Introduction to Computer Science: Final Exam

January 13, 2017. 9:30 - 11:00

Name: _____

Student ID: _____

Instructions: This paper consists of 50 multiple choice questions. You have to answer all of them. Each carries two marks. Each question has only one correct option. Please put down the answer clearly next to the question number.

Question 1

In US, which university designed and built the first electronic computer?

(a) MIT

(b) Harvard

(c) Stanford

(d) University of Pennsylvania

Question 2

Which of the following statement about information system is true?

(a) An information system is a set of interrelated components that collect, process, store, and distribute information to make decisions and control in an organization.

(b) An information system is a set of interrelated components that process, store, and distribute information to support decision making and control in an organization.

(c) Human being is not part of an information system.

(d) None of the above.

Question 3

If the statement *John Sum is a handsome guy.* is treated as an information. Which of the following thing(s) could be treated as a data?

(a) John

(b) John Sum

(c) J

(d) All of the above.

Question 4

In accordance with John Sum's viewpoint, which of the following systems is inevitable in an organization?

(a) Transaction processing system.

(b) Management information system.

(c) Decision support system.

(d) Executive information system.

Question 5

Which of the following statement is true?

(a) CPU and GPU are both CISC processors.

(b) CPU and GPU are both RISC processors.

(c) CPU is a CISC processor and GPU is a RISC processor.

(d) CPU is a RISC processor and GPU is a CISC processor.

Diagram for Questions 6-10

The following schematic diagram is for Question 6 to Question 10. It is a circuit consisting of two logic gates.
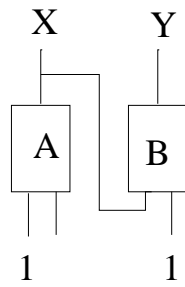
Question 6

What are the output values X and Y if A is an XOR gate, B is an NAND gate and the input (from left to right) is 111?

(a) $X = 0, Y = 0$.

(b) $X = 0, Y = 1$.

(c) $X = 1, Y = 0$.

(d) $X = 1, Y = 1$.

Question 7

What are the output values X and Y if A is an AND gate, B is an XOR gate and the input (from left to right) is 101?

(a) $X = 0, Y = 0$.

(b) $X = 0, Y = 1$.

(c) $X = 1, Y = 0$.

(d) $X = 1, Y = 1$.

Question 8

What are the output values X and Y if A is an NAND gate and B is an NAND gate and the input (from left to right) is 111?

(a) $X = 0, Y = 0$.

(b) $X = 0, Y = 1$.

(c) $X = 1, Y = 0$.

(d) $X = 1, Y = 1$.

Question 9

If the input (from left to right) is $1x1$, and the output $X = 1$ and $Y = 1$, ('x' means that the second input is unknown), which of the following combinations of gates will give this output?

(i) A is a OR gate and B is a OR gate.

(ii) A is a OR gate and B is an AND gate.

(iii) A is an AND gate and B is a OR gate.

Answer :

(a) (i) & (ii)

(b) (ii) & (iii)

(c) (i) & (iii)

(d) (i), (ii) and (iii)

Question 10

If the input (from left to right) is $1x1$, and the output $X = 1$ and $Y = 0$, ('x' means that the second input is unknown), which of the following combinations of gates will give this output?

(i) A is a OR gate and B is a XOR gate.

(ii) A is a OR gate and B is an NAND gate.

(iii) A is an NAND gate and B is a XOR gate.

Answer :

(a) (i) & (ii)

(b) (ii) & (iii)

(c) (i) & (iii)

(d) (i), (ii) and (iii)

Question 11

What is the maximum number that can be represented by using 16 bits unsigned binary number?

(a) $2^{16} - 1$

(b) $2^{15} - 1$

(c) $1 - 2^{16}$

(d) $1 - 2^{15}$

Question 12

What is the minimum number that can be represented by using 16 bits 2's complement?

(a) $2^{16} - 1$

(b) $2^{15} - 1$

(c) $1 - 2^{16}$

(d) $1 - 2^{15}$

Question 13

In which of the following software, AI technology has been applied.

(i) MS WORD

(ii) PowerPoint

(iii) Internet Explorer

Answer:

(a) (i) and (ii) only.

(b) (ii) and (iii) only.

(c) (i) and (iii) only.

(d) All of them.

Question 14

Which of the following operating system(s) can be found in an iPhone?

(i) iOS

(ii) FaceTime

(iii) Safari

Answer:

(a) (i) only.

