Chuen Yuen College

2010-2012 HKDSE ICT SBA PROJECT

English vocabulary game - Odd One Out

Name :

Class : 6B

Class No. : 27

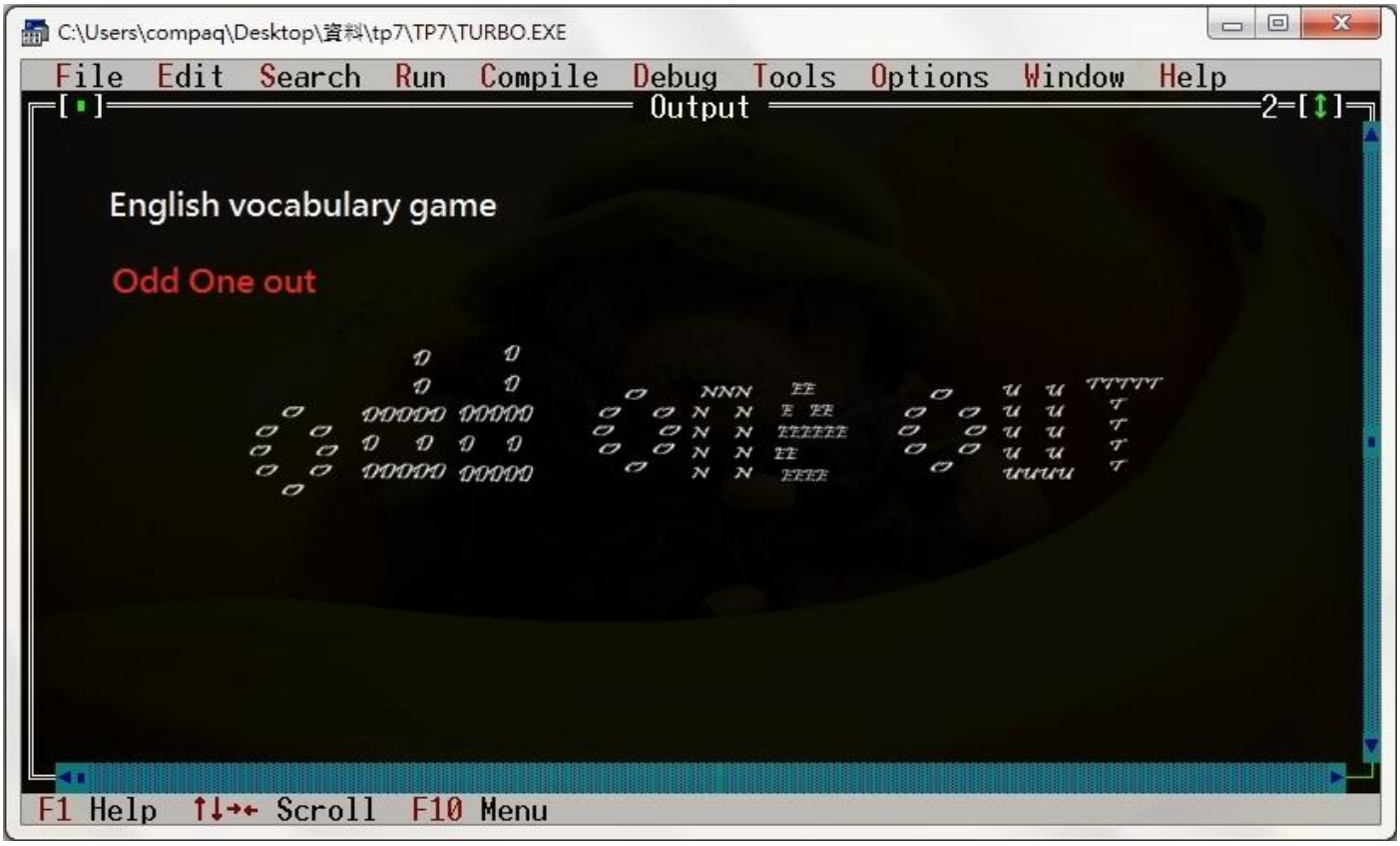
Abstract

What are English Vocabulary Game

Refer to the name ‘Game’，English vocabulary game are different games play with English .There are many types of English games , such as ‘Odd One Out’，‘Sudoko’，‘Crosswork Puzzle’．Learning English through game is more fun than reading text book .

The expectations of the programs

Idea of the user interface:



The expected program include a well looking user interface.

Also , the program will store the top5 score.

Acknowledgement

Thanks for the following classmate

Class	Name
5B	Chan Wai Kit
5B	Lai Siu Hei
5E	Chan Chuen Wai

Also , My ICT teacher Mr.Hung!

Table of Content

Objective of project

This program is aim to help user improve their English Skill by playing English vocabulary game. In this program, game 'Odd One Out' will be choose .

'Odd One Out' is a game that need user to choose a item from several items that different with others. User can learn more different English vocabulary by using this program .

There are different difficulty let user to play , it also include a scoring system . User can get marks when answer the question correctly .In the setting, each correct answer can get 100 marks . The system will calculate the total marks that user get in the end of game and give comment . By getting marks in the game , user can estimate the level of their vocabulary knowledge.

Finally, hope this program can help you improve English.

Programming Language

For develop this program, there are different programming language can be use. Such as Pascal, C+ and also some software like Flash. Each of them have their own advantage.

✧ Pascal

A programming language with long history, it is easy to develop a Pascal program.

Also I use Pascal for a long time.

✧ C+

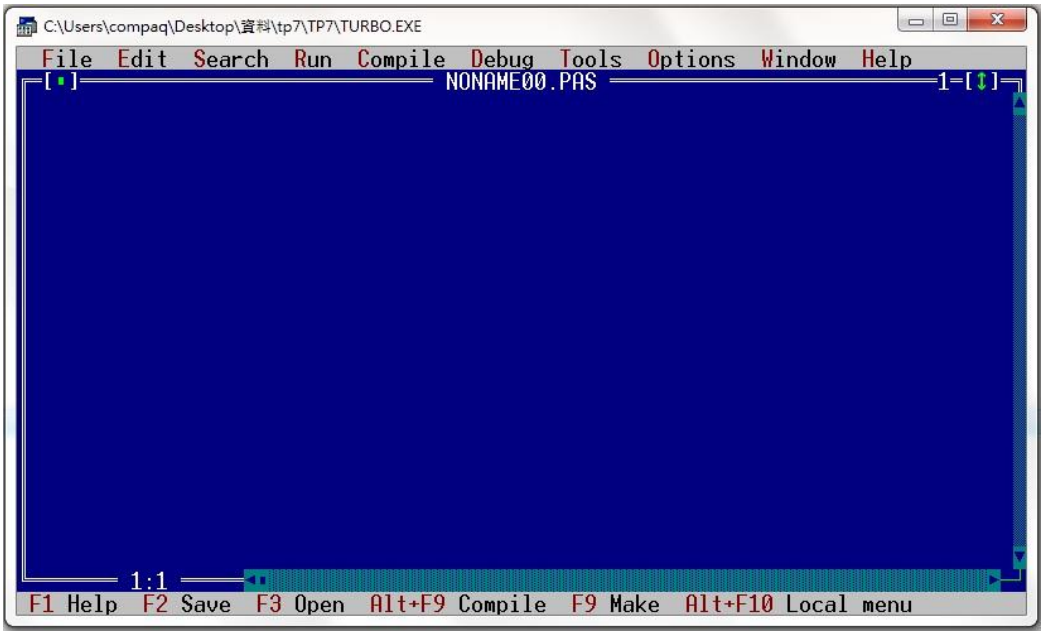
A programming language that be used to develop program around the world commonly . It is easy to find resources by using Internet .

✧ Flash

Flash is a good software for develop a game, but develop a Flash game need a longer time and more difficult.

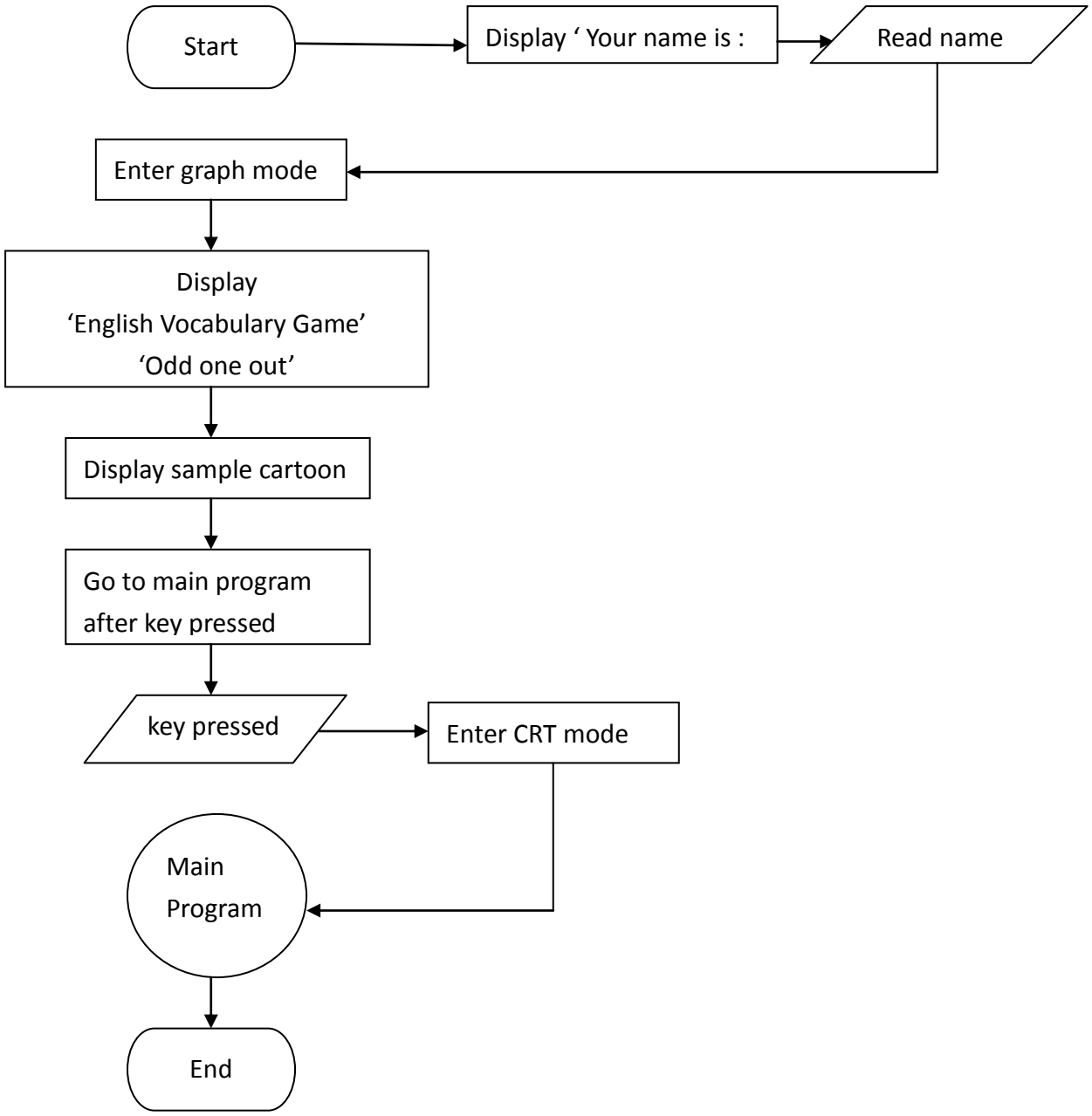
Finally, Pascal language is choose in this program .

