Python Skills Checklist

As you complete this booklet ticket the box which corresponds to the task.

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| --- | --- | --- | --- |
| Skill | Easy | Medium | Hard |
| Output to screen |  |  |  |
| Storing data in variables |  |  |  |
| Inputting Data |  |  |  |
| Calculations |  |  |  |
| Selections (IF) |  |  |  |
| Count controlled loops |  |  |  |
| Condition controlled loops |  |  |  |
| Lists |  |  |  |
| String handling |  |  |  |
| File writing |  |  |  |
| File reading |  |  |  |

Output to screen

**Easy task** – On the screen output the message “Hello World – how are you?”

**Medium task** – On the screen output the following:

Hello Everyone  
 How are you today?  
 I am very well!

**Hard task** – On the screen output “This is John’s first program” using an escape character.

Storing data in variables  
 **Easy task** – Store your name in a variable and then output it on the screen

**Medium task** – Store the current month in a variable and then output on the   
 screen along with the message: “The current month is……”

**Hard task** – On the screen save your name into one variable and your age into another. Output the variables onto the screen in the following way: “My name is Carl and I am 16 years old”

Inputting Data  
 **Easy task** – Ask the user for their favourite animal and save this in a variable   
 (with a suitable name). Output the variable onto the screen.

**Medium task** – Write a program that does the following:

What is your first name? John

What is your last name? Smith

Hello John Smith

**Hard task** – Accept a country from the keyboard and then its population. On the screen output the results in the following format:

Brazil has a population of 32000000 people.

Calculations  
 **Easy task** – Create a program that accepts two numbers from the keyboard   
 and then shows the result of adding them onto the screen.

**Medium task** – Write a program that does the following:

What is your first number? 12

What is your second number? 120

120 divided 12 equals 10

**Hard task** – Accept three numbers from the keyboard. Add the first 2 numbers together and the take away the third number squared. Show the answer on the screen.

Selection (using IF)  
 **Easy task** – Create a program that accepts a number from the keyboard. If the   
 number is larger than 100 the message “larger than 100” is shown   
 on the screen otherwise “less than 100 is shown”.

**Medium task** – Create a program that accepts a test score from the keyboard. If the score is larger than 20 the message “You achieved an A” is outputted, if it is between 10 and 19 the message “You achieved a C” is and less than 10 “You failed the test”.

**Hard task** – Create a program that accepts two numbers from the keyboard. The user is then asked to input if they would like to add, subtract, divide or multiply the numbers. That sum is then done with the answer shown on the screen.

Count Controlled Loop (For Loop)  
 **Easy task** – Use a count controlled loop to display the numbers 1 to 30 on the   
 screen.

**Medium task** – Use a count controlled loop to display the 10 times table on the screen up to 120.

**Hard task** – Create a program that accepts a number from the keyboard and then starts at 1 and counts to the number entered. The counting should be shown on the screen.

Condition Controlled Loop (While Loop)  
 **Easy task** – Write a program that takes in a letter and a number. Use a condition controlled loop to outputs the letter that number of times:

Example:

Please enter a letter: T

Please enter a number: 6

TTTTTT

**Medium task** – Accept two different numbers from the keyboard and then show the total of adding them together on the screen. Use a count controlled loop to keep doing this until the user types in “no”.

**Hard task** – Create a program that thinks of a random number between 1 and 100 then the program asks the user to guess it. Should the guess be too high or too low a suitable message is shown on the screen. Once the number is guessed correctly a well done message is displayed and the number of incorrect guesses is shown on the screen.

Lists (arrays)  
 **Easy task** – Write a program that accepts a list of 10 members names and   
 saves them in a list. The list should then be shown on the screen.

**Medium task** – Write a program that accepts meals and their costs from the keyboard. Two different lists are created one saves the meals and the other the meals costs. The contents are then shown on the screen in the format:

Cheese on Toast costs £1.99  
Lasagne costs £18.49

**Hard task** – Create a program that creates a list called “colours” which starts with 6 colours in it. The user is then given the option to add new colours, remove colours or show the current saved colour list on the screen. A condition controlled loop should be used to keep the program running.

String Handling  
 **Easy task** – Create a program that accepts a word from the keyboard and then   
says how many letters are in it.

**Medium task** – Create a program that accepts a phrase from the keyboard and then shows it on the screen in reverse.

**Hard task** – Create a program that accepts a phrase from the keyboard and then a letter. The number of times the letter appears in the phrase is then shown on the screen.

File Writing  
 **Easy task** – Create a program that accepts 5 hockey players names from the   
 keyboard and then writes these to a file called “hockey”.

**Medium task** – Create a program that accepts film names from the keyboard and saves these into a list. Once the user has finished entering films the list is written to a file.

**Hard task** – Create a program that accepts a list of numbers from the keyboard. Once the user finishes inputting numbers all those over 10 are written to a file called “largeNumbers”.

File Reading

Load notepad and create the following file. Make sure you save this as “data.txt” and it’s in the same folder as the python programs you create.  
10  
20  
30  
40  
50  
60

**Easy task** – Create a program that reads “data.txt” and outputs each number   
 onto the screen.

**Medium task** – Create a program that reads “data.txt” and adds up all the numbers in the file. The answer is then shown on the screen.

**Hard task** – Create a program that reads “data.txt” and adds up all the numbers in the file. The numbers are then written back to “data.txt” along with their total at the bottom.