(b) (ii) only.

(c) (ii) and (iii) only.

(d) (i) and (ii) only.

(e) All of them.

Question 15

In the history of Apple, what contributions she has made that change the world?

(i) She made the first computer with graphical user interface for controlling operating system.

(ii) She made the first device for listening MP3 music.

(iii) She made the first cell phone using multi-touch technology.

Answer:

(a) (i) and (ii) only.

(b) (ii) and (iii) only.

(c) (i) and (iii) only.

(d) All of them.

Question 16

Nowadays, almost every computer must have multi-core chip. What dose "multi-core" normally refer to?

(i) The chip has multiple CPUs and multiple GPUs.

(ii) The chip has multiple CPUs only.

(iii) The chip has multiple GPUs only.

Answer:

(a) (i) and (ii) only.

(b) (ii) and (iii) only.

(c) (i) and (iii) only.

(d) All of them.

Question 17

Google Play and App Store are online e-market for app developers. From Apple point of view, who are the customers of App Store?

(a) Sellers.

(b) Buyers.

(c) Both sellers and buyers.

(d) None of the above.

Question 18

There are nine balls in which their shapes and colors are identical the same. Their weights are all the same, except one of them is different. We do not know if the abnormal ball is lighter or heavier. Now, you are given a pan balance. Unfortunately, the size of each pan is too small to support more than one ball. What are (i) the minimum number and (ii) the maximum number of weight comparisons to find out which ball is abnormal.

(a) The minimum and maximum number of comparisons are one and eight.

(b) The minimum and maximum number of comparisons are two and eight.

(c) The minimum and maximum number of comparisons are one and seven.

(d) The minimum and maximum number of comparisons are two and seven.

Question 19

There are nine balls in which their shapes and colors are identical the same. Their weights are all the same, except one of them is different. We do not know if the abnormal ball is lighter or heavier. Now, you are given a pan balance. If now the size of each pan is large enough to support four balls, what is the maximum number of weight comparisons to find out which ball is abnormal.

(a) Two.

(b) Three.

(c) Six.

(d) Seven.

Question 20

Which of the following statements about network protocol is incorrect?

(a) Protocol is a set of rules that ensure communications among computers from different manufacturers.

(b) Protocol is a set of rules that determine the form of signal being transmitted and encoded.

(c) Protocol is a set of rules that determine how and when a notebook can send message via an access point.

(d) Protocol is a set of rules that ensure the router can forward a message to its destination.

(e) None of the above is incorrect.

Question 21

DNS refers to domain name server. Which of the following statements about DNS is incorrect?

(a) Each DNS consists of a table showing the mapping of the IP addresses of some domain names in the world.

(b) All the DNSs form a DNS network to facilitate the search of IP address of a domain name.

(c) Even if all the DNSs are down, we are still able to access a homepage.

(d) Even if all the DNSs are down, we are still able to send emails.

(e) None of the above is incorrect.

Question 22

Which of the following is(are) possible cause(s) for not able to access a homepage?

(i) The DNS your computer is linking to is being attacked by DDoS.

(ii) The remote web server is under DDoS attack.

(iii) Your ISP has no power electricity supply.

(iv) You have typed an incorrect URL.

Answer :

(a) (i) & (ii)

(b) (iii) & (iv)

(c) (i), (ii) and (iii)

(d) (i), (ii) and (iv)

(e) (i), (iii) and (iv)

(f) (ii), (iii) and (iv)

(g) (i), (ii), (iii) and (iv).

Question 23

For asymmetric encryption algorithms, the sender and the receiver use _____ to encrypt and decrypt messages. For symmetric encryption algorithms, the sender and the receiver use _____ to encrypt and decrypt messages.

(a) the same key, the same key

(b) the same key, different keys

(c) different keys, the same key

(d) different keys, different keys

Question 24

Which of the following statements about asymmetric and symmetric encryption methods is wrong?

(a) Asymmetric encryption methods are usually applied in short message encryption.

4

(b) Symmetric encryption methods are usually applied in long message encryption.

(c) Both asymmetric and symmetric encryption methods are suitable for both short and long message.

(d) Asymmetric encryption methods are usually applied in "secure key" encryption.

Question 25

John sends a message to Mary with a digital signature. Peter somehow gets a copy of the message. Which of the followings will happen?

(a) Mary can read the message but Peter cannot.

(b) Peter can read the message but Mary cannot.

(c) Both Mary and Peter cannot read the message.

