**SCIFF009 – Fundamentals of Programming**

**Individual Assignment**

Student Name: Phoebe Chan Mun Zheng

Id: 20312783

Email: hfypc4@nottingham.edu.my

Contact Number: 01112213229

**Table of Contents**

Flowchart1

Pseudocode4

Coding6

Testdata8

Output10

Marking Rubric15

**Flowchart**

Input pin number

Is the pin number correct?

Output:

“PLEASE ENTER VALID PASSWORD”

No

Yes

Output: “MAIN MENU”

Choose:

1. Check Balance
2. Withdraw Cash
3. Deposit Cash
4. Quit
5. Check Balance

3. Deposit Cash

2. Withdraw Cash

B

4. Quit

5. Default

E

D

“ENTER AMOUNT TO DEPOSIT”

Output: “CURRENT BALANCE”

Amount= amount+ deposit

I

A

J

C

M

L

K

No

No

No

Yes

Yes

Yes

M

L

K

H

G

F

No

No

Yes

Yes

Another transaction?

“ENTER AMOUNT TO WITHDRAW”

Is the amount withdraw in multiples of 50?

Amount= amount- withdraw

Is withdraw more than RM 500?

“INSUFFICIENT BALANCE”

“PLEASE ENTER THE AMOUNT IN MULTIPLES OF 50”

“PLEASE COLLECT CASH, CURRENT BALANCE”

B

Another transaction?

“CURRENT BALANCE”

C

Another transaction?

A

Yes

Yes

No

No

J

I

H

G

F

“THANKS FOR USING OUR ATM SERVICE”

Another transaction?

Another transaction?

“INVALID CHOICE”

“THANK YOU FOR USING ATM”

D

E

**Pseudocode**

START

INPUT pin number

READ pin number

IF

pin number=5200

DISPLAY main menu

ELSE

PRINT please enter valid password

END IF

INPUT choice from main menu

READ choice from main menu

Case 1, Check Balance

DISPLAY balance

PRINT do you wish to have another transaction? (y/n)

INPUT y/n

READ y/n

IF

value entered ≠’n’/’N’

go back to main menu

ELSE

DISPLAY thanks for using our ATM service

STOP

Case 2, Withdraw Cash

INPUT the amount to withdraw

READ the amount to withdraw

IF

the amount to withdraw is not in multiples of 50

DISPLAY please enter the amount in multiples of 50

ELSE IF

withdraw> (amount-500)

DISPLAY insufficient balance

ELSE

amount= amount-withdraw

DISPLAY please collect cash

DISPLAY balance

END IF

PRINT do you wish to have another transaction? (y/n)

INPUT y/n

READ y/n

IF

value entered ≠’n’/’N’

go back to main menu

ELSE

DISPLAY thanks for using our ATM service

STOP

Case 3, Deposit Cash

INPUT the amount to deposit

READ the amount to deposit

amount= amount+ deposit

DISPLAY balance

PRINT do you wish to have another transaction? (y/n)

INPUT y/n

READ y/n

IF

value entered ≠’n’/’N’

go back to main menu

ELSE

DISPLAY thanks for using our ATM service

STOP

Case 4, Quit

DISPLAY thank you for using ATM

PRINT do you wish to have another transaction? (y/n)

INPUT y/n

READ y/n

IF

value entered ≠’n’/’N’

go back to main menu

ELSE

DISPLAY thanks for using our ATM service

STOP

Case 5, Default

DISPLAY invalid choice

PRINT do you wish to have another transaction? (y/n)

INPUT y/n

READ y/n

IF

value entered ≠’n’/’N’

go back to main menu

ELSE

DISPLAY thanks for using our ATM service

STOP

**Coding**

#include <stdio.h>

unsigned long amount=1000,deposit,withdraw;

int pin,choice,i;

char transaction='y';

void main()

{

while(pin !=5200)

{

printf("ENTER YOUR PIN NUMBER: ");

scanf("%d",&pin);

if (pin !=5200)

printf("PLEASE ENTER VALID PIN NUMBER\n");

}

do

{

printf("\*\*\*\*\*\*\*\*Welcome to ATM service\*\*\*\*\*\*\*\*\n");

printf("1.Check Balance\n");

printf("2.Withdraw Cash\n");

printf("3.Deposit Cash\n");

printf("4.Quit\n");

printf("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*?\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*?\n\n");

printf("Enter your choice: ");

scanf("%d",&choice);

switch(choice)

{

case 1:

printf("\nYOUR BALANCE IN :RM%lu",amount);

break;

case 2:

printf("\nENTER THE AMOUNT TO WITHDRAW: ");

scanf("%lu",&withdraw);

if(withdraw%50!=0)