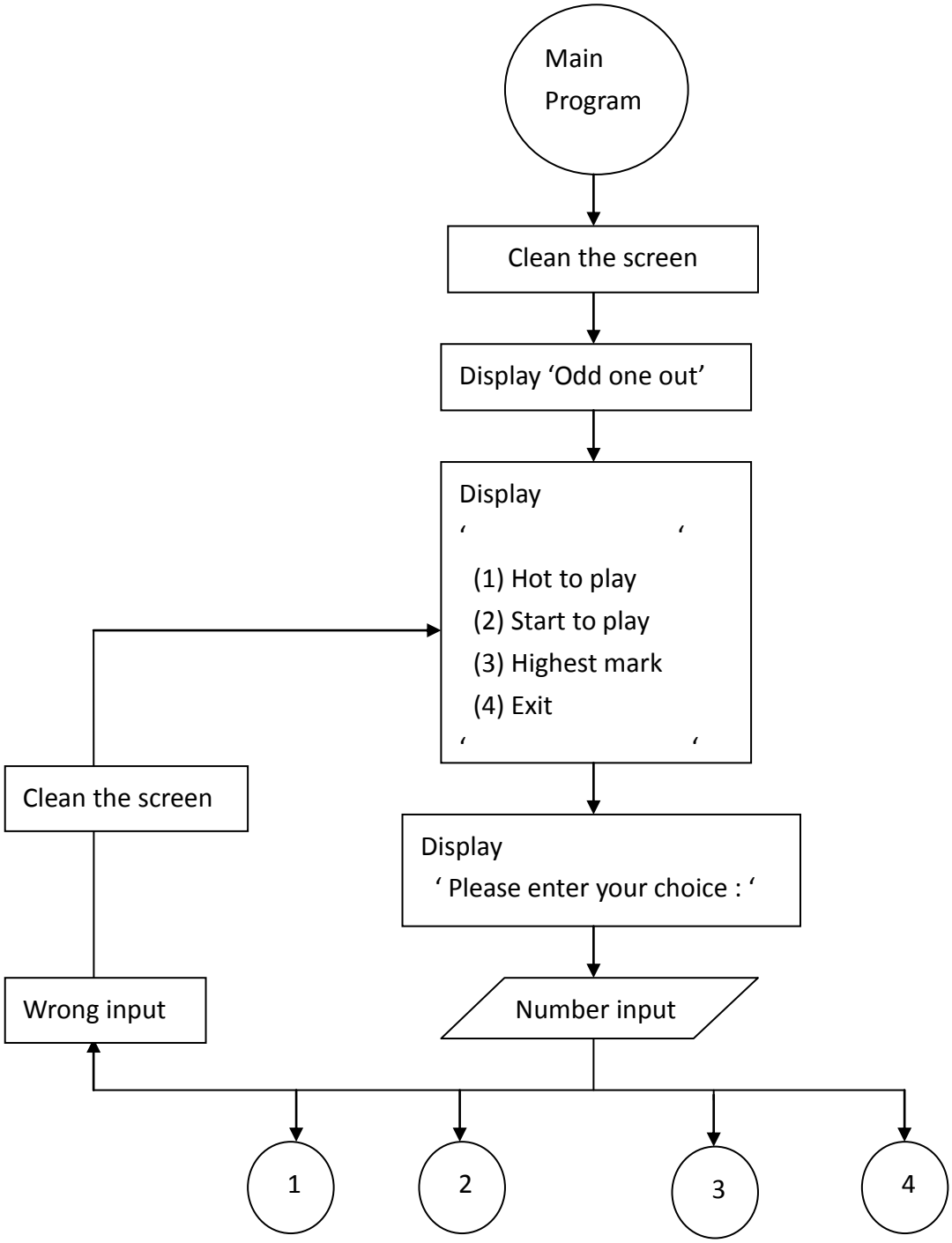
Complier : Turbo Pascal 7.0
Source web site : http://www.bloodshed.net

