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| **Lab 4.1** |

**Objectives:**

* The if Statement DONE

You have been asked to create an application that determines if a student has passed a course. **If the student has a mark of 50 or more, they have passed the course**. Ensure your program contains appropriate comments.

Follow the steps to create the program:

STEP 1: Create a variable to hold the test score of a student.

STEP 2: Prompt the user to enter the test score.

STEP 3: If the student has passed the course display a message.

STEP 4: Save the file as testScore.py

STEP 5: Compile and run your program.

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| **Lab 4.2** |

**Objectives:**

* The if Statement DONE

You have been asked to create an application that displays a warning message if the money in a person’s bank accounts is low. You need to display the message “Savings account balance is low” if the savings account balance is less than $100. Display the message “Checking account balance is low” if the checking account balance is less than $50. Ensure your program contains appropriate comments.

Follow the steps to create the program:

STEP 1: Create variables to hold the savings account balance and the checking account balance.

STEP 2: Prompt the user to enter the savings account balance and the checking account balance.

STEP 3: Check if the savings account balance is low and display a message if it is.

STEP 4: Check if the cheque account balance is low and display a message if it is.

STEP 5: Save the file as bankBalance.py

STEP 6: Compile and run your program.

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| **Lab 4.3** |

**Objectives:**

* The if-else Statement DONE

You have been asked to create an application for a furniture company to determine the price of a table. Ask the user to choose 1 for pine or 2 for oak. The output is the name of the wood chosen as well as the price of the table. Pine tables cost $100 and oak tables cost $285.

Ensure your program contains appropriate comments.

Follow the steps to create the program:

STEP 1: Create a variable to hold the users selection.

STEP 2: Prompt the user to enter their selection of wood for the table.

STEP 3: Based on the user’s choice, display the name of the wood chosen and the cost of the table.

STEP 4: Save the file as furniture.py

STEP 5: Compile and run your program

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| .**Lab 4.4** |

**Objectives:**

* The if-else Statement

You have been asked to create an application to calculate an employee’s gross pay, withholding tax and net pay given their hourly pay rate and the number of hours worked. Withholding tax is computed as a percentage of gross pay based on the following:

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| --- | --- |
| Gross Pay ($) | Withholding (%) |
| Up to and including 300.00 | 10 |
| 300.01 and up | 15 |

Ensure your program contains appropriate comments.

Follow the steps to create the program:

STEP 1: Create variables to hold the hourly pay rate, the number of hours worked, the gross pay, the withholding tax percentage, the withholding tax and the net pay.

STEP 2: Prompt the user to enter the hourly pay rate and the number of hours worked.

STEP 3: Calculate the gross pay as hourly pay rate multiplied by the number of hours worked.

STEP 4: Determine the withholding tax percentage based on the gross pay.

STEP 5: Calculate the withholding tax as gross pay multiplied by withholding tax percentage.

STEP 6: Calculate the net pay as gross pay – withholding tax.

STEP 7: Display, with explanatory text, the hourly pay rate, the number of hours worked, the gross pay, the withholding tax and the net pay.

STEP 8: Save the file as computeNetPay.py

STEP 10: Compile and run your program

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| **Lab 4.5** |

**Objectives:**

* The nested if statement

You have been asked to create an application to play Rock Paper Scissors.

In the game Rock Paper Scissors, two players simultaneously choose one of three options: rock, paper, or scissors. If both players choose the same option, then the result is a tie. However, if they choose differently, the winner is determined as follows:

* Rock beats scissors, because a rock can break a pair of scissors.
* Scissors beats paper, because scissors can cut paper.
* Paper beats rock, because a piece of paper can cover a rock.

Create a game in which the computer randomly chooses rock, paper, or scissors (1, 2 or 3). Let the user enter a character, ‘r’, ‘p’, or ‘s’, each representing one of the three choices. Then, determine the winner. Ensure your program contains appropriate comments.

Follow the steps to create the program:

STEP 1: Create variables to hold the user’s choice and the random number

STEP 2: Generate the random number using the following code

randomNumber = random.randint(1,3)

STEP 3: Prompt and accept the user’s choice

STEP 4: Compare the user’s choice with the computers choice and display a message indicating the winner.

STEP 5: Save the file as rockPaperScissors.py

STEP 6: Compile and run your program