(d) Both Mary and Peter can read the message.

Question 26

John encrypts a message by using his own private key and Mary's public key. Then, the message is sent to Mary. Peter somehow gets a copy of the message. Which of the followings will happen?

(a) Mary can read the message but Peter cannot.

(b) Peter can read the message but Mary cannot.

(c) Both Mary and Peter cannot read the message.

(d) Both Mary and Peter can read the message.

Question 27

Which of the following methods is NOT a correct method for encryption?

(a) John encrypts the letter first by using his public key. While Mary has received the message, she decrypts the message by using John's public key.

(b) John encrypts the letter by using Mary's public key. While Mary has received the message, she decrypts the message by using her private key.

(c) John encrypts the letter first by using Mary's private key and then by using his public key. While Mary has received the message, she decrypts the message first by using John's private key and then by using her public key.

(d) John encrypts the letter first by using Mary's public key and then by using his private key. While Mary has received the message, she decrypts the message first by using John's public key and then by using her private key.

Question 28

Which of the following statements about SSL is correct?

(a) To establish a secure session, the customer only needs to send a secure key to the server for message transfer.

(b) To establish a secure session, the server only needs to send a secure key to the customer for message transfer.

(c) To establish a secure session, the customer needs to send its certificate to the server for getting a secure key for message transfer.

(d) To establish a secure session, the server needs to send its certificate to the customer for getting a secure key for message transfer.

Question 29

In compared with OSI Reference Model, which two layers does the SSL (secure socket layer) refer to?

(a) Application and Presentation layers

(b) Presentation and Session layers

(c) Session and Transport layers

(d) Presentation and Transport layers

Question 30

If the following C program segment is executed, what will you see on the screen?

```
for (i=0,i<3, i++)
  printf("*\n");
```

(a) ***
    c:\>

(b) ```
    *
    *
    *
    c:\>
    ```

(c) ```
    ***

    c:\>
    ```

(d) ```
    *
    *
    *

    c:\>
    ```

(e) None of the above.

## Question 31

If the following C program segment is executed, what will you see on the screen?

```
i=0;
While (i<=5)
{ printf("*");
  i = i+2;
}
printf("%d\n", i);
```

(a) ```
    **2
    c:\>
    ```

(b) ```
    ***3
    c:\>
    ```

(c) ```
    **4
    c:\>
    ```

(d) ```
    ***6
    c:\>
    ```

(e) None of the above.

## Question 32

Below is a program demonstrating how to enter a string.

```
#include<stdio.h>

main() /* Main function. */
{
int YOB; /* Define integer variable YOB. */
int Age; /* Define integer variable Age */
char Name[32]; /* String for Name. */

printf("Please enter your name: ");
scanf("%s", Name);
printf("Enter your year of birth: ");
scanf("%d", &YOB);
```

```
Age = 2017 - YOB;
printf("%s, your YoB is %d.\n", Name, YOB);
printf("So, your age is %d.\n", Age);

}
```

If the name entered is JOHN and the year of birth is 1990, what will you see on the screen?

(a) ```
    John, your YoB is 1990.
    So, your age is 27.
    c:\>
    ```

(b) ```
    John, your YoB is 1990.
    So, your age is 27.

    c:\>
    ```

(c) ```
    JOHN, your YoB is 1990.
    So, your age is 27.
    c:\>
    ```

(d) ```
    JOHN, your YoB is 1990.
    So, your age is 27.

    c:\>
    ```

(e) None of the above.

## Question 33

Refer to Program A. What will you see after you have entered "a"?

(a) ```
    You have successfully registered MKT.
    You are now the 45 number of student.
    c:\>
    ```

(b) ```
    You have successfully registered MKT.
    You are now the 46 number of student.

    c:\>
    ```

(c) ```
    You have successfully registered ACCT.
    You are now the 35 number of student.
    c:\>
    ```

(d) ```
    You have successfully registered ACCT.
    You are now the 36 number of student.

    c:\>
    ```

(e) None of the above.

## Question 34

Refer to Program A. What will you see if you have miss-typed "a" by "s"?

(a) ```
    You have successfully registered MKT.
    You are now the 45 number of student.
    c:\>
    ```

6

(b) `You have successfully registered MKT.`
   `You are now the 46 number of student.`

   `c:\>`

(c) `You have successfully registered ACCT.`
   `You are now the 35 number of student.`
   `c:\>`

(d) `You have successfully registered ACCT.`
   `You are now the 36 number of student.`

   `c:\>`

(e) None of the above.

