

NAME: Rakyan Satrya Adhikara

ID: ADHRSD1902

CAMPUS: Jakarta

Introduction to Programming

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QUIZ NAVIGATION

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Started on Tuesday, 27 August 2019, 10:15 AM

State Finished

Completed on Tuesday, 27 August 2019, 11:15 AM

Time taken 59 mins 44 secs

Grade Not yet graded

Question 1

Complete

Marked out of 1.00

Flag question

For the following program, hand execute this code and write all of the values that each variable stored during the execution of the code. You must write down all of the different values that the variable stored, not just the final value.

```
#include "splashkit.h"
double read_double(string prompt)
{
    string input = "empty";
    write(prompt);
    input = read_string();
    return convert_to_double(input);
}

int main()
{
    double pi = 3.14159;
```

```
double radius = 0;
double area = 0;
radius = read_double ("Please give me a radius: ");
area = pi * (radius * radius);
write_line("The area of the circle is: " + std::to_string(area) );
return 0;
}
```

```
// FIRST TRY
1. pi = 3.14159
2. radius = 0 // Initial value
3. area = 0 // Initial value
4. prompt = "Please give me a radius: "
5. input = "empty" // Initial value
6. input = "4" // After read_string()
7. radius = 4 // After return
8. area = 50.265440 // After calculation
```

```
// SECOND TRY
1. pi = 3.14159
2. radius = 0 // Initial value
3. area = 0 // Initial value
4. prompt = "Please give me a radius: "
5. input = "empty" // Initial value
6. input = "3.57" // After read_string()
7. radius = 3.57 // After return
8. area = 40.039250 // After calculation
```

Question 2

Correct

Mark 1.00 out of 1.00

Flag question

Match the two halves of the code for each of the following instructions:

fill_triangle	(COLOR_GRAY, 120, 50, 100, 120, 140, 100);	✓
int age	= 18;	✓
fill_rectangle	(COLOR_BLUE, 10, 20, 450, 350);	✓
string unit_name	= "Introduction to Programming";	✓
double grade	= 75.6;	✓
bool minor	= false;	✓

Your answer is correct.

Question 3

Correct

Mark 1.00 out of 1.00

Flag question

When discussing different methods of controlling the flow of a program's execution, which of the following is **not** a valid category?

Select one:

- ☒ a. Artefacts ✓
- ☐ b. Repetition
- ☐ c. Selection
- ☐ d. Sequence

Your answer is correct.

Question 4

Correct

Mark 1.00 out of 1.00

Flag question

Which of the following is the correct format for declaring a basic variable and assigning it a value?

Select one:

- ☒ a. data_type identifier = value; ✓
- ☐ b. var identifier = value;
- ☐ c. data_type identifier == value;
- ☐ d. data_type identifier(value);

Your answer is correct.

Question 5

Correct

Mark 1.00 out of 1.00

Flag question

Evaluate the following condition expression to determine the final calculated value:

```
double grade = 87.5;
string name = "SIT102"
if ( (grade >= 80) and (name != "SIT102") )
```

Select one:

- ☐ True
- ☒ False ✓

Question 6

Complete

Marked out of 1.00

Flag question

Write code for a program that will allow the user to convert between pounds and kilograms.

1 pound (lb) is equal to 0.45359237 kilograms (kg).

- Show the user a menu:
 - 1: Pounds to Kilograms
 - 2: Kilograms to Pounds
 - 3: Quit
- Ask the user to choose an option.
- Based on their selection perform the necessary conversion and output the result to the terminal
- Repeat this until they choose to quit

Pounds to Kilograms is calculated as: Kilograms = Pounds * 0.45359237

Kilograms to Pounds is calculated as: Pounds = Kilograms / 0.45359237

Make sure to demonstrate the use of custom procedures and functions in your code. For example display_menu can be used to output the menu each time within the loop, and pounds_to_kilograms can be used to perform one of the calculations.

Note: There are multiple ways to structure this solution. However, in each case things like names of identifiers, sequences of instructions, and indentation will be important.

Please use VS Code to write and test your solution, then you can include it here (either copy and paste the code, or upload the .cpp file)

Remember you can use your functions from earlier tasks (e.g. Task 2.1P) to read values from the user - if you rewrite these yourself you'll have less time for the rest of this question.

- display_menu() = to display all available options
- kilogram_to_pounds() = to convert input number (in pounds) into another number (kilograms) by multiplying it with 0.45359237. If you set the input, not with a number, it will stop the program immediately.
- pounds_to_kilogram() = to convert input number (in kilograms) into another number (pounds) by dividing it with 0.45359237. If you set the input, not with a number, it will stop the program immediately.



Kilograms to Pounds is calculated as: $\text{Pounds} = \text{Kilograms} / 0.45359237$

Make sure to demonstrate the use of custom procedures and functions in your code. For example `display_menu` can be used to output the menu each time within the loop, and `pounds_to_kilograms` can be used to perform one of the calculations.

Note: There are multiple ways to structure this solution. However, in each case things like names of identifiers, sequences of instructions, and indentation will be important.

Please use VS Code to write and test your solution, then you can include it here (either copy and paste the code, or upload the .cpp file)

Remember you can use your functions from earlier tasks (e.g. Task 2.1P) to read values from the user - if you rewrite these yourself you'll have less time for the rest of this question.

- `display_menu()` = to display all available options
- `kilogram_to_pounds()` = to convert input number (in pounds) into another number (kilograms) by multiplying it with 0.45359237. If you set the input, not with a number, it will stop the program immediately.
- `pounds_to_kilogram()` = to convert input number (in kilograms) into another number (pounds) by dividing it with 0.45359237. If you set the input, not with a number, it will stop the program immediately.
- `select_menu()` = it will allow the user to select which option will be used. There's a loop here and it will exit from the loop if the user enters the 'Quit' option. If the user did not enter with any of the available options, it will start again from the beginning.

program.cpp

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