# COMP1411 FINAL EXAM

### Question 1:

printf("Inside fun: x = %d\n",% x); => 5

printf("Inside fun: y = %d\n", y); => 7

printf("Inside foo: x = %d\n", x); => -1

printf("Inside foo: y = %d\n", y); => 7

### Question 2:

The function int fun(int&x) {} will be called twice. Each time the printf statement will output: 1

### Question 3:

|  |  |
| --- | --- |
| printf("Inside foo : Before fun\n"); | Inside foo : Before fun |
| printf("x = %d\n", x); | x = 1 |
| for(int i = 0; i < n; i++)  printf("%d ", A[i]);  printf("\n"); | Array A[i] will not print because n=-4 |
| printf("Inside fun: \n"); | Inside fun: |
| printf("x = %d\n", x); | x = 2 |
| for(int i = 0; i < n; i++)  printf("%d ", A[i]);  printf("\n"); | 2  4  6  8 |
| printf("Inside foo : After fun\n"); | Inside foo : After fun |
| printf("x = %d\n", x); | x = 1 |

### Question 4:

1. False
2. False
3. False

### Question 5:

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float x = 5.8;

int y = 3;

float \*p = &x;

int \*q = &y;

printf("x = %f\n", \*p);

printf("y = %d\n", y);

### Question 6:

|  |  |
| --- | --- |
| rintf("\*p = %d\n", \*p); | \*p = -4 (value increment) |
| printf("p = %d\n",&p); | Address of p |
| printf("arr = %d\n", arr); | 100 |
| printf("\*p = %d\n",&\*p); | 112 |
| printf("p = %d\n", p); | 112 |
| printf("arr = %d\n",&arr); | 100 |
| printf("\*\*q = %d\n", \*\*q); | -2 |
| for(int i = 0; i < 6; i++)  printf("%d ",-arr[i]); | -4 -4 -3 -2 -1 10 |

### Question 7:

1. struct BallonDor input[3];
2. Code to read entire file and store in structure array

void getRecord(struct BallonDor s[3]){

int i=0;

FILE \*data;

data = fopen("data.txt","r");

if(data == NULL){

printf("Error in file opening\n");

return;

}

char fullname[10];

char lastname[10];

while(fscanf(data, "%s %s %d ",fullname, lastname, &s[i].numBorWon) != EOF){

strcat(fullname,lastname);

strcpy(s[i].name,fullname);

i++;

}

fclose(data);

}

1. Code to write data stored in struct into output.txt file

void storeRecord(struct BallonDor s[3]){

int i;

FILE \*data;

data = fopen("output.txt","w");

if(data == NULL){

printf("Error in file opening\n");

return;

}

for(i=0;i<3;i++){

fprintf(data, "%s %d\n",s[i].name,s[i].numBorWon);

}

fclose(data);

}

int main(void){

struct BallonDor input[3];

getRecord(input);

storerecord(input);

return 0;

}

### Question 8:

int countWord(char sentence[]){

int length=0,words=1;

length = strlen(sentence);

for(int i=0;i<length;i++){

if(sentence[i] == ' ')

words = words+1;

}

return words;

}

### Question 9:

Definition of topScorer function:

int topScorer(int result[60][4]){

int average[60];

int topscoreindex = 0;

for (int i = 0; i<60; i++){

average[i] = (result[i][1] + result[i][2] + result[i][3])/3;

if(average[i] > average[topscoreindex])

topscoreindex = i;

}

return (result[topscoreindex][0]);

}

int main(void){

int topscore = topScorer(result);

return 0;

}

Definition of searchStudent function

void searchStudent(int id, int result[60][4], int \*score){

for (int i = 0; i<60; i++){

if(result[i][0] == id)

\*score = result[i][1] + result[i][2] + result[i][3];

}

}

int main(void){

searchstudent(1111,result,&targetscore);

return 0;

}