Question 35

Refer to Program B. If the following command is typed on the console, what will you see on the screen?

`c:\>bubblesort ascend 3 6 5 4 7 9 11`

(a) `a 3 4 5 6 7 9 11`

   `c:\>`

(b) `a 3 4 5 6 7 9 11`
   `c:\>`

(c) `3 4 5 6 7 9 11`

   `c:\>`

(d) `3 4 5 6 7 9 11`
   `c:\>`

(e) None of the above.

Question 36

Refer to Program B. If the following command is typed on the console, what will you see on the screen?

`c:\>bubblesort descend 3 6 5 4 7 9 11`

(a) `The sorted numbers are 11 9 7 6 5 4 3.`

   `c:\>`

(b) `The sorted numbers are 11 9 7 6 5 4 3.`
   `c:\>`

(c) `11 9 7 6 5 4 3`

   `c:\>`

(d) `11 9 7 6 5 4 3`
   `c:\>`

(e) None of the above.

Question 37

Refer to Program B. What is the maximum number of numbers the program can sort?

(a) 16

(b) 20

(c) 24

(d) 28

(e) None of the above.

Question 38

Refer to Program B. What is the value of "argc" if the following command is typed?

`c:\>bubblesort ascend 3 8 6 5 4 7 9 11`

(a) 8

(b) 9

(c) 10

(d) 11

(e) None of the above.

Question 39

Refer to Program C. If your option of sorting style is "a" the the numbers entered are "4 5 2 1 6", what will you see below the numbers you entered?

(a) `The sorted numbers are 1 2 4 5 6.`
   `c:\>`

(b) `The sorted numbers are 1 2 4 5 6`
   `c:\>`

(c) `The sorted numbers are 6 5 4 2 1.`
   `c:\>`

(d) `The sorted numbers are 6 5 4 2 1`
   `c:\>`

(e) None of the above.

Question 40

Refer to Program C. If your option of sorting style is "s" the the numbers entered are "4 5 2 1 6", what will you see below the numbers you entered?

(a) `The sorted numbers are 1 2 4 5 6.`
    `c:\>`

(b) `The sorted numbers are 1 2 4 5 6`
    `c:\>`

(c) `The sorted numbers are 6 5 4 2 1.`
    `c:\>`

(d) `The sorted numbers are 6 5 4 2 1`
    `c:\>`

(e) None of the above.

Question 41

Refer to Program C. If your option of sorting style is "ascend" the the numbers entered are "4 5 2 1 6", what will you see below the numbers you entered?

(a) `The sorted numbers are 1 2 4 5 6.`
    `c:\>`

(b) `The sorted numbers are 1 2 4 5 6`
    `c:\>`

(c) `The sorted numbers are 6 5 4 2 1.`
    `c:\>`

(d) `The sorted numbers are 6 5 4 2 1`
    `c:\>`

(e) None of the above.

Question 42

Refer to Program C. If your option of sorting style is "descend" the the numbers entered are "4 5 2 1 6", what will you see below the numbers you entered?

(a) `The sorted numbers are 1 2 4 5 6.`
    `c:\>`

(b) `The sorted numbers are 1 2 4 5 6`
    `c:\>`

(c) `The sorted numbers are 6 5 4 2 1.`
    `c:\>`

(d) `The sorted numbers are 6 5 4 2 1`
    `c:\>`

(e) None of the above.

Question 43

Refer to Program D. If your option of sorting style is "d" the the numbers entered are "4 5 2 1 6", what will you see below the numbers you entered?

(a) `The sorted numbers are 1 2 4 5 6.`
    `The sorted numbers are 1 2 4 5 6.`
    `c:\>`

(b) `The sorted numbers are 6 5 4 2 1.`
    `The sorted numbers are 6 5 4 2 1.`

(c) `The sorted numbers are 1 2 4 5 6`
    `The sorted numbers are 1 2 4 5 6`
    `c:\>`

(d) `The sorted numbers are 6 5 4 2 1`
    `The sorted numbers are 6 5 4 2 1`

(e) None of the above.

Question 44

Refer to Program D. If your option of sorting style is "a" the the numbers entered are "4 5 2 1 6", what will you see below the numbers you entered?

