[127] = ‘\0’**

    targ[i] = arg[i];

  return 0;

}

int foo(char \*arg)

{

  char buf[128];

  bar(arg, buf, 140); **// Change 140 to 126**

  return 0;

}

int main(int argc, char \*argv[])

{

  if (argc != 2)

  {

    fprintf(stderr, "c: argc != 2\n");

    exit(EXIT\_FAILURE);

  }

  foo(argv[1]);

  return 0;

}

**d.**

**// Ensure length veriables are of type size\_t; use arglen instead of calling strlen**

int foo(char \*arg, short arglen) **// Change short to size\_t**

{

char buf[1024];

  int i, maxlen = 1024; **// Change int to size\_t**

  If (arglen < maxlen)

  {

    for (i = 0; i < strlen(arg); i++) **// Change strlen(arg) to arglen**

      buf[i] = arg[i];

  }

  return 0;

}

int main(int argc, char \*argv[])

{

  if (argc != 2)

  {

    fprintf(stderr, "d: argc != 2\n");

    exit(EXIT\_FAILURE);

  }

  foo(argv[1], strlen(argv[1]));

  return 0;

}