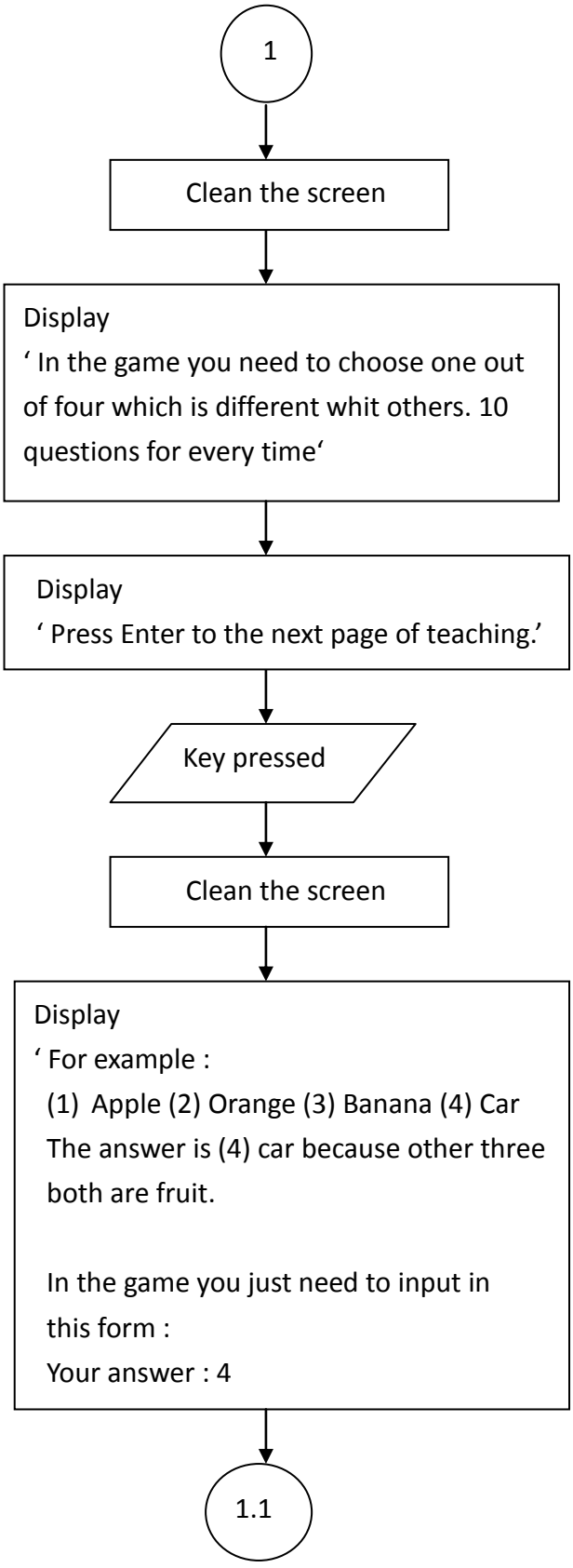


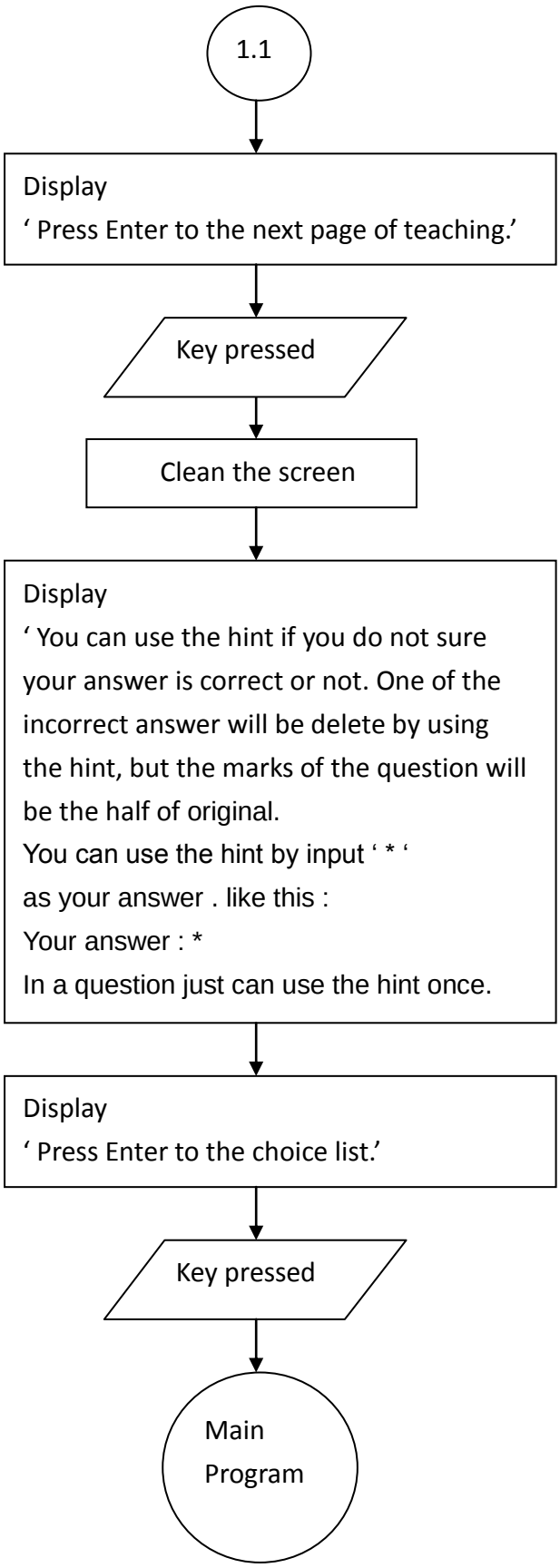
↑ User interface of Turbo Pascal 7.0

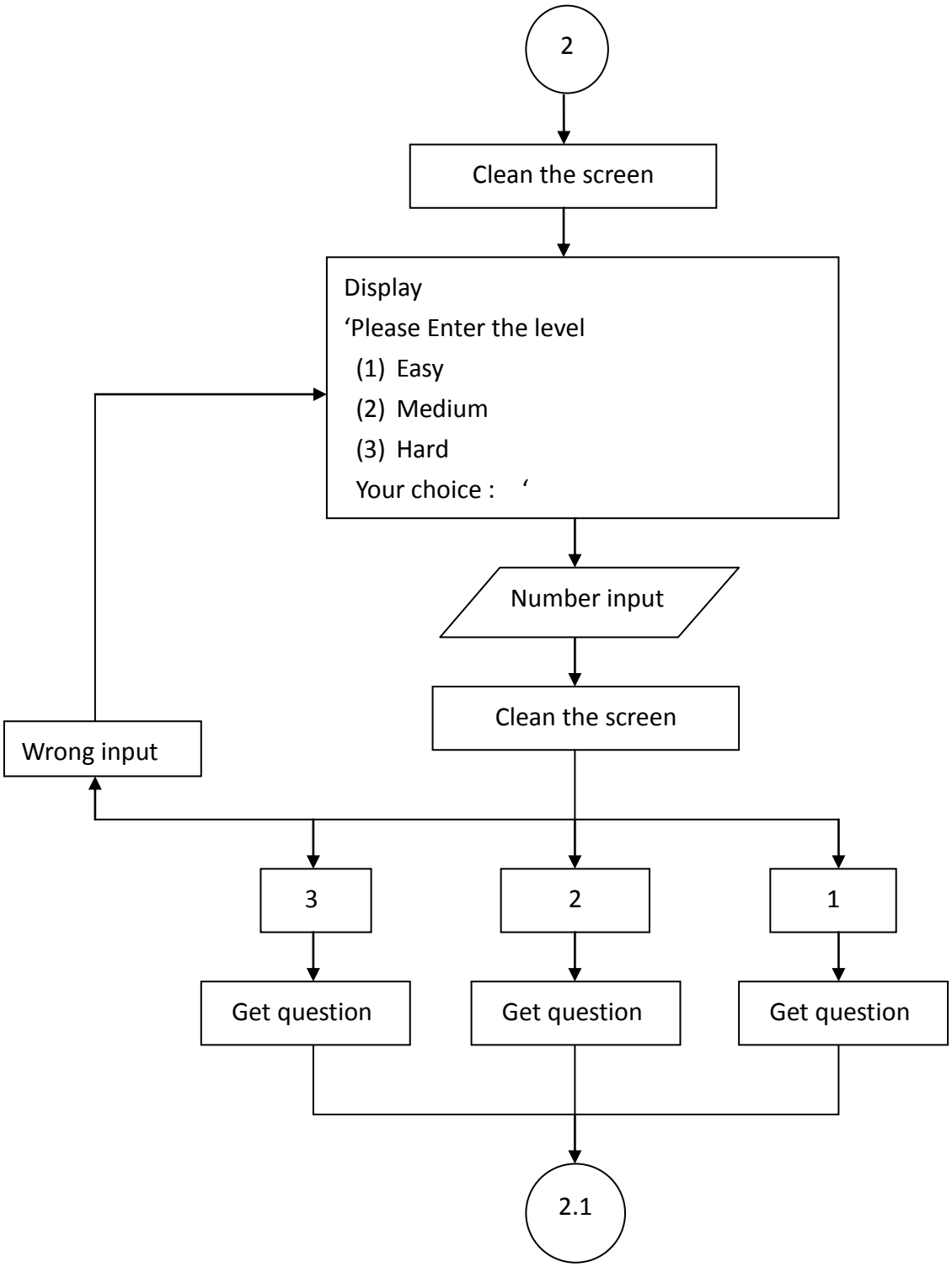
Flowchart

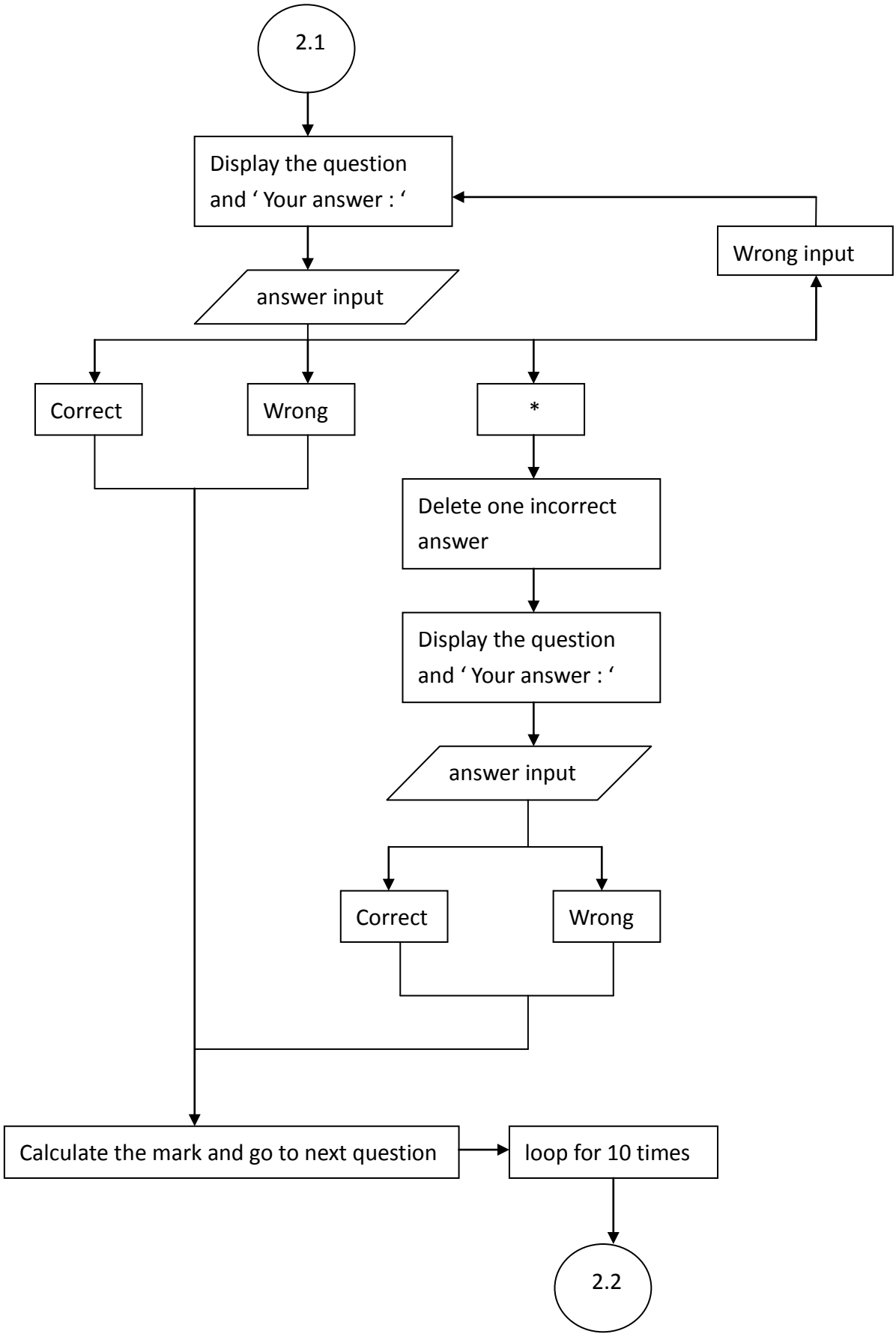

Start
Display ‘ Your name is :
Read name
Enter graph mode
Display
‘English Vocabulary Game’
‘Odd one out’
Display sample cartoon
Go to main program
after key pressed
key pressed
Enter CRT mode
Main
Program
End

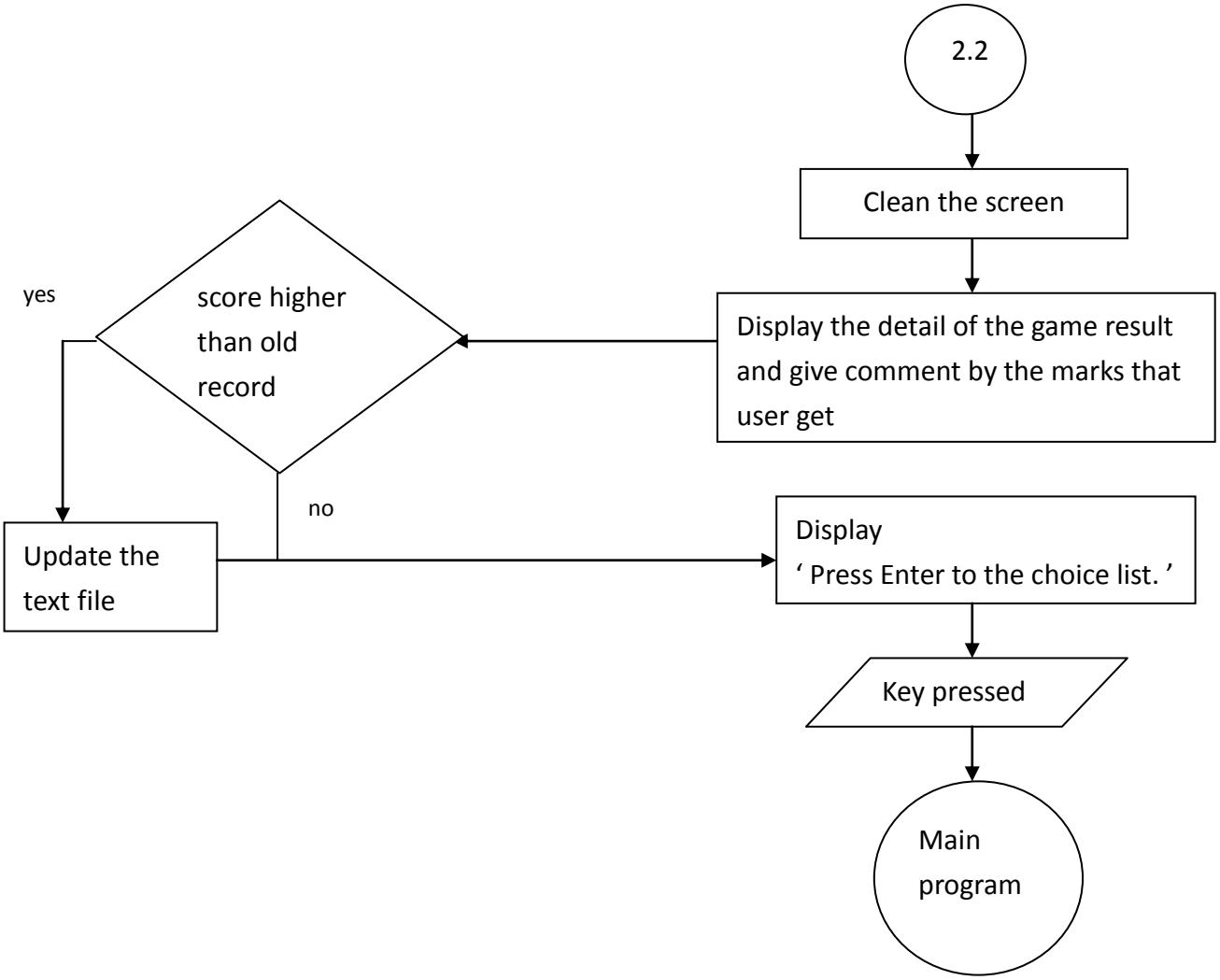

Main
Program
Clean the screen
Display ‘Odd one out’
Display
‘ ‘
(1) Hot to play
(2) Start to play
(3) Highest mark
(4) Exit
‘ ‘
Clean the screen
Display
‘ Please enter your choice : ‘
Wrong input
Number input
1
2
3
4

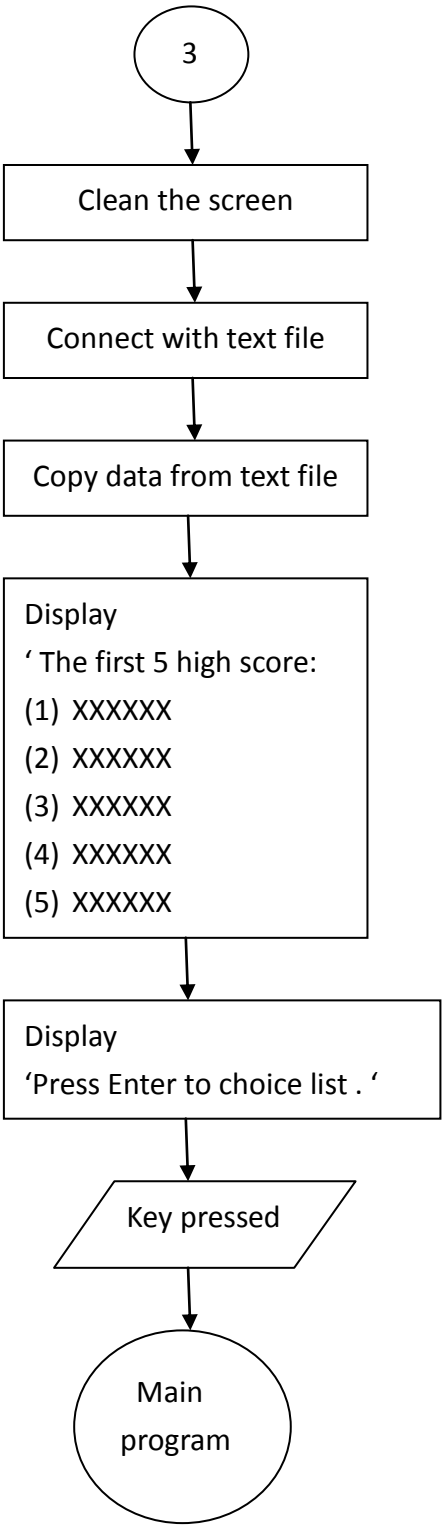

1
Clean the screen
Display
‘ In the game you need to choose one out of four which is different whit others. 10 questions for every time‘
Display
‘ Press Enter to the next page of teaching.’
Key pressed
Clean the screen
Display
‘ For example :
(1) Apple (2) Orange (3) Banana (4) Car
The answer is (4) car because other three both are fruit.
In the game you just need to input in this form :
Your answer : 4
1.1

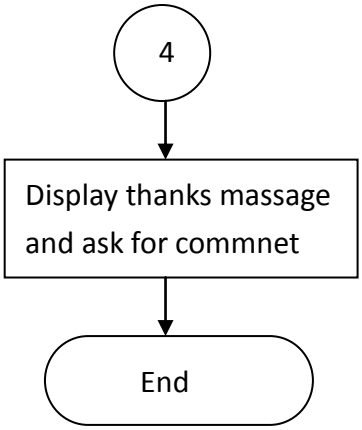

1.1
Display
‘ Press Enter to the next page of teaching.’
Key pressed
Clean the screen
Display
‘ You can use the hint if you do not sure your answer is correct or not. One of the incorrect answer will be delete by using the hint, but the marks of the question will be the half of original.
You can use the hint by input ‘ * ‘ as your answer . like this :
Your answer : *
In a question just can use the hint once.
Display
‘ Press Enter to the choice list.’
Key pressed
Main Program


2
Clean the screen
Display
'Please Enter the level
(1) Easy
(2) Medium
(3) Hard
Your choice : '
Number input
Clean the screen
Wrong input
3
2
1
Get question
Get question
Get question
2.1


2.1
Display the question and ‘ Your answer : ‘
Wrong input
answer input
Correct
Wrong
*
Delete one incorrect answer
Display the question and ‘ Your answer : ‘
answer input
Correct
Wrong
Calculate the mark and go to next question
loop for 10 times
2.2


2.2
Clean the screen
Display the detail of the game result and give comment by the marks that user get
score higher than old record
yes
no
Update the text file
Display
‘ Press Enter to the choice list. ’
Key pressed
Main program


3
Clean the screen
Connect with text file
Copy data from text file
Display
‘ The first 5 high score:
(1) XXXXXX
(2) XXXXXX
(3) XXXXXX
(4) XXXXXX
(5) XXXXXX
Display
‘Press Enter to choice list . ‘
Key pressed
Main program


4
Display thanks massage and ask for commnet
End

Data Structure

Arrays

A array can perform well in store more than one data . Such as a set of questions or a set of solution .

Using array is a convenient way to handle lots of record .

A array can define like this :

```
var
    questions : array[1..4] of string ;
```

In the statement “[1..4]” means the array can store 4 records at a time. They are questions[1] , questions[2] , questions[3] and questions[4] respectively .