(a) `The sorted numbers are 1 2 4 5 6.`
    `The sorted numbers are 1 2 4 5 6.`
    `c:\>`

(b) `The sorted numbers are 6 5 4 2 1.`
    `The sorted numbers are 6 5 4 2 1.`

(c) `The sorted numbers are 1 2 4 5 6`
    `The sorted numbers are 1 2 4 5 6`
    `c:\>`

(d) `The sorted numbers are 6 5 4 2 1`
    `The sorted numbers are 6 5 4 2 1`

(e) None of the above.

Question 45

Refer to Program D. If your option of sorting style is "descend" the the numbers entered are "4 5 2 1 6", what will you see below the numbers you entered?

(a) `The sorted numbers are 1 2 4 5 6.`
    `The sorted numbers are 1 2 4 5 6.`
    `c:\>`

(b) `The sorted numbers are 6 5 4 2 1.`
    `The sorted numbers are 6 5 4 2 1.`

(c) ```
The sorted numbers are 1 2 4 5 6
The sorted numbers are 1 2 4 5 6
c:\>
```

(d) ```
The sorted numbers are 6 5 4 2 1
The sorted numbers are 6 5 4 2 1
```

(e) None of the above.

Question 46

Refer to Program D. If your option of sorting style is "ascend" the the numbers entered are "4 5 2 1 6", what will you see below the numbers you entered?

(a) ```
The sorted numbers are 1 2 4 5 6.
The sorted numbers are 1 2 4 5 6.
c:\>
```

(b) ```
The sorted numbers are 6 5 4 2 1.
The sorted numbers are 6 5 4 2 1.
```

(c) ```
The sorted numbers are 1 2 4 5 6
The sorted numbers are 1 2 4 5 6
c:\>
```

(d) ```
The sorted numbers are 6 5 4 2 1
The sorted numbers are 6 5 4 2 1
```

(e) None of the above.

Question 47

Here is a part of the content of a homepage.

1. Group One
   - John
   - Peter

2. Group Two
   - Mary
   - Lisa

In the HTML file, what would be the correct coding for it?

(a) ```
Group One
 John <li> Peter
Group Two
 Mary <li> Lisa
```

(b) ```
Group One
<ol><li> John <li> Peter </ol>
Group Two
<ol><li> Mary <li> Lisa </ol>
```

(c) ```

 Group One
 John <li> Peter
 Group Two
 Mary <li> Lisa

```

(d) ```
<ul>
<li> Group One
<ol><li> John <li> Peter </ol>
<li> Group Two
<ol><li> Mary <li> Lisa </ol>
</ul>
```

(e) None of the above.

Question 48

Here is part of the content of a homepage.

To validate the idea, we conduct a ***statistical analysis***.

In the HTML file, what would be the correct coding for it?

(a) `<b><i>statistical analysis<i><b>`

(b) `<i><b>statistical analysis<i><b>`

(c) `<b><i>statistical analysis</i></b>`

(d) `<i><b>statistical analysis</i></b>`

(e) None of the above.

Question 49

Which of the followings is the correct structure of a HTML file?

(a) ```
<meta> ... </meta>
<body>
<html> ... </html>
</body>
```

(b) ```
<body>
<meta> ... </meta>
<html> ... </html>
</body>
```

(c) ```
<html>
<header> ... </header>
<body> ... </body>
</html>
```

(d) ```
<html>
<body>
<header> ... </header>
```

```
...
</body>
</html>
```

(e) None of the above.

Question 50

In a HTML file, what information could be put in the header segment?

(i) Title of the webpage.

(ii) Keywords of the webpage.

(iii) Style of the webpage.

Answer:

(a) (i) only.

(b) (ii) only.

(c) (iii) only.

(d) (i) and (ii) only.

(e) (ii) and (iii) only.

(f) (i) and (iii) only.

(g) All of the above.

(h) None of the above.

Program A

The filename of the following program is "registration.cpp".

```
#include<stdio.h>

main() /* Main function. */
{
int SNM; /* Current no. of students in Marketing. */
int SNA; /* Current no. of students in Accounting. */
char Choice; /* Define a character variable Choice. */

SNM = 45; SNA = 35;
printf("Which course you would like to register?\n");
printf("a: Marketing, b: Accounting\n");
printf("Please enter your choice (a or b): ");
scanf("%c", &Choice);

if (Choice == 'a')
{
  SNM = SNM + 1;
  printf("You have successfully registered MKT.\n");
  printf("You are now the %d number of student.", SNM);
}
else
{
  SNA = SNA + 1;
  printf("You have successfully registered ACCT.\n");
  printf("You are now the %d number of student.", SNA);
}

}
```

