Name: KEY Id#

ICS 103, Term 083

Computer Programming in C

Quiz# 4

Date: Tuesday, August 25, 2009

**Find the output of each of the following programs:**

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| --- | --- |
| **Program** | **Output** |
| 1. **5 points**   **#include <stdio.h>**  **int test(int a[], int t, int n)**  **{**  **int i=0, j=-1, k=0;**    **while (!k && i < n) {**  **if (a[i] == t)k = 1;**  **else i++;**  **}**  **if (k) j=i;**    **return j;**  **}**  **int main(void)**  **{**  **int x[]={10, 5, 15, 20, 1};**    **printf("%d\n", test(x,15,5));**  **return 0;**  **}** | **2**  The function test is a linear search function and it is called to search for number 15 in array x and it returns its index which is 2. |
| 1. **5 points**     **#include <stdio.h>**    **int main(void)**  **{**  **int x[]={10, 5, 15, 20, 1};**  **int i, j, k, l;**    **for (i=0; i<4; i++) {**  **k=i;**  **for (j=i+1; j<5; j++)**  **if (x[j] < x[k])**  **k = j;**  **l=x[i]; x[i]=x[k]; x[k]=l;**  **}**  **for (i=0; i<5; i++)**  **printf("%d ", x[i]);**  **return 0;**  **}** | **1 5 10 15 20**  The program sorts the array x in ascending order using selection sort algorithm and prints the sorted array. |
| 1. **5 points**   **#include <stdio.h>**  **#include <string.h>**  **int main(void)**  **{**  **int i;**  **char x[]="ICS";**    **for (i=0; i<strlen(x); i++)**  **puts(&x[i]);**    **return 0;**  **}** | **ICS**  **CS**  **S**  The program prints the string x 3 times, the first time starting from the first character, the second time starting from the second character and the third time starting from the third character. |
| 1. **5 points**   **#include <stdio.h>**  **#include <string.h>**  **int main(void)**  **{**  **int i;**  **char x[5]={0}, y[]="A";**    **for (i=0; i<4; i++){**  **strcat(x,y);**  **y[0]++;**  **puts(x);**  **}**  **return 0;**  **}** | **A**  **AB**  **ABC**  **ABCD**  The program concatenates string x and y in each iteration and then prints the concatenated string x and increments the character stored in the string y.  In the first iteration, x has no characters and y=”A”. Thus, the concatenated string x=”A”.  In the second iteration, x =”A” and y=”B”. Thus, the concatenated string x=”AB”.  In the third iteration, x =”AB” and y=”C”. Thus, the concatenated string x=”ABC”.  In the fourth iteration, x =”ABC” and y=”D”. Thus, the concatenated string x=”ABCD”. |