In the game , there are totally 3 array used .

ques : array[1..4] of string;

For store the questions of each questions.

sname : array[1..6] of string;

smark : array[1..6] of integer;

For sorting the rank of user.

Algorithm Design

Pseudocode

1. run procedure 'animation'
2. run procedure 'get_info'
3. run procedure 'menu'
   in 'menu' while choice should in 1 , 2 , 3 , 4

In case of choice = 1

1. run procedure 'get_level'
2. run procedure 'game'
3. run procedure 'sorting'
4. run procedure 'writetext'

In case of choice = 2

1. run procedure 'teaching'

In case of choice = 3

1. assign variable 'marfile' with 'mark.txt' and reset cursor to start point
2. display top 5 player

In case of choice = 4

1. clean the screen
2. display thanks message

procedure 'animation'
1. enter graph mode
2. display 'Odd One Out' on screen
3. close graph mode

procedure 'get_info'
1. repeat get the name of user
   until valid input

procedure 'menu'
1. clean the screen
2. display choice table
3. repeat get user' s choice
   until valid input
4. return the choice to main program

procedure 'teaching'
1. clean the screen
2. repeat display the teaching
   2.1 press enter to next page
   until end of teaching

procedure 'get_level'
1. display choice table
2. repeat get the choice
   until valid input
3. return the choice to main program

procedure 'sorting'

1. initialization
2. connect the text file
3. get data from text file and store in array
4. bubble sort

procedure 'writetext'

1. connect the text file
2. clean the content of the text file
3. write the data store in sorted array into text file

procedure 'game'

1. initialization
2. connect question and solution text file
3. for loop for 10 times
   3.1 get question and solution form the text file
   3.2 repeat get answer from user
   until valid input
   3.3 calculate the score
   3.4 display score
   3.5
4. return the score to the main program

File List

Name	Function
anseasy.txt	Store the question
ansnorm.txt	Store the question
anshard.txt	Store the question
queseasy.txt	Store the solution
queshard.txt	Store the solution
quesnorm.txt	Store the solution
mark.txt	Store the score of user
SBAV2.pas	Source code
SBAV2.exe	Executable file

Variable list

Name	Type	Function
name	string	name of user
mark	integer	score in the game
choice	character	choice in main menu
difficult	character	the level of game
ques	array of string	questions
i , j	integer	counter
sname	array of string	use for sorting
smark	array of integer	use for sorting
marfile	text	store score of user
nam	string	name of user
mar	integer	score of user

Procedure 'menu'

name	type	function
error	integer	use when invalid input

procedure ‘sorting’

name	type	function
markfile	text	text file store the score
n	integer	number of element
pass	integer	bubble sort
temp	integer	use for swap data
i	integer	counter
temp1	string	use for swap data

procedure ‘writetext’

name	type	funchtion
markfile	text	text file store the score

procedure ‘game’

name	type	function
i , j	integer	counter
correct	integer	number of correct answer
answer	character	user’ s answer
ans	character	the solution
hint	character	one of the wrong answer
quesfile , ansfile	text	question and solution
h	boolean	true when user use the hint
ok	boolean	go to next question when true

Program Listing

```
program odd_one_out;

uses CRT,DOS,GRAPH;


var

   name : string;

   mark : integer;

   choice , difficult : char;

   ques : array[1..4] of string;

   i,j : integer;

   sname : array[1..6] of string;

   smark : array[1..6] of integer;

   marfile : text;

   nam : string;

   mar : integer;


{use graph mode to display 'odd one out'}

procedure animation;

var
```

```
    GDrive, GMode :integer;
    color ,x1,i:integer;
    slo:string;
    key :char;

begin
     randomize;
     GDrive := Detect;
     InitGraph(GDrive,Gmode,'C:\ict\tp7');
     slo:='odd one out';
     x1:=100;
     for i := 1 to 11 do
     begin
          color:=random(15)+1;
          setcolor(color);
          settextstyle(0,0,5);
          outtextxy(x1,200,slo[i]);
          x1:=x1+40;
     end;
```

```
    key:=readkey;
    CloseGraph     ;


end;


procedure get_info(var player : string);
begin
   player := ' ';
   clrscr;
   randomize;
   TEXTCOLOR(random(10)+1);


   repeat
      write('Please enter your name: ');
      readln(player);


      if length(player) > 10
      then begin
         writeln('Sorry! Largest length of name is 10 character! ');
         writeln;
```

```
      end;
   until length(player) <= 10;
end;


procedure menu(player : string; var select : char);
var
   error : integer;
begin
   repeat
      clrscr;
      randomize;
      TEXTCOLOR(random(10)+1);


      writeln('Hello!  ', player);
      writeln;
      writeln('Welcome to Odd One Out');
      writeln;
      writeln('(1) Start Game');
      writeln('(2) How to play');
      writeln('(3) Top player');
```

```
      writeln('(4) Quit');
      writeln;
      write('Your choice(1-4) : ');
      readln(select);

      if select in ['1','2','3','4']
         then error := 0
         else error := 1;
   until error = 0;
end;

procedure teaching;
begin
    randomize;
    TEXTCOLOR(random(10)+1);

    clrscr;
    writeln('This is a game call out one out.');
    writeln;
    delay(500);
```

```
writeln('You need to choose the one different with other three,');

writeln;

delay(500);

write('Press enter to next page');

readkey;

clrscr;


randomize;

TEXTCOLOR(random(10)+1);

writeln('There are three level in this game,');

delay(500);

writeln;

writeln('You can choose the suitable level.');

delay(500);

writeln;

writeln('In each level there are 10 questions,');

delay(500);

writeln;

writeln('You can get 100 marks for each correct answer,');

delay(500);
```

```
writeln;

writeln('Marks will not deduct even you choose the wrong answer! ');

delay(500);

writeln;

write('Press enter to next page');

readkey;

clrscr;


randomize;

TEXTCOLOR(random(10)+1);

writeln('If you are not sure that which is the correct answer,');

delay(500);

writeln;

writeln('you can input your answer with keyword "h" to get a hint,');

delay(500);

writeln;

writeln('one of the wrong answer will show on the screen,');

delay(500);

writeln;

writeln('But you can only get the half of marks of the question.');
```

```
    delay(500);
    writeln;
    write('Press enter to next page');
    readkey;
    clrscr;

    randomize;
    TEXTCOLOR(random(10)+1);
    writeln;
    write('Hope you will like the game! ');
    delay(2000);
end;

procedure get_level(var level : char);
var
   error : integer;
begin
   repeat
      clrscr;
      randomize;
```

```
      TEXTCOLOR(random(10)+1);


      writeln('(1) Easy');
      writeln('(2) Normal');
      writeln('(3) Hard');
      writeln;
      write('Your choice(1-3) : ');
      readln(level);


      if level in ['1','2','3']
         then error := 0
         else error := 1;
   until error = 0;
end;


procedure sorting(score : integer;user : string);
var
   markfile : text;
   n,pass,temp,i : integer;
   temp1 : string;
```

```
begin
   n := 6;
   pass := 0;

   for i := 1 to 6 do
   begin
      smark[i] := 0;
      sname[i] := '';
   end;

   assign(markfile,'mark.txt');
   reset(markfile);

   for i := 1 to 5 do
   begin
      readln(markfile, smark[i]);
      readln(markfile, sname[i]);
   end;
   close(markfile);
```

```
   sname[6] := user;
   smark[6] := score;

   for pass := 1 to n - 1 do
      for i:= 1 to n - pass do
         if    smark[i] < smark[i+1]
         then begin
                  temp := smark[i];
                  temp1 := sname[i];
                  smark[i] := smark[i+1];
                  sname[i] := sname[i+1];
                  smark[i+1] := temp;
                  sname[i+1] := temp1;
               end;

end;

procedure writetext;
var
   markfile : text;
```

```
begin
   assign(markfile,'mark.txt');
   rewrite(markfile);

   for i:= 1 to 5 do
   begin
      writeln(markfile, smark[i]);
      writeln(markfile, sname[i]);
   end;
   close(markfile);
end;

procedure game(var score : integer ; diff : char);
var
   i,j,correct : integer;
   answer,ans, hint : char;
   quesfile , ansfile : text;
   h,ok : boolean;
begin
   score := 0;
```

```
correct := 0;

answer := ' ';

ans := ' ';


for i := 1 to 4 do

   ques[i] := ' ';


{get the set of question from text file}

if diff = '1'

then begin

        assign(quesfile,'queseasy.txt');

        assign(ansfile,'anseasy.txt');


        reset(quesfile);

        reset(ansfile);

end;


if diff = '2'

then begin

        assign(quesfile,'quesnorm.txt');
```

```
        assign(ansfile,'ansnorm.txt');


        reset(quesfile);
        reset(ansfile);
end;


   if diff = '3'
then begin
        assign(quesfile,'queshard.txt');
        assign(ansfile,'anshard.txt');


        reset(quesfile);
        reset(ansfile);
end;


clrscr;
randomize;
TEXTCOLOR(random(10)+1);
write('Game will start now');
Delay(2000);
```

```
{use for loop to hold the game}
for i:= 1 to 10 do
begin
   clrscr;
   randomize;
   TEXTCOLOR(random(10)+1);
   ok := false;


   readln(ansfile, ans);


   writeln('Question ',i);
   writeln;


      for j := 1 to 4 do
      begin
         readln(quesfile, ques[i]);
         write(ques[i],'    ');
      end;
```

```
repeat
      writeln;
      writeln;
      write('Your answer is("h" for hint) : ');
      readln(answer);
until answer in ['a','b','c','d','A','B','C','D','h','H'];


if (answer = 'h') or (answer = 'H')
then h := true;


while (h = true) and (ok = false) do
begin
        repeat
          hint := chr(random(4) + 97);
        until hint <> ans;


        repeat
          writeln(hint,' is one of the wrong answer! ');
          writeln;
          write('Your answer is : ');
```

```
            readln(answer);
        until answer in ['a','b','c','d','A','B','C','D','h','H'];


        if (answer = ans) or (answer = chr(ord(ans)-32))
            then writeln('You are correct! ')
            else writeln('Sorry , you are wrong! ');


        if (answer = ans) or (answer = chr(ord(ans)-32))
        then begin
            score := score + 50;
            correct := correct + 1;
              end;
   ok := true;
   h := false;
end;


while   (h = false) and (ok = false) do
begin
   if (answer = ans) or (answer = chr(ord(ans)-32))
      then writeln('You are correct! ')
```

```
      else writeln('Sorry , you are wrong! ');


      if (answer = ans) or (answer = chr(ord(ans)-32))
         then begin
            score := score + 100;
            correct := correct + 1;
                end;
   ok := true;
end;


      writeln;
      writeln('Your score is ',score,' now.');


      writeln;
      writeln;



      if i <> 10
       then write('Press enter to next question.')
       else write('Press enter to finish the game.');
```

```
        readkey;
        clrscr;

        if i = 10
        then begin
           writeln('You get correct in ',correct,' questions');
           writeln;
           writeln('and you get ',score,' marks in the game');
           writeln;
           write('Press Enter to main manu');
           readkey;

        end;
   end;
     close(quesfile);
     close(ansfile);
end;

begin
   animation;
```

```
get_info(name);
repeat
    menu(name,choice);


  if choice = '1'
    then begin
            get_level(difficult);
            mark := 0;
            game(mark,difficult);
            sorting(mark,name);
            writetext;
            end;


if choice = '2'
then teaching;


if choice = '3'
then begin
      j := 0;
       nam := ' ';
```

```
mar := 0;


clrscr;
assign(marfile, 'mark.txt');
reset(marfile);


randomize;
TEXTCOLOR(random(10)+1);
writeln('     name                score');
writeln;


write('1    ');
readln(marfile, mar);
readln(marfile, nam);
for j := 1 to 10-length(nam) do
      nam := nam + ' ';
writeln(nam,'       ',mar);


write('2    ');
readln(marfile, mar);
```

```
readln(marfile, nam);
for j := 1 to 10-length(nam) do
      nam := nam + ' ';
writeln(nam,'       ',mar);

write('3    ');
readln(marfile, mar);
readln(marfile, nam);
for j := 1 to 10-length(nam) do
      nam := nam + ' ';
writeln(nam,'       ',mar);

write('4    ');
readln(marfile, mar);
readln(marfile, nam);
for j := 1 to 10-length(nam) do
      nam := nam + ' ';
writeln(nam,'       ',mar);
```

```
        write('5    ');
        readln(marfile, mar);
        readln(marfile, nam);
        for j := 1 to 10-length(nam) do
            nam := nam + ' ';
        write(nam,'       ',mar);


        writeln;
        writeln;
        write('Press enter to main menu');
        readkey;
        close(marfile);
end;


if choice = '4'
then begin
        clrscr;
        randomize;
        TEXTCOLOR(random(10)+1);
        writeln('Thanks for Your playing! ');
```

```
            writeln;
            writeln('If any suggestion, e-mail to lucklyho888@hotmail.com');
            writeln;
            writeln('Good Bye! ');
            writeln;
            write('Press Enter to leave');
            readkey;
          end;
  until choice = '4';
end.
```