Program B

The filename of the following program is "bubblesort.cpp".

```c
#include<stdio.h>
#include<stdlib.h>

int main(int argc, char *argv[])
{
    int A[24]; /* Define integer array. */
    int i,j; /* Define indices. */
    int tmp; /* Define dummy variable for sorting. */
    char Opt = 'c'; int SNUM;

    /* Step 1: Read input from the command line. */
    SNUM = argc - 2;
    Opt = argv[1][0];
    for(i = 0; i<argc-2; i++)
        A[i] = atoi(argv[i+2]);

    /* Step 2: Sorting the numbers */
    if(Opt == 'a')
        for(i=0; i<SNUM-1; i++)
        for(j=0; j<SNUM-i-1; j++)
        {
                if(A[j] > A[j+1])
                {
                tmp = A[j];
                A[j] = A[j+1];
                A[j+1] = tmp;
                }
        }
    else
        for(i=0; i<SNUM-1; i++)
        for(j=0; j<SNUM-i-1; j++)
        {
                if(A[j] < A[j+1])
                {
                tmp = A[j];
                A[j] = A[j+1];
                A[j+1] = tmp;
                }
        }


    /* Step 3: Show the results */
    printf("The sorted numbers are");
    for(i=0; i<SNUM; i++)
        printf(" %d", A[i]);
    printf(".\n");
}
```

Program C

The filename of the following program is "bubblesort02.cpp".

```
#include<stdio.h>
main()
{
    int A[5]; /* Define integer array. */
    int i,j; /* Define index. */
    int tmp; /* Define dummy variable for sorting. */
    char OPT[8];  char Opt = 'c';

    printf("This program demonstrates how to do sorting.\n\n");
    while((Opt != 'a')&&(Opt != 'd'))
    {
    printf("Select a sorting style, 'a' for ascending and 'd' for descending.\n");
    printf("Option : ");
    scanf("%s", OPT);
    Opt = OPT[0];
    }
    printf("\n");
    printf("Please enter five numbers.\n");

    for(i=0; i<5; i++)
    {
    printf("Enter the %d number: ", i+1);
    scanf("%d", &A[i]);
    }

    if(Opt == 'a')
        {
        for(i=0; i<4; i++)
        for(j=0; j<4-i; j++)
        {
                if(A[j] > A[j+1])
                {
                tmp = A[j];
                A[j] = A[j+1];
                A[j+1] = tmp;
                }
        }
        printf("The sorted numbers are %d %d %d %d %d.", A[0], A[1], A[2], A[3], A[4]);
        }
    else
        {
        for(i=0; i<4; i++)
        for(j=0; j<4-i; j++)
        {
                if(A[j] < A[j+1])
                {
                tmp = A[j];
                A[j] = A[j+1];
                A[j+1] = tmp;
                }
        }
        printf("The sorted numbers are %d %d %d %d %d.", A[0], A[1], A[2], A[3], A[4]);
        }
}
```

Program D

The filename of the following program is "bubblesort03.cpp".

```
#include<stdio.h>
main()
{
    int A[5], i, j, tmp;
    char OPT[8];   char Opt = 'c';

    printf("This program demonstrates how to do sorting.\n\n");
    while((Opt != 'a')&&(Opt != 'd'))
    {
    printf("Select a sorting style, 'a' for ascending and 'd' for descending.\n");
    printf("Option : ");
    scanf("%s", OPT);
    Opt = OPT[0];
    }
    printf("\n");
    printf("Please enter five numbers.\n");

    for(i=0; i<5; i++)
    {
    printf("Enter the %d number: ", i+1);
    scanf("%d", &A[i]);
    }

    if(Opt == 'a')
        for(i=0; i<4; i++)
        for(j=0; j<4-i; j++)
                if(A[j] > A[j+1])
                {
                tmp = A[j];
                A[j] = A[j+1];
                A[j+1] = tmp;
                }
        printf("The sorted numbers are");
        for(i=0; i<4; i++)
            printf(" %d", A[i]);
        printf(".");
    else
        for(i=0; i<4; i++)
        for(j=0; j<4-i; j++)
                if(A[j] < A[j+1])
                {
                tmp = A[j];
                A[j] = A[j+1];
                A[j+1] = tmp;
                }
        printf("The sorted numbers are");
        for(i=0; i<4; i++)
            printf(" %d", A[i]);
        printf(".");
}
```