



SKILLS AND TALENTS MANAGEMENT SYSTEM

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INTRODUCTION

Our project, Skills and Talents Management System is a database that includes data about the students at university of every department. This database will help us to keep a track of all the students and the skills related to them in an organized manner.

PROBLEM STATEMENT

Data about students such as name, contact, depart etc. is managed by every educational sector. But when it comes to skills of an individual universities are usually not familiar with the different type of talents that a student can't have. This leads to ignorance of the hidden talents of the students.

PROPOSE SOLUTION

To overcome this problem, we have gathered the data of skills of students of different departments. With their basic information such as SHUID, name, contact, address etc we have introduced a skillID as well that uniquely identifies the skill of each student.



NORMALISATION

→ FIRST NORMAL FORM (AFTER EXPANDING MULTIVALUED DATA)

| First Name | Last Name | SHU ID (e.g. F19csc31) | Department | Age | Gender | Email | Ac Contact N | Reside Skill ID | Skills | Experience (in years) | Device | [|
|----------------|-----------|------------------------|------------------------|-----|--------|-----------|--------------|-----------------|---------------------|-----------------------|--------|---|
| Nabeel | Khan | F19CSC13 | Computer Science | 22 | Male | | 03282721 | Central | 2 Graphic Designing | | | |
| | | F19CSC13 | | | | | | | 10 Coding | | | |
| Tooba | Bibi | F19csc08 | Computer Science | 20 | Female | toobabib | 03312497 | Central | 5 Singing | | | |
| | | F19csc08 | | | | | | | 10 Coding | | | |
| Abdul Basit | Khan | F19CSC06 | Computer Science | 22 | Male | basit567 | 03343459 | Malir | 8 Debating | | | |
| | | F19CSC06 | | | | | | | 10 Coding | | | |
| Aliyaan | Ahmed | F19CSC29 | Computer Science | 21 | Male | aliyaan.a | 03443661 | East | 2 Graphic Designing | | | |
| Muhammad Hamza | Siddique | F20BAC18 | Accounting and Finance | 21 | Male | muhamir | 03143069 | Korangi | 2 Graphic Designing | | | |

| Domain | Experience (in years) | Preferred Application | Domain | Experience (in years) | Preferred Application | Specialty | Experience (in years) | