

RESUME BUILDER

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16/06/2022

ICS4U

FINAL

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Final Description of Program

The Resume Builder Java program takes in information from the user and builds a customized resume to be displayed in the Java console. The user can either choose to select any category they would like to add from a pre-existing template, or they can create their own category from scratch.

There is not much guidance involved as the program's layout is mostly intuitive; each category and their corresponding questions are laid out plainly. Generally, to add a category, the user is to give short responses for questions asked by the program. These questions are then organized into a template. Each question is specific enough to not confuse or overwhelm the user.

Current Limitations of Program

- Occasionally when the program is formatting a String inputted by the user, it adds a line break directly before a space in the String, resulting in slightly awkward formatting
E.g. There is a space before "School", causing the line to look somewhat uneven:

Education

Maple High School 2019-2023
Honours student enrolled at Maple High School, aiming for Ontario Secondary School Diploma completion.

- The user can only specify how many categories they would like to include in their resume during its setup process.
 - The functionality to increment the category count post-resume setup was attempted, but it required the 2D category array to have an increased size. The array size is only set once it has been declared, and transferring the partially complete contents of one 2D array to another empty one requires extensive work, and may not even be possible. A substituted medium (e.g. ArrayList) would also not be viable, as that would be a foreign concept.
- This is not necessarily at the fault of the program itself, but when the resume is written to a .txt file, depending on the program used to open the file (Notepad on Windows, TextEdit on Mac), the borders on the rightmost edge of the resume can be formatted slightly unevenly. This is because programs like Notepad interpret space characters differently than TextEdit; on Notepad, a space is a thinner unicode than a regular character (as this is better for readability). TextEdit, on the other hand, displays the resume with the exact same formatting as the Java console, making the resume in the file look exactly as expected.

Table Outlining Implementation of Concepts Learned in the Course

Concept	Implementation in Program
Objects	<p>Where the concept was implemented: Objects are used in the summary, education and custom categories, and are a part of the 2D category array; an experience object is also used for the experience category.</p> <p>Concept usage: Each object stores the necessary information that is inputted by the user (e.g. lines, years, other values). This information is set in each object and retrieved using getter and setter methods, and is ultimately integral in the formatting of the resume display.</p>
Searching & Sorting	<p>Where the concept was implemented: Insertion sort is used after the user finishes entering their information in the experience category.</p> <p>Concept usage: After the user finishes making their entries for the experience category, the program asks the user if they would like to sort their categories reverse chronologically. If the user enters yes, the program uses insertion sort to organize each work/volunteer entry in order from most recently done to oldest.</p>
Multi-Dimensional Arrays	<p>Where the concept was implemented: There is a 2-dimensional category array that stores each category subclass. Moreover, a 2-dimensional array is also used to format the user's input for the skills category into point form.</p> <p>Concept usage: Each object within the 2D category array stores the necessary information set by the user. It is all organized into one greater category array for convenience sake; it is a useful mechanism to store all the information from a given category into one place for it to be conveniently modified and accessed. Moreover, for the information in the skills category, since a line of info contains a dot if it is the first line in the entry, it is not possible to store multiple copies of the two different line types into a single array (one type of line contains a dot, while another doesn't in a given entry); a 2-dimensional array must be created so that each column contains one of the 2 different line types, and each row stores the different entries entered by the user.</p>

<p>Data Structures</p>	<p>Where the concept was implemented:</p> <p>The queue data structure was used to store the 'custom' object that contains user-inputted entries.</p> <p>Concept usage:</p> <p>After the user is asked how many entries they would like to make for their custom category, a queue of that size is created and used to store each entry into a single 'custom' category object.</p>
<p>Inheritance & Polymorphism</p>	<p>Where the concept was implemented:</p> <p>Each specific subcategory class inherits from the parent category class. The experience category also inherits from the parent category class. However, unlike the experience class, the category classes (e.g. summary, education) use the "Category[]" declaration, making use of polymorphism.</p> <p>Concept usage:</p> <p>Considering how each category fundamentally uses the same concept, but slightly differentiates from each other, it only makes sense that each subcategory inherits from a parent category class, which contains the default variables that each category object should contain (i.e. String categoryName, String line). For instance, though each line of information from the experience category is stored in the category parent class, the company, address, year(s), etc. all follow a different format, and are instead taken in by the experience class.</p>
<p>File Input & Output</p>	<p>Where the concept was implemented:</p> <p>File reading is used when the sample resume is displayed to the user during the setup process. File writing is used during the setup process of the resume and when the user finishes their building of the resume.</p> <p>Concept usage:</p> <p>To display a sample of the resume in full to the user before they begin building their own, the sample file is read from, as this would take up less space in the main as printing the text. When the user begins building their resume, an empty .txt file is created, and is written to when the user finishes building their resume.</p>
<p>Recursion</p>	<p>Where the concept was implemented:</p> <p>When the user has a certain character limit they should be aware of, a method is called to recursively display a character count scale.</p>

Concept usage:

The method that displays a character count scale to the user, when called, displays a number – starting from 0, and ending at 9 – that is incremented before it is called again. This repeats until another counter reaches the number passed as the method's parameter (a.k.a the character limit). This is a viable way to show to the user as they are typing an entry, how many characters they have typed thus far.

Sample Run of Program

RESUME BUILDER

Press enter to continue.

```

                                John Doe

123-123-1234 • Placeholder, LI • johndoe123@domain.com

Summary
-----
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nullam dapibus
elit sed lacus scelerisque pulvinar. Pellentesque aliquet eros nec
condimentum molestie. Fusce posuere est at nisl rhoncus, in facilisis

Education
-----
Placeholder High School                                2019-2023
Currently enrolled at Placeholder High School, aiming for Placeholder
Secondary School Diploma (PSSD) completion.

Skills
-----
• Lorem ipsum dolor sit amet, consectetur adipiscing elit nullam dapibus
• Elit sed lacus scelerisque pulvinar pellentesque aliquet eros nec
• Condimentum molestie fusce posuere est at nisl rhoncus, in facilisis

Highlights
-----
• Lorem ipsum dolor                                • Nullam dapibus elit
• Sit amet                                          • Sed lacus scelerisque
• Consectetur adipiscing elit                      • Pulvinar pellentesque aliquet

Placeholder Experience
-----
Placeholder Volunteer                                2022
Company | Address
• Lorem ipsum dolor sit amet, consectetur adipiscing elit nullam dapibus
  elit sed lacus scelerisque pulvinar pellentesque aliquet eros

Other Interests
-----
• Lorem ipsum: dolor sit amet, consectetur adipiscing elit nullam dapibus
• Elit: sed lacus scelerisque pulvinar pellentesque aliquet ero
  
```

Above is a preview of the resume you'll be building.

To begin building your own, you'll need to answer a few questions to set up the resume header.

Disclaimer #1: Questions are case-sensitive.

Disclaimer #2: Your resume should not exceed 53 lines; keep it brief and to the point!

Enter first and last name (e.g. John Doe): Farhaan Ali

Enter phone number (e.g. 123-456-7890): 437-228-0094

Enter city and province/state (e.g. City, ST): Woodbridge, ON

Enter personal email (e.g. johndoe2005@gmail.com): farhaansyedali2005@gmail.com

Here's what you've got so far:

```

                                Farhaan Ali

437-228-0094 • Woodbridge, ON • farhaansyedali2005@gmail.com
  
```

CATEGORIES (DUPLICATES ALLOWED)

- Summary


```

ronment.

Education
-----
Maple High School                2019-2023
Honours student enrolled at Maple High School, aiming for OSSD completion.

```

Lines used: 22 of 53

```

ADD A CATEGORY
[1] - Summary
[2] - Education
[3] - Skills
[4] - Highlights
[5] - Work/Volunteer/Relevant Experience
[6] - Other Interests
[7] - Competitions
[8] - Custom
OTHER OPTIONS
[9] - View resume
[10] - Remove a category
[11] - Finish building resume (premature)

```

Select an option (2/5 categories added): 3

Skills

```

- Can work effectively independently and follow instructions precisely
- Demonstrates strong time management skills by balancing extracurricular
work and hobbies with school work to consistently meet deadlines
- Consistently interacts with others to gain a full perception of tasks and
environments

```

Tip: It is generally not advisable to include both 'skills' and 'highlights' categories in the same resume.
Are you sure you want to include this category? (Y/N) y

CATEGORY 3: SKILLS

How many skills will you be entering? (1-6): 2

Enter the top 2 skills you can offer for the job.

(E.g. Can work effectively independently/Demonstrates strong time management skills by balancing extracurricular work with school work, etc.)

Enter skill #1 (this should be your most valuable skill):

```

- Can work effectively independently and follow instructions precisely

```

Enter skill #2:

```

- Consistently interacts with others to gain a full perception of tasks and environments

```

Here's what you've got so far:

```

-----
Farhaan Ali

437-228-0094 · Woodbridge, ON · farhaansyedali2005@gmail.com

Summary
-----
Hard-working, motivated student at Maple High School who is seeking to acquire a position that enables use of strong leadership and organizational skills. I am detail-oriented, communicative, and can work in a fast-paced environment.

Education
-----
Maple High School                2019-2023
Honours student enrolled at Maple High School, aiming for OSSD completion.

Skills
-----
- Can work effectively independently and follow instructions precisely
- Consistently interacts with others to gain a full perception of tasks and environments

```

Lines used: 29 of 53

```

ADD A CATEGORY
[1] - Summary
[2] - Education
[3] - Skills
[4] - Highlights
[5] - Work/Volunteer/Relevant Experience
[6] - Other Interests
[7] - Competitions
[8] - Custom
OTHER OPTIONS
[9] - View resume
[10] - Remove a category
[11] - Finish building resume (premature)

```

Select an option (3/5 categories added): 10

CATEGORIES

```

[1] - Summary
[2] - Education
[3] - Skills
[4] - Highlights
[5] - Other Interests
[6] - Competitions
[7] - Custom
[8] - Exit

```

Select category to remove: 3

Category was successfully removed.

Lines remaining: 22 of 53

```

ADD A CATEGORY
[1] - Summary
[2] - Education
[3] - Skills
[4] - Highlights
[5] - Work/Volunteer/Relevant Experience
[6] - Other Interests
[7] - Competitions
[8] - Custom
OTHER OPTIONS
[9] - View resume
[10] - Remove a category
[11] - Finish building resume (premature)

```


Select an option (2/5 categories added): 9

Here's what you've got so far:

Farhaan Ali

437-228-0094 · Woodbridge, ON · farhaansyedali2005@gmail.com

Summary

Hard-working, motivated student at Maple High School who is seeking to acquire a position that enables use of strong leadership and organizational skills. I am detail-oriented, communicative, and can work in a fast-paced environment.

Education

Maple High School2019-2023
Honours student enrolled at Maple High School, aiming for OSSD completion.

Lines used: 22/53

- ADD A CATEGORY
- [1] - Summary
 - [2] - Education
 - [3] - Skills
 - [4] - Highlights
 - [5] - Work/Volunteer/Relevant Experience
 - [6] - Other Interests
 - [7] - Competitions
 - [8] - Custom
- OTHER OPTIONS
- [9] - View resume
 - [10] - Remove a category
 - [11] - Finish building resume (premature)

Select an option (2/5 categories added): 4

Highlights

- Lorem ipsum dolor
- Sit amet
- Consectetur adipiscing elit
- Nullam dapibus elit
- Sed lacus scelerisque
- Pulvinar pellentesque aliquet

Are you sure you want to include this category?
Tip: It is generally not advisable to include both 'skills' and 'highlights' categories in the same resume. (Y/N) y

CATEGORY 3: HIGHLIGHTS

Enter 6 of your best qualities (e.g. Committed/Fast learner/Stays composed under pressure)

Character count scale (35 char. max):

Quality 1:
0123456789012345678901234567890123 X
Committed

Quality 2:
0123456789012345678901234567890123 X
Proactive

Quality 3:
0123456789012345678901234567890123 X
Motivated

Quality 4:
0123456789012345678901234567890123 X
Stays composed under pressure

Quality 5:
0123456789012345678901234567890123 X
Observational

Quality 6:
0123456789012345678901234567890123 X
Fast learner

Here's what you've got so far:

