A Recommendation System for Students Career Selection

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Main Objective

• The main purpose behind this research is to develop a recommendation system for students’ career selection.
Problem

• Students enrol into higher learning institutions only to realize that they have chosen the wrong course to pursue, they lose on time and money.

• Selection of the wrong career means that there is a mismatch between the student’s potential and a suitable career.
Did you know your career before choosing your undergraduate course?

20 responses

- Yes: 8 (40%)
- No: 13 (65%)
Personality

- According to (Holland, 1997) the theory of career choice, is weighted by three factors;
  
  i. A clear understanding of oneself: interests, aptitude, abilities, resources, ambitions, personality and limitations.

  ii. Knowledge on the career exploration; a clear understanding on the requirements and conditions of success.

  iii. Ability to make an honest decision based on the above factors.
Holland’s theory
WHAT'S YOUR CAREER TYPE?
<table>
<thead>
<tr>
<th>R</th>
<th>Realistic</th>
<th>A</th>
<th>Artistic</th>
<th>E</th>
<th>Enterprising</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Working on cars.</td>
<td>15</td>
<td>Working independently.</td>
<td>29</td>
<td>Setting goals for myself.</td>
</tr>
<tr>
<td>2</td>
<td>Working outdoors.</td>
<td>16</td>
<td>Being creative.</td>
<td>30</td>
<td>Taking on new responsibilities.</td>
</tr>
<tr>
<td>3</td>
<td>Taking care of animals.</td>
<td>17</td>
<td>Creative writing.</td>
<td>31</td>
<td>Selling things.</td>
</tr>
<tr>
<td>4</td>
<td>Cooking.</td>
<td>18</td>
<td>Acting in plays.</td>
<td>32</td>
<td>Giving speeches.</td>
</tr>
<tr>
<td>5</td>
<td>Building things.</td>
<td>19</td>
<td>Drawing.</td>
<td>33</td>
<td>Being a leader.</td>
</tr>
<tr>
<td>6</td>
<td>Putting things together or assembling things.</td>
<td>20</td>
<td>Playing instruments or singing.</td>
<td>34</td>
<td>Influencing or persuading others.</td>
</tr>
<tr>
<td>7</td>
<td>Being practical.</td>
<td>21</td>
<td>Reading about art and music.</td>
<td>35</td>
<td>Starting my own business.</td>
</tr>
<tr>
<td><strong>I</strong></td>
<td>Investigative</td>
<td><strong>S</strong></td>
<td>Social</td>
<td><strong>C</strong></td>
<td>Conventional</td>
</tr>
<tr>
<td>8</td>
<td>Doing puzzles.</td>
<td>22</td>
<td>Working in teams.</td>
<td>36</td>
<td>Organising things, files, and desks/offices.</td>
</tr>
<tr>
<td>9</td>
<td>Science.</td>
<td>23</td>
<td>Healing people.</td>
<td>37</td>
<td>Following instructions.</td>
</tr>
<tr>
<td>10</td>
<td>Figuring out how things work.</td>
<td>24</td>
<td>Learning about other cultures.</td>
<td>38</td>
<td>Working 8 hours per day in an office.</td>
</tr>
<tr>
<td>12</td>
<td>Conducting experiments.</td>
<td>26</td>
<td>Getting into discussions about issues.</td>
<td>40</td>
<td>Filing or typing.</td>
</tr>
<tr>
<td>13</td>
<td>Working with numbers or charts.</td>
<td>27</td>
<td>Teaching or training peoples.</td>
<td>41</td>
<td>Keeping records of my work.</td>
</tr>
<tr>
<td>14</td>
<td>Solving maths.</td>
<td>28</td>
<td>Helping people solve their problems.</td>
<td>42</td>
<td>Working in an office.</td>
</tr>
</tbody>
</table>
Algorithm

- Each question is assigned a weight of 1 and a group. There are up to six groups.
  - Strongly Agree (5)
  - Agree (3)
  - Neutral (0)
  - Disagree (-3)
  - Strongly Disagree (-5)

The user chooses prompt values for any number of questions.
- System calculates value points on each question using the formula
  \[ \text{value point} = 1 \times \text{selected prompt value} \]
- The selected questions are then regrouped into their respective groups and an array of running sum of value points for each group found i.e.
  - array of groups = [total questions in group A, ....]
  - array of points = [sum for group A, sum for group B, ....]

- System then finds the top 3 values from the array
- It recommends careers from the database that match these groups.
- Selects up to 12 careers
Your score is 14

Recommended Career(s):
Career: Game Writer (Video Game Developer), Variety Performer; Facet: AEI
Career: Industrial Health Engineers, Industrial Hygiene; Facet: EIC
Career: Airline Flight Attendants, Barber, Chef; Chief; Facet: ESR
Career: Animal Behaviorists, Bio-informaticians, Bio-process; Facet: IAR
Career: Boatswains, chief Technicians, Technical Supervisors; Facet: ERC
Career: Copywriters, Dance therapists, Painter, Radio and TV; Facet: ASI
Career: Fiction Writers, Medical Illustrator, Writers; Facet: AIE
Career: Costumer Designer, Fashion Designer and Image Consultants; Facet: ASR
Career: Auditor, Training & Development Specialist (apprentice); Facet: EIS
Career: zoologist, biologist, statistician, pathologist; Facet: IRE
Career: Acupuncturists, Audiologists, Dentist, Dermatologists; Facet: ISR
Career: Animators (video games), Dancer (ethnic, ballet); Facet: AER

You are extroverted!

On the opposite side of the coin, people who are extroverted are energized by people. They usually enjoy spending time with others, as this is how they recharge from time spent alone focusing or working hard.

I like how this extrovert explains the way he/she gains energy from being around other people:

When I am among people, I make eye contact, smile, maybe chat if there’s an opportunity (like being stuck in a long grocery store line). As an extrovert, that’s a small ‘ping’ of energy, a little positive moment in the day.