

Review Questions

November 28, 2014

1 C Programming

Question 1

- (a) Describe what is pseudo-code?
- (b) To develop system by using Amazon Web Service, programmer needs to learn the API that is provided by Amazon. What is the full name of API and what does it use for?
- (c) What are the names of the operating systems running in the iPhone 6, HTC Butterfly and Nokia Lumina?
- (d) Different programming languages have different programming syntax. True/False?
- (e) Describe what are logical error and syntax error?

Question 2

Below is the source code of a program with filename "ageweight.cpp".

```
#include<stdio.h>

main() /* Main function. */
{
int YOB; /* Define integer variable YOB. */
int Age; /* Define integer variable Age */
int Weight; /* Define integer variable Weight. */

printf("Enter your year of birth (e.g. 1995): ");
scanf("%d", &YOB);
printf("Enter your weight in KG: ");
scanf("%d", &Weight);

Age = 2014 - YOB;
printf("Your age is %d and your weight is %d.\n", Age, Weight);
}
```

- (a) Which command is intended to be processed by C preprocessor instead of C compiler?
- (b) If "main()" is replaced by "void main()", will it affect the compilation of the program?
- (c) If "main()" is replaced by "int main()", will it affect the compilation of the program?

- (d) If "Age = 2014 - YOB" is replaced by "age = 2014 - YOB", will it affect the compilation of the program?
- (e) After you have entered your year of birth (say 1995) and your weight (say 76), what will you see on your screen?
- (f) After you have successfully compiled this file "ageweight.cpp", a new file will be created. What is its file name?
- (g) If second "%d" in the last command is changed to "%f", what will you see after the program has been compiled and executed?

Question 3

The program below has a little difference from the program above.

```
#include<stdio.h>

main() /* Main function. */
{
int YOB; /* Define integer variable YOB. */
int Age; /* Define integer variable Age */
int Weight; /* Define integer variable Weight. */

printf("Enter your year of birth (e.g. 1995): ");
scanf("%d", YOB);
printf("Enter your weight in KG: ");
scanf("%d", &Weight);

Age = 2014 - YOB;
printf("Your age is %d and your weight is %d.\n", Age, Weight);

}
```

- (a) Compared with the previous program, what is the difference?
- (b) Compiling this program by DevC, will it succeed?
- (c) After you have entered your year of birth (say 1995) and your weight (say 76), describe what will you see?

Question 4

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]; /* Define a character string called Name. */

printf("Please enter your name: ");
```

```

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

Age = 2014 - YOB;
printf("%s, your year of birth is %d.\n", Name, YOB);
printf("So, your age is %d.\n", Age);

}

```

- (a) What is the maximum number of characters for a name? If we enter a name the number of character is larger than the limit, what will you see?
- (b) Executing the above program, enter your name (say John) and your year of birth (say 1995), describe what will you see?

Question 5

```

#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 Marketing.\n");
    printf("You are now the %d number of student.", SNM);
}
else
{
    SNA = SNA + 1;
    printf("You have successfully registered Accounting.\n");
    printf("You are now the %d number of student.", SNA);
}

}

```

- (a) What will you see after you have entered "a"?
- (b) What will you see after you have entered "b"?

- (c) What will you see after you have entered "c"?
- (d) Modify the program so the program will give an error message "Wrong choice! You can only enter 'a' or 'b'!" once the choice is not 'a' or 'b'.