Farhaan Ali

437-228-0094 · Woodbridge, ON · farhaansyedali2005@gmail.com

Summary

Hard-working, motivated student at Maple High School who is seeking to acquire a position that enables use of strong leadership and organizational ski-

<p>lls. I am detail-oriented, communicative, and can work in a fast-paced environment.</p> <p>Education</p> <hr/> <p>Maple High School 2019-2023 Honours student enrolled at Maple High School, aiming for OSSD completion.</p> <p>Highlights</p> <hr/> <ul style="list-style-type: none"> Committed Motivated Observational Proactive Stays composed under pressure Fast learner

Lines used: 29 of 53

ADD A CATEGORY

- [1] - Summary
- [2] - Education
- [3] - Skills
- [4] - Highlights
- [5] - Work/Volunteer/Relevant Experience
- [6] - Other Interests
- [7] - Competitions
- [8] - Custom

OTHER OPTIONS

- [9] - View resume
- [10] - Remove a category
- [11] - Finish building resume (premature)

Select an option (3/5 categories added): 5

Experience

Instruction Manual Designer	2021
Exceed Robotics Address	
<ul style="list-style-type: none"> Wrote and designed an instruction manual detailing the steps to assemble a 6-legged walking robot for children aged 8-10 	

Are you sure you want to include this category (Y/N)? y

[1] - Work Experience
[2] - Volunteer Experience
[3] - Relevant Experience
[4] - Experience

What type of experience will you enter? 2

How many entries will you make? (1-5) 2

CATEGORY 4: VOLUNTEER EXPERIENCE

Entry #1:

Enter organization name (e.g. Lacoste): Exceed Robotics

Are you currently working/volunteering at the company (Y/N)? n

What year did you start working/volunteering at this organization (e.g. 2020)? 2021

What year did you stop working/volunteering at this organization (e.g. 2022)? 2021

Enter address you worked/volunteered at (e.g. 123 Placeholder Blvd): 248 Steeles Ave W, Unit 6

Enter position you worked/volunteered as (e.g. Sales Associate): Instruction Manual Designer

Enter # of bullet points you will use for description (1-5): 1

Enter bullet pt. #1 of description:

- Wrote and designed an instruction manual detailing the steps to assemble a 6-legged walking robot for children aged 8-10.

Here's what you've got so far:

<p>Volunteer Experience</p> <hr/> <p>Instruction Manual Designer 2021</p> <p>Exceed Robotics 248 Steeles Ave W, Unit 6</p> <ul style="list-style-type: none"> Wrote and designed an instruction manual detailing the steps to assemble a 6-legged walking robot for children aged 8-10.
--

Entry #2:

Enter organization name (e.g. Lacoste): Vellore Village Community Centre

Are you currently working/volunteering at the company (Y/N)? n

What year did you start working/volunteering at this organization (e.g. 2020)? 2022

What year did you stop working/volunteering at this organization (e.g. 2022)?

Enter address you worked/volunteered at (e.g. 123 Placeholder Blvd): 1 Villa Royale Ave

Enter position you worked/volunteered as (e.g. Sales Associate): Photographer for Community Centre Peace Walk

Enter # of bullet points you will use for description (1-5): 2

Enter bullet pt. #1 of description:

- Served as the peace walk's official photographer.

Enter bullet pt. #2 of description:

- Demonstrated the ability to follow instructions effectively and helped administer the event.

Here's what you've got so far:

<p>Volunteer Experience</p> <hr/> <p>Instruction Manual Designer 2021</p> <p>Exceed Robotics 248 Steeles Ave W, Unit 6</p> <ul style="list-style-type: none"> Wrote and designed an instruction manual detailing the steps to assemble a 6-legged walking robot for children aged 8-10. <p>Photographer for Community Centre Peace Walk 2022</p> <p>Vellore Village Community Centre 1 Villa Royale Ave</p> <ul style="list-style-type: none"> Served as the peace walk's official photographer. Demonstrated the ability to follow instructions effectively and helped administer the event.
--

RECOMMENDED: Would you like to sort your entries in order of most recently done (Y/N)? y

Here's what you've got so far:

Farhaan Ali

437-228-0094 · Woodbridge, ON · farhaansyedali2005@gmail.com

Summary

Hard-working, motivated student at Maple High School who is seeking to acquire a position that enables use of strong leadership and organizational skills. I am detail-oriented, communicative, and can work in a fast-paced environment.