{

printf("\nPLEASE ENTER THE AMOUNT IN MULTIPLES OF 50");

}

else if (withdraw>(amount-500))

{

printf("\nINSUFFICENT BALANCE");

}

else

{

amount= amount-withdraw;

printf("\nPLEASE COLLECT CASH");

printf("\nYOUR CURRENT BALANCE IS RM%lu",amount);

}

break;

case 3:

printf("\nENTER THE AMOUNT TO DEPOSIT: ");

scanf("%lu",&deposit);

amount= amount+ deposit;

printf("YOUR BALANCE IS RM%lu",amount);

break;

case 4:

printf("\nTHANK YOU FOR USING ATM");

break;

default:

printf("\nINVALID CHOICE");

}

printf("\n\n\n DO YOU WISH TO HAVE ANOTHER TRANSACTION?(y/n): \n");

fflush(stdin);

scanf("%c",&transaction);

if(transaction=='n'||transaction=='N')

i=1;

}while(!i);

printf("\n\nTHANKS FOR USING OUR ATM SERVICE");

}

**Test data**

|  |  |  |
| --- | --- | --- |
| No. | Test Case | Output |
| 1. | Enter pin number |  |
| 2. | Input option from main menu  Enter 1 |  |
| 3. | Input option from main menu  Enter 2 |  |
| 4. | Input option from main menu  Enter 3 |  |
| 5. | Input option from main menu  Enter 4 |  |
| 6. | Input option from main menu  Enter 5 |  |
| 7. | Option to proceed to another transaction (y/n) |  |

**Output**

|  |  |
| --- | --- |
| 1. | Valid pin number |
|  |  |
|  | Invalid pin number |
|  |  |

|  |  |
| --- | --- |
| 2. | Total amount of balance |
|  |  |

|  |  |
| --- | --- |
| 3. | Withdraw not more than RM 500 |
|  |  |
|  | Withdraw more than RM 500 |
|  |  |
|  | Withdraw amount which is not in the multiple of 50 |
|  |  |

|  |  |
| --- | --- |
| 4. | Amount of deposit and current balance |
|  |  |

|  |  |
| --- | --- |
| 5. | Exit |
|  |  |

|  |  |
| --- | --- |
| 6. | Number which is not in the main menu option |
|  |  |

|  |  |
| --- | --- |
| 7. | Enter ‘y’ |
|  |  |
|  | Enter ‘n’ |
|  |  |

**Marking Rubric**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Group** | **CRITERIA** | **EXCELLENT** | **GOOD** | | **SATISFACTORY** | **UNSATISFACTORY** | **TOTAL** |
|  |  | **10** | **8-9** | | **6-7** | **5** |  |
| **Pseudocode** | Start/stop of the program | Complete with start/ stop of the programme |  | | | No start/stop of program and no capital letter (keywords) and no indentation. |  |
| Appropriate capital letter (keywords) | Complete use of appropriate capital letter( keywords) throughout the programme | Use of appropriate capital letter( keywords) in majority part of the programme | Use of few capital letter( keywords) within the programme | | Not using capital letter( keywords) in a program |  |
| Appropriate indentation | Appropriate indentation throughout programme | Appropriate  Indentation in majority part of the programme | Few appropriate  Indentation in the programme | | No indentation in the programme |  |
| **Flowchart** | Symbol | Correct symbols throughout the chart | Less than 2 mistakes of  symbols | More than 2 mistakes of symbols | | Inappropriate symbol |  |
| Logic on control structure in the chart | Correct logic presented in the chart | Less than 2 mistakes of  Logic in the chart | More than 2 mistakes of logic in the chart | | Inappropriate logic presented in the chart |  |
| **Test data** | Range | Covering all the possible pathway | Covering majority of pathway | Covering average number of pathway based on your program | | Covering any random pathway only |  |
| **Output** | Accuracy of output based on range of test data | Accurate and covering all the possible pathway | Accurate and covering majority of pathway | Accurate and covering average number of pathway based on your program | | Acceptable output and covering any random pathway only |  |
| **Coding** | Coding and creativity | Able to execute without any error and additional creativity such as use of array/function/ file management wherever its applicable in meeting basic requirements of the program. | Able to execute without any error and additional creativity such as use of array, function in meeting basic requirements of the program. | Able to execute without any error and meet basic requirements of the program | | Able to execute with inaccurate output and missing of basic requirements of the program. |  |
| **Feedback TOTAL** | | | | | | | **/80** |