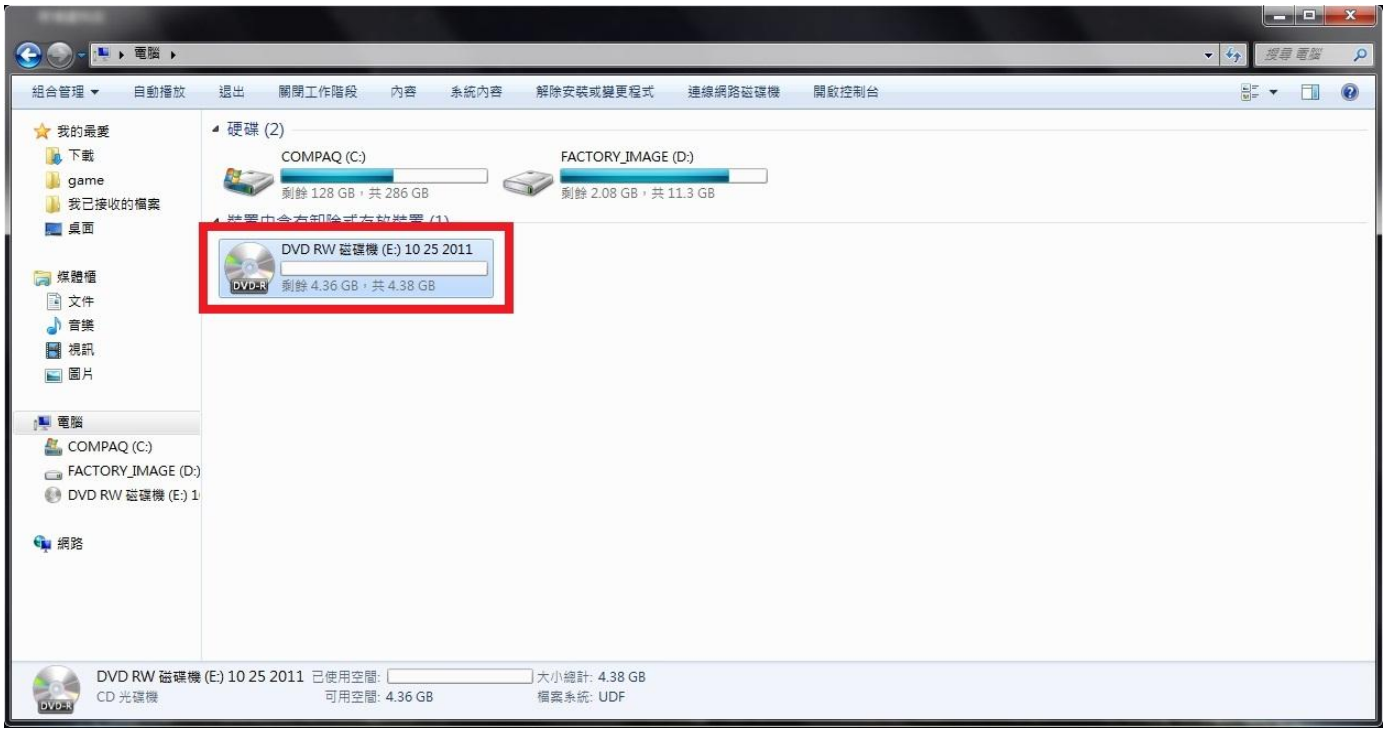
User Guide

System requirement

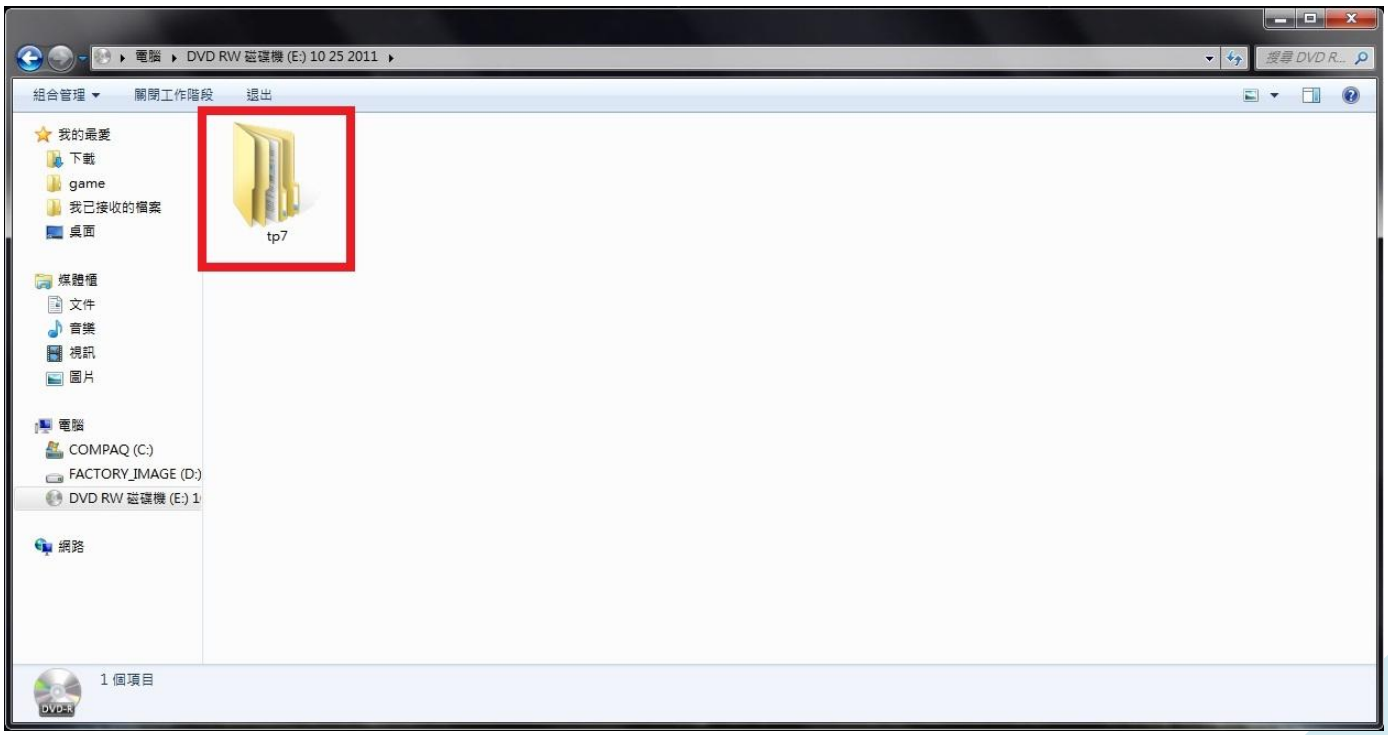
Operating system	**Windows 95/98/2000/me/XP**
CPU	**1GHZ or above**
Hard disk memory space	**10MB**
Memory requirement	**30MB RAM**
Revolution	**800 * 600 or above**
Hardware	**Keyboard , Mouse , Monitor**
Complier	**Turbo Pascal 7.0**