Education

Maple High School 2019-2023
Honours student enrolled at Maple High School, aiming for OSSD completion.

Highlights

· Committed	· Proactive
· Motivated	· Stays composed under pressure
· Observational	· Fast learner

Volunteer Experience

Photographer for Community Centre Peace Walk 2022
Vellore Village Community Centre | 1 Villa Royale Ave
· Served as the peace walk's official photographer.
· Demonstrated the ability to follow instructions effectively and helped administer the event.

Instruction Manual Designer 2021
Exceed Robotics | 248 Steeles Ave W, Unit 6
· Wrote and designed an instruction manual detailing the steps to assemble-

e a 6-legged walking robot for children aged 8-10.

Competitions

• UWaterloo's Euclid (2022): Did some math. Had some fun, I guess.

New Concept Description

The `StringBuilder` import served as the new/foreign concept used in this program. It was integral in the resume-formatting process, as without it, (e.g.) centring text in the resume would not have been possible. This import allowed me to fetch the `String` outputs from for loops and add them to a `String`. This was useful when I had to format the user input into the resume output. To give another example, when removing a category, the resume, which is stored within a `String` variable, would have to be split for the selected lines to be removed. It is not possible to reassemble a `String` after it has been split without an import like this.

Reflection Questions

o How did your projected timelines match up with your actual timelines? Write a paragraph on what went well, and what were some hiccups along your programming process.

Though my projected timelines corresponded well with my actual timelines in the early stages of the project, as the programming for each individual category began, and as the project progressed, the initial plans did not reflect any of the experimental timelines; the code for certain categories such as work experience (and skills, surprisingly), often took significantly more time to implement than expected. Despite a smooth resume sample-creation process that lined up perfectly with the projected timelines, a roadblock was immediately hit when I realized I had to calculate and manually program the formatting of the user input due to my lack of ability to apply new concepts outside of the `StringBuilder` import. Moreover, the dates that went with the 'final touches' portion of the projected timelines were completely evaded in the programming process, as some of my 'final touches' took days to implement – and would sometimes not even be functional. One such example includes the attempted increment-the-category-count functionality, which after a day's worth of effort in attempting to implement it, did not pan out. Moreover, the remove category functionality was not a part of the initial plan, but its implementation took a day on its own.

o What are you most proud of in this project?

For as restricting as the Java console can be sometimes, I can assuredly say that I am most proud of my formatting of the resume. Though the formatting process of the user-inputted text was as complicated as I expected, seeing the end result was very fulfilling. The end result looks quite visually appealing for a resume generated in the Java console, and it follows the general guidelines that a high school student's resume should.

o What did you find to be most frustrating while working on the project?

As challenging as it occasionally was to format the user's input into the resume, the most frustrating part of making the program was by far the exception-handling. Not only was it monotonous to ensure the program responds effectively to invalid input given by the user for each individual question, but dealing with the exceptions that could arise when formatting the information was quite time-consuming (e.g. knowing when to and not to add line breaks to text, ensuring certain lines don't exceed character limits, etc.)

o What would you like to add to your program in the future?

As fun of an experiment as making this program was, it is by no means a viable resume builder for professional applications (yet), simply because it relies on the Java console as its output medium. In the future, I would definitely consider revamping this project with the Java GUI involved for both the input and output of the resume (input too, because of the inconvenience that a line-by-line Q&A-style information-gathering method poses).

o What advice would you give to someone starting to work on this project?

If one were to go into this project with the exact same resources and idea in mind, I would highly suggest they learn the workings of the `StringBuilder` import as soon as they can. When entrusting the Java console to display a complex output, regardless of if the `print format` import is involved or not, it would not be possible to assemble a large `String` using fragments gathered from user input without such an import.