Start the Game

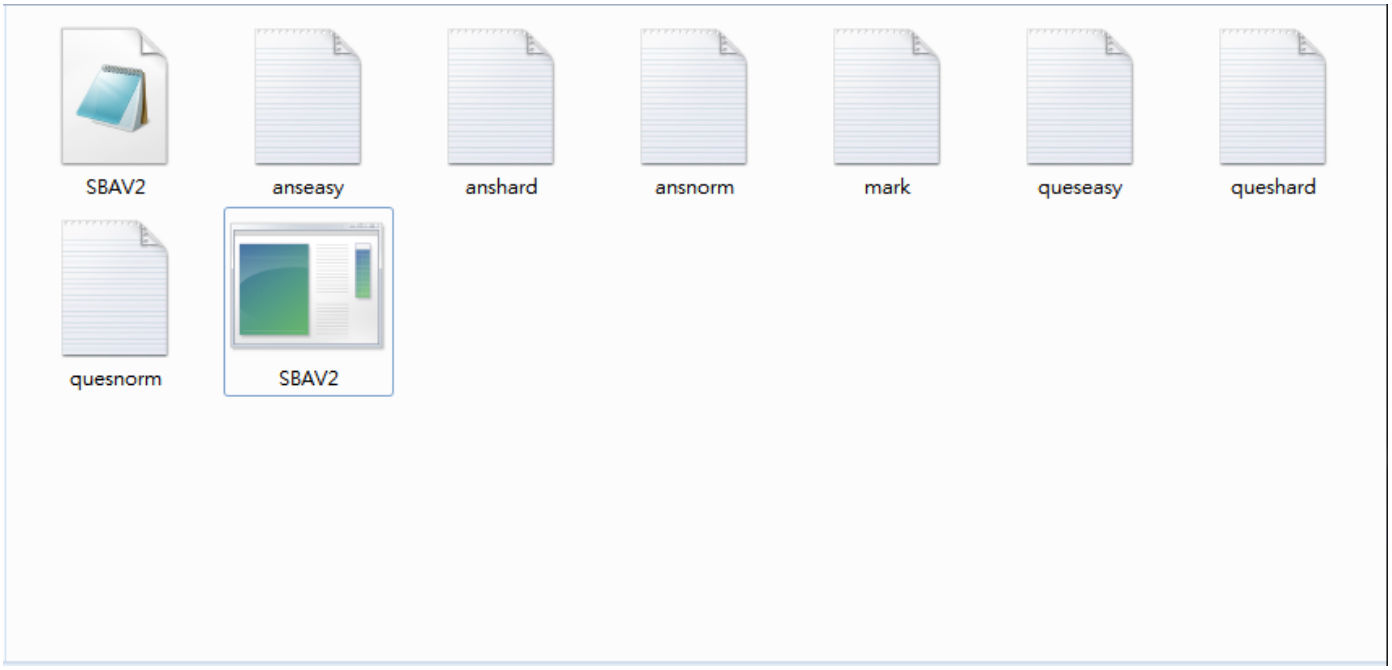
1. Insert the CD into the CD drive



2. Double kick the CD ↑



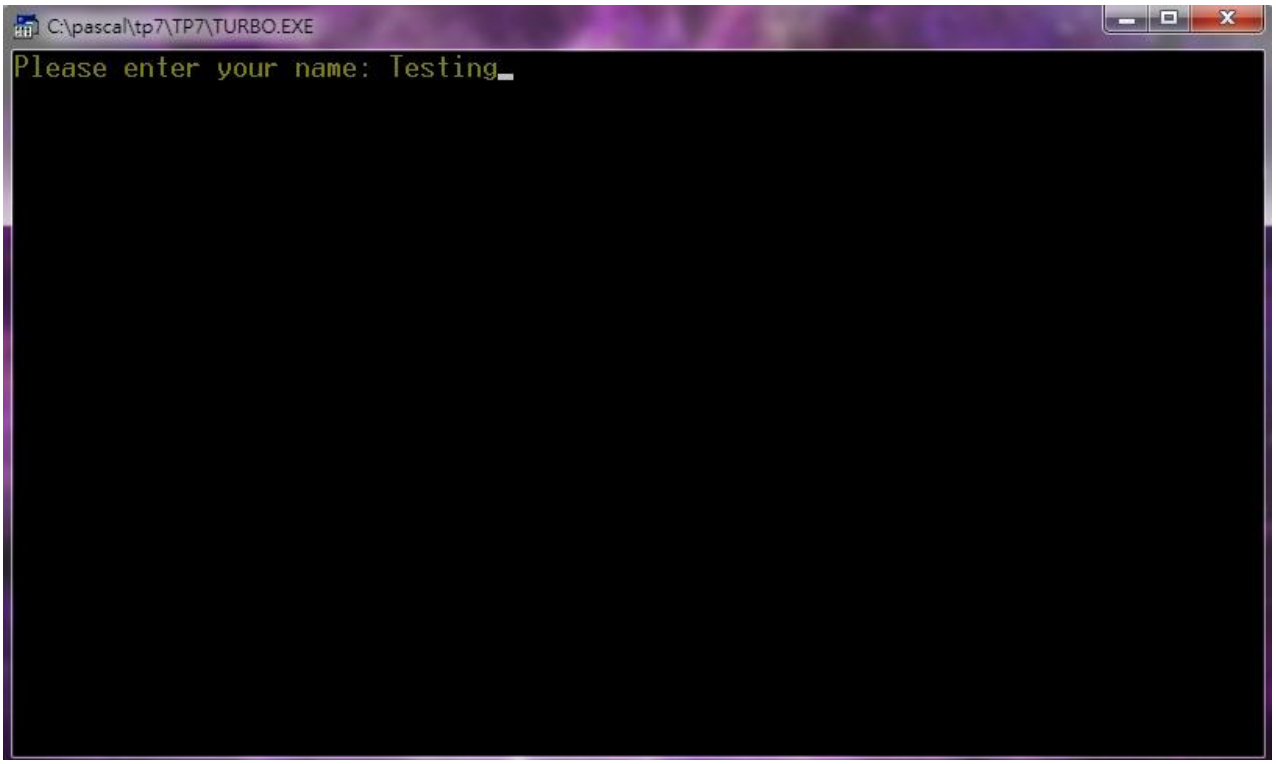
3. Open the folder ‘TP7’ ↑



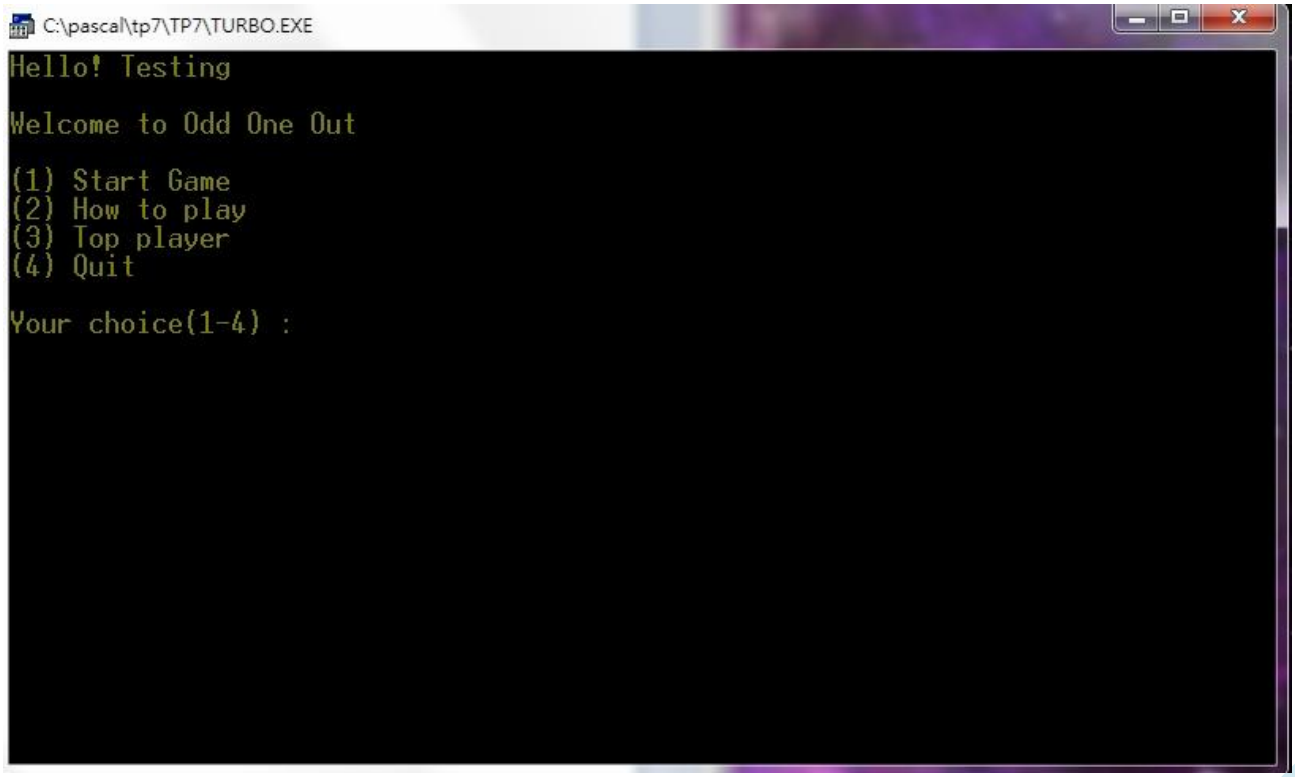
4. Double kick the exe file ‘SBAV2’ ↑

Play the Game

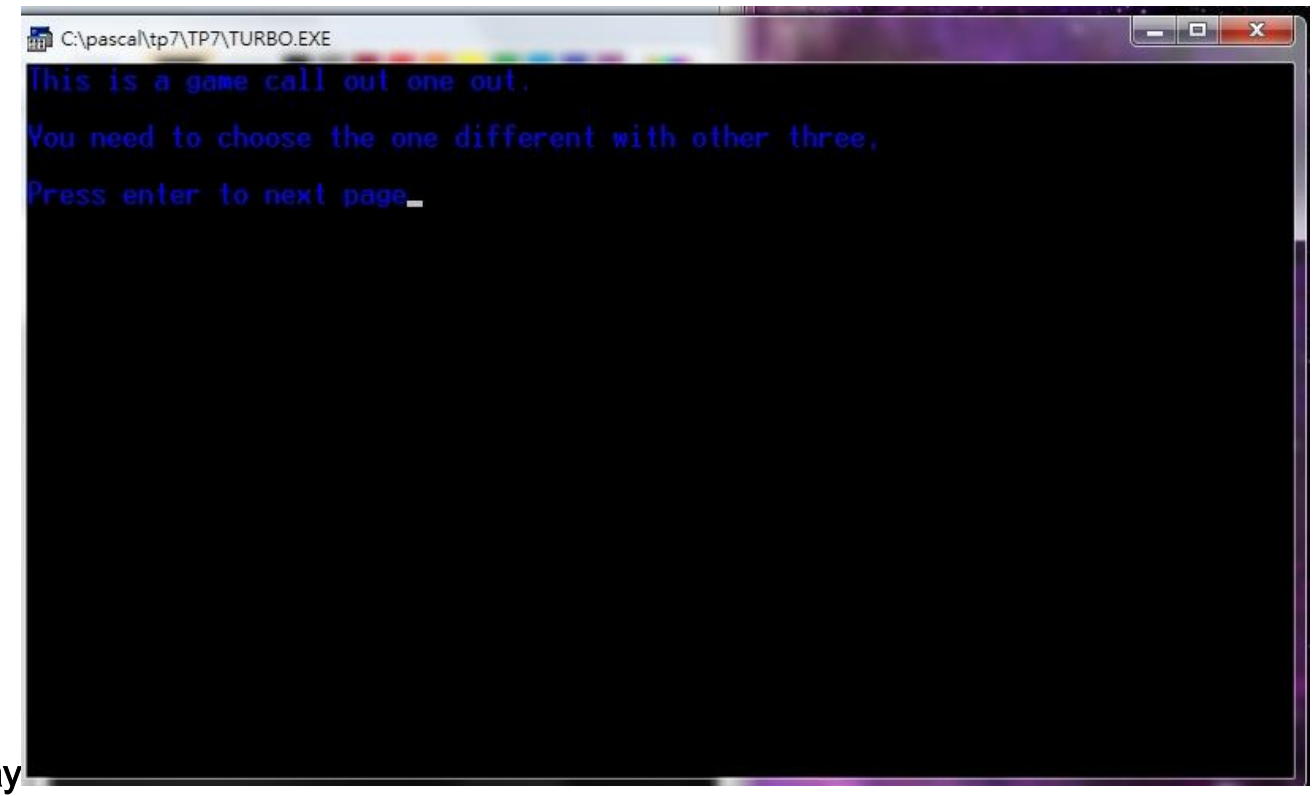
1. Enter your name , at most 10 characters



2. The main menu , input the number you want (1 / 2 / 3 / 4)



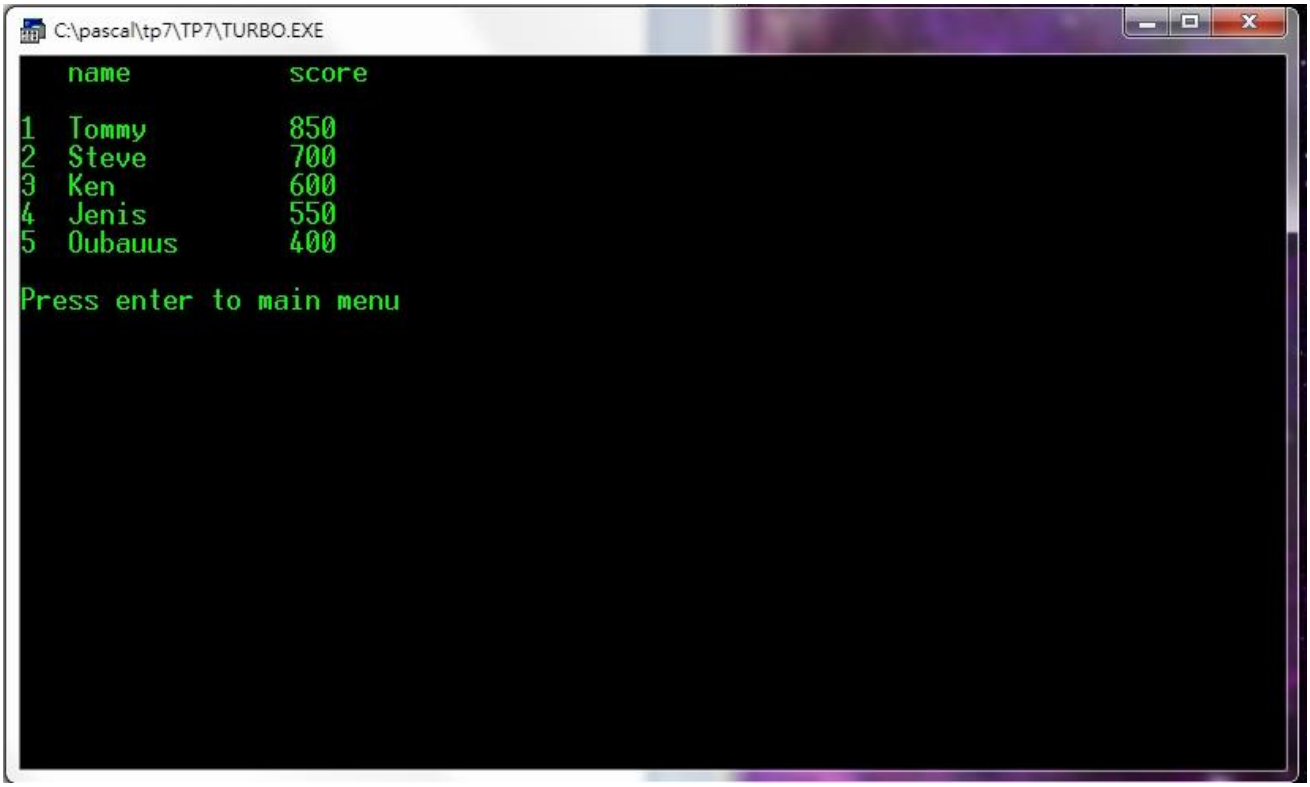
3. How to play



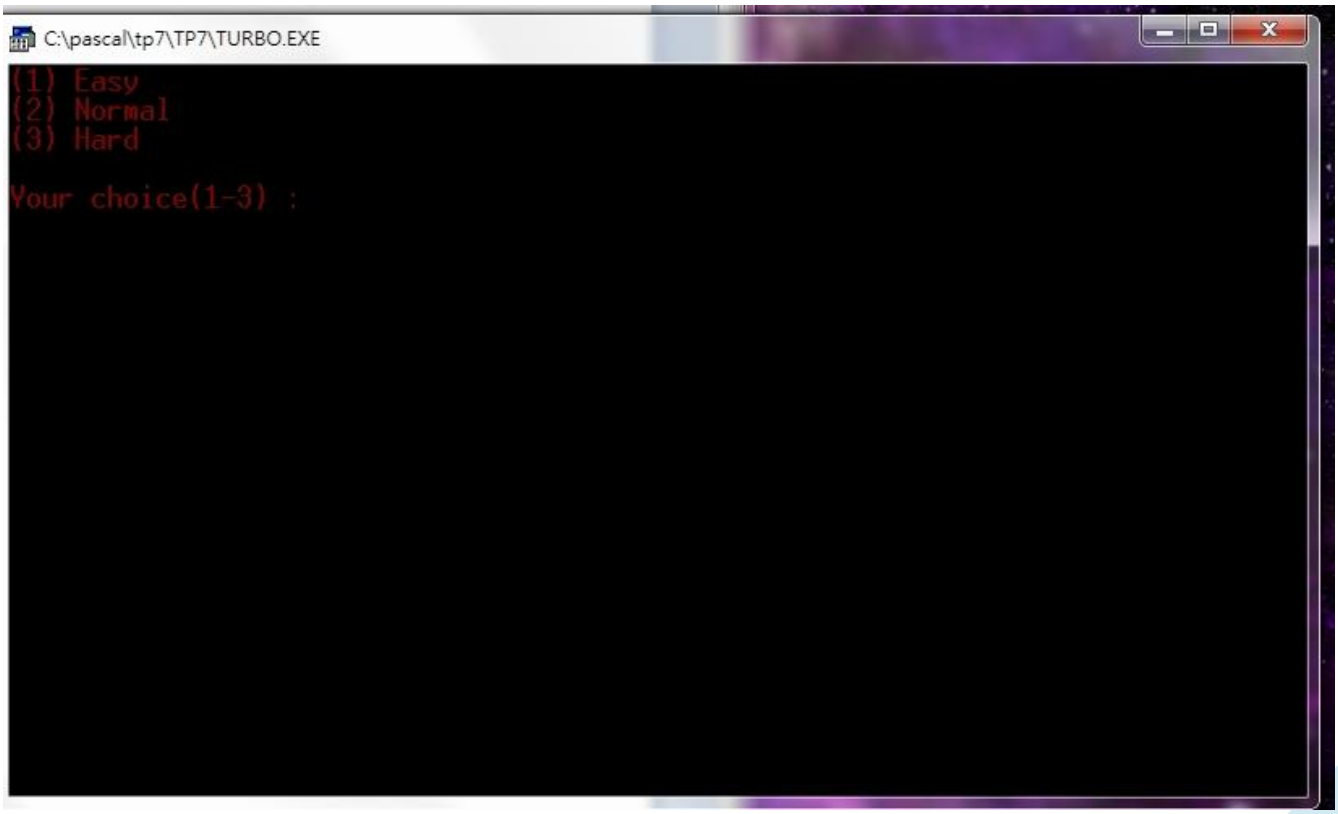
You can input "2" in the main menu , learn how to play "odd one out"

4. The top

player

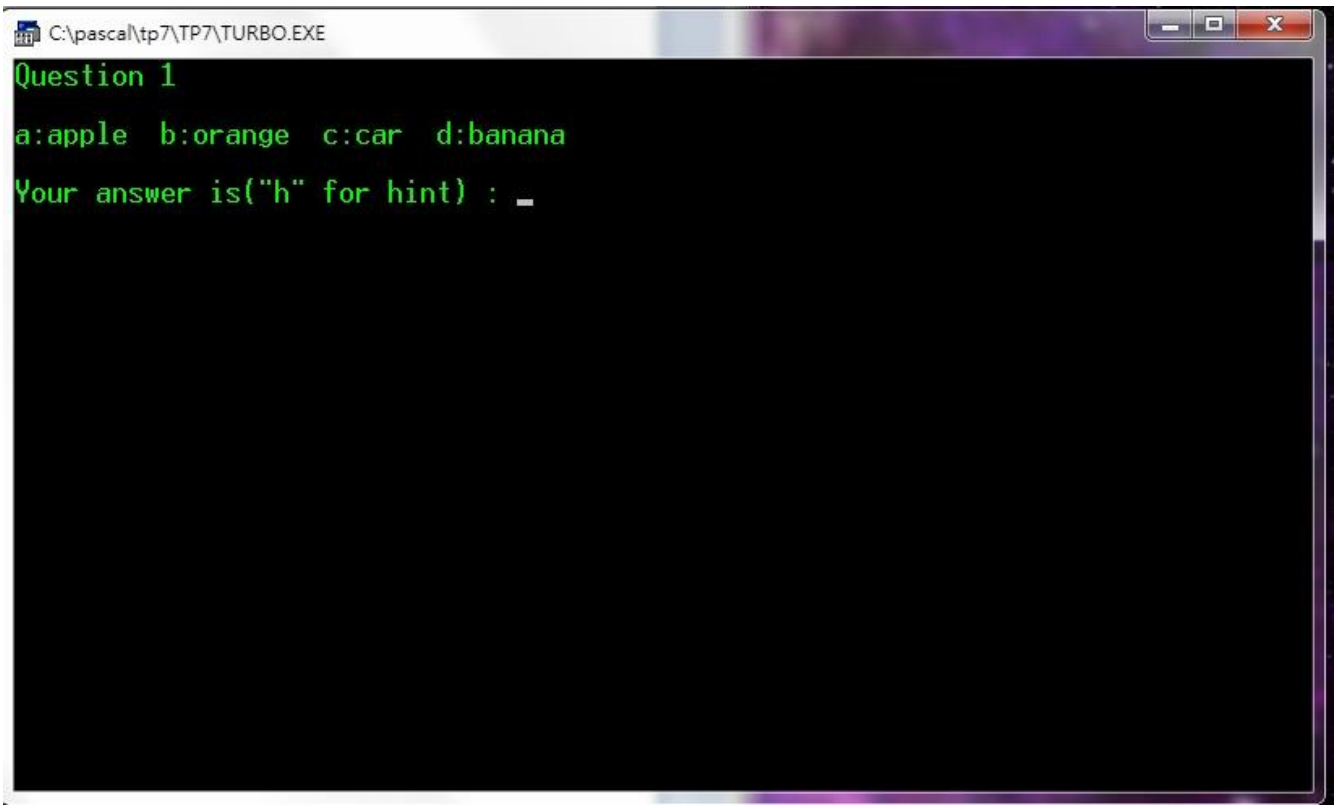


5. Start the game



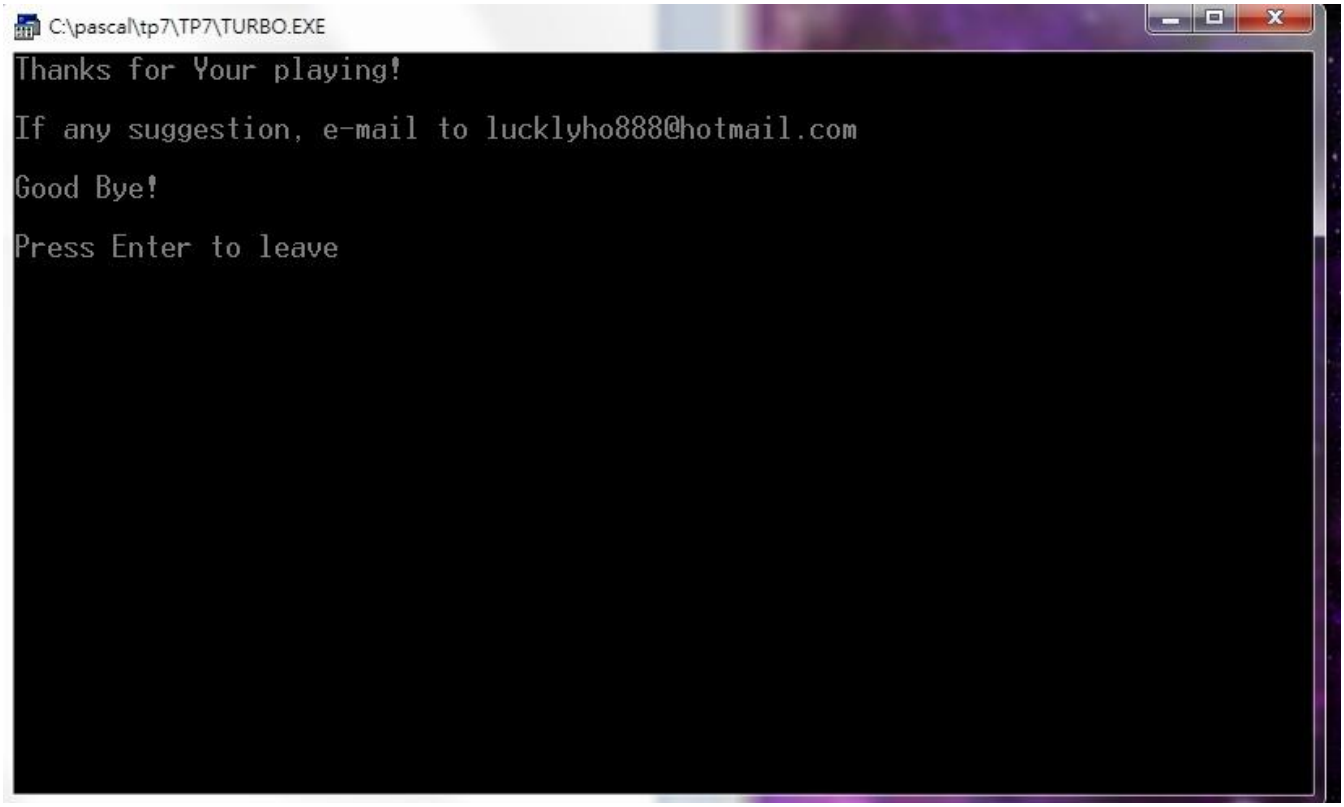
Input ”1” in the main menu to this screen. You can choose level here.

Interface of the game . ↓



6.

End


C:\pascal\tp7\TP7\TURBO.EXE
Thanks for Your playing!
If any suggestion, e-mail to lucklyho888@hotmail.com
Good Bye!
Press Enter to leave

Testing and Evaluation

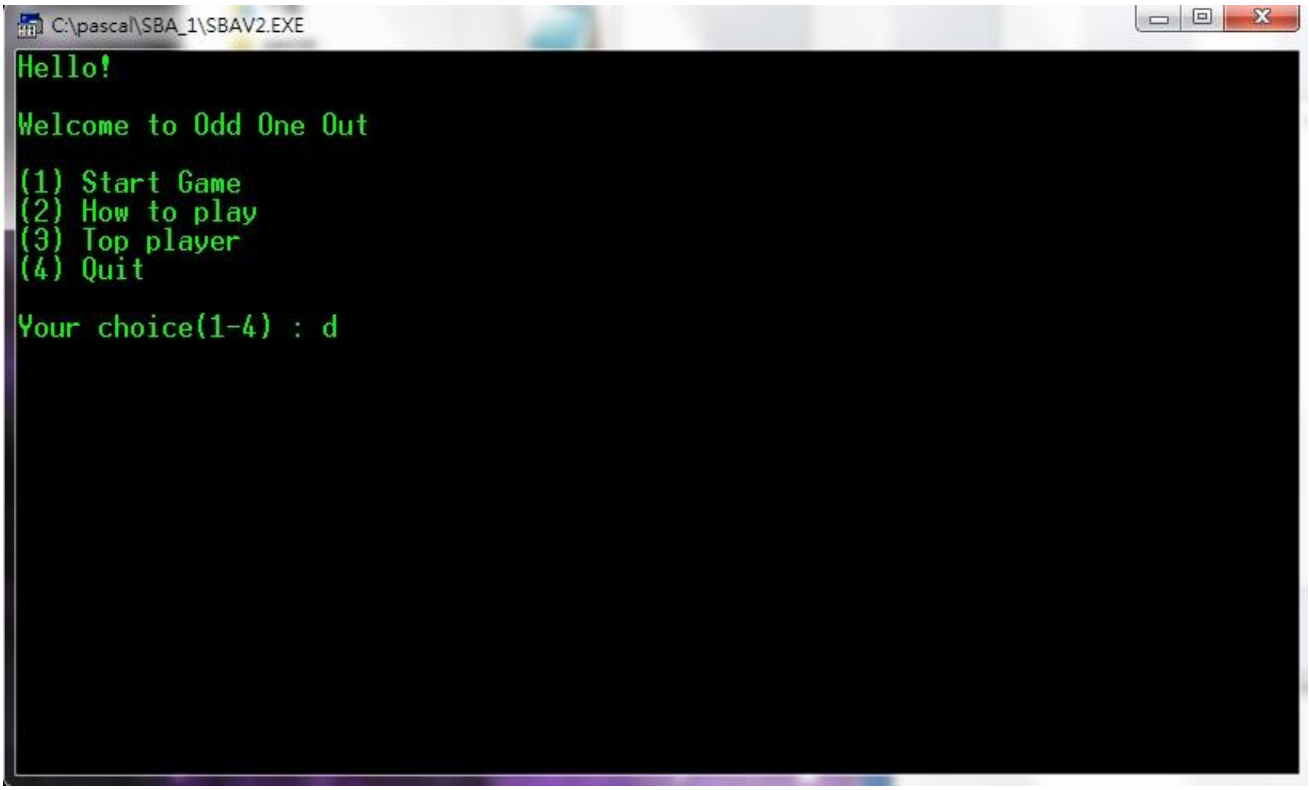
Testing

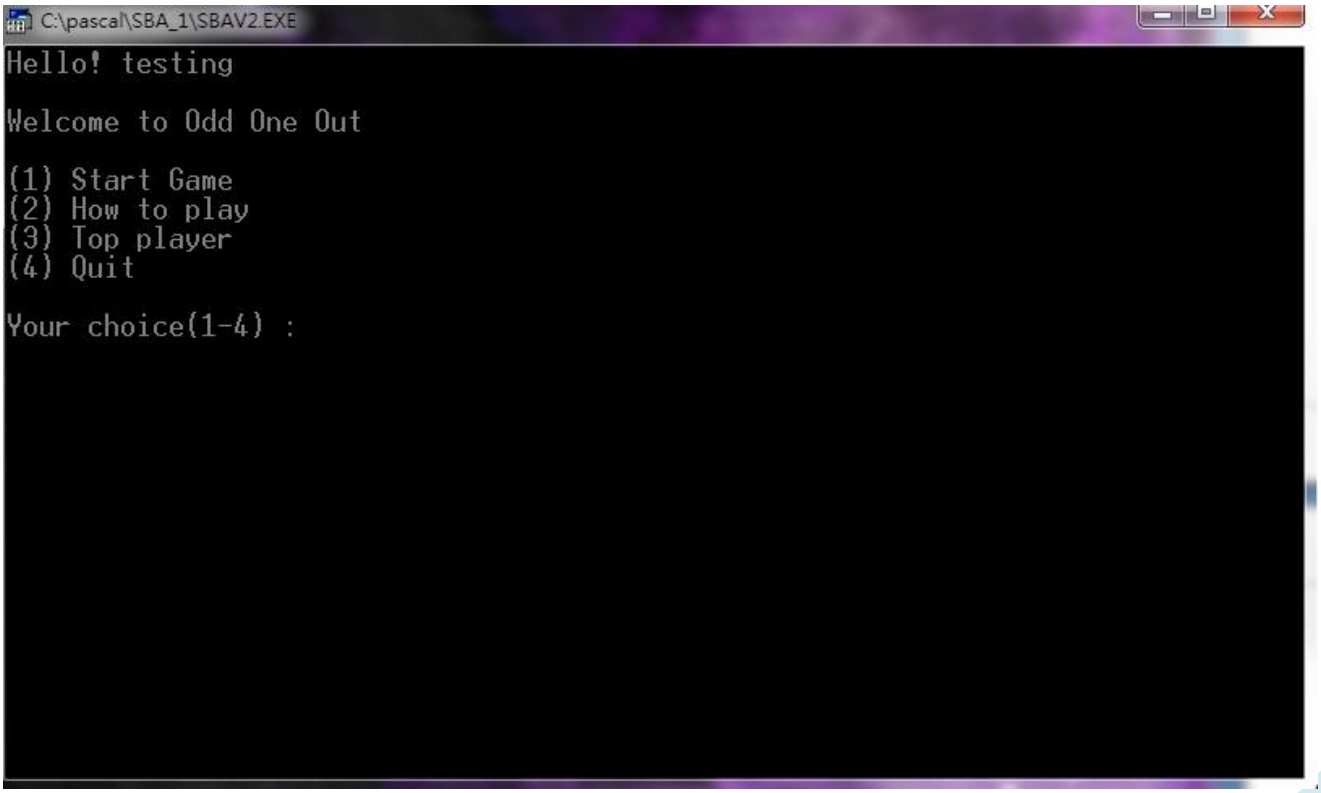
Case1 . More than 10 characters input into user name

Message show on the screen , no error happen .

Case2 . Invalid input at main

menu

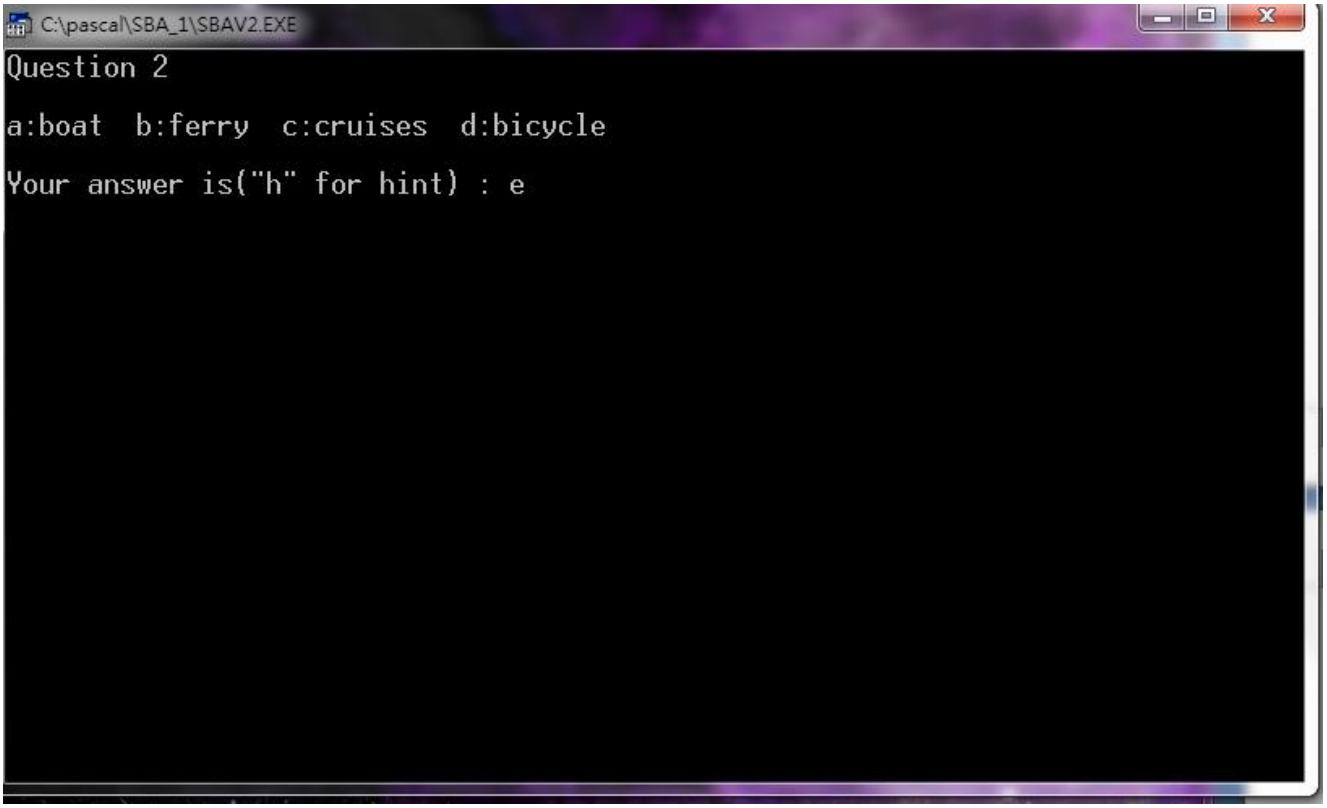


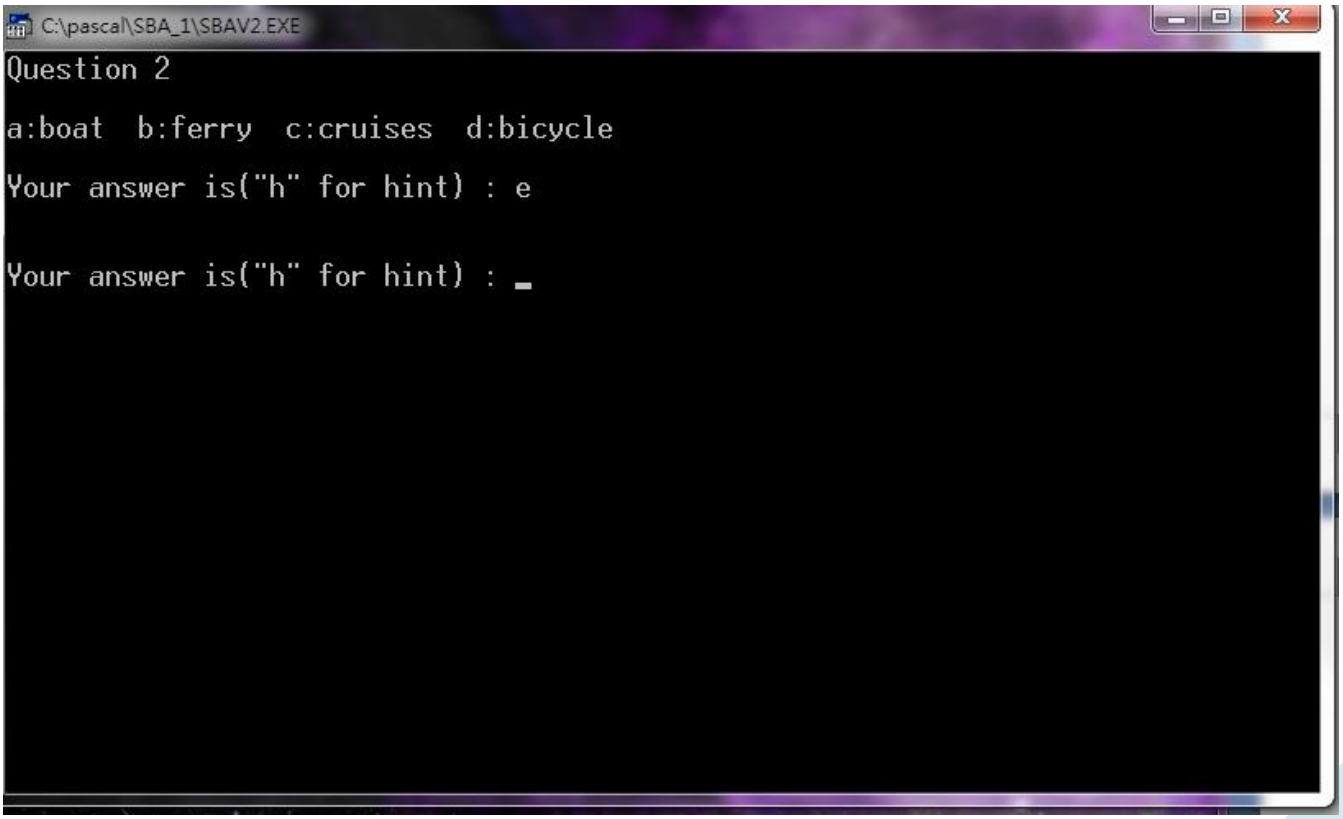


No message show on the screen to let user know the input is incorrect ,

but the program can also keep running .

Case3 . Invalid input during the game





No message show on the screen to let user know the input is incorrect ,

but the program can also keep running .

Conclusion :

The program can handle most of incorrect input without

sudden interrupt or any error. But in some part of the program ,

no any message show to the user that the input is wrong .

Enhancement :

When invalid input , error message should display on screen let user

know that when case2 & 3 happen

Evaluation

After the testing , in different validation checking part the program perform well . User should be input with the valid input before go to next step in the game, also thereis no any sudden interrupt happen while testing .

In the program there are several advantages and disadvantage .

Advantage :

1. Uncomplicated user interface
2. Perform well at validation check

Disadvantage :

1. No any prompt when invalid input sometimes.
2. Questions in the game may be too easy.
3. Only one game include in the program .

Discussion

At the beginning of the project two problems makes me confused ,it is about the questions display in the game .Define lots of variable to store the questions is not a wise way .So that I decide to use parallel array .
Use two arrays to contain questions and solution .

Another problem confuse me is the sorting of the top player .In the case I need to sort the parallel array . But bubble sort method inreference book only provide a sample bubble sort algorithm . I need to improve the bubble make it can hold the swapping in parallel array

After finishing the project , I learn more about programming , also I improve my
way of thinking . I can try to find out the convenient way to solve a problem .

Conclusion

It is one of the big scale project I have been done. I learn lots of thing in this project.

Finishing the program is more difficult than imagine. When I choose 'Odd one out' be the topic of the program , I do think it is a easy theme. But during developing the program , I change my mind .

Question displaying & storing , check the answer, top5 player … Many problem appear . lots of bugs makes me fretful .

Besides the above problem , my bad time management also hinder the progress of the project . It makes me can not
submit the program on time .

After the project , I know that the program and the projectare not prefect but I tried to finish as well as possible .

Reference

Book
《Turbo Pascal 入門與應用徹底剖析》

Website
www.google.com Google
http://zh.wikipedia.org/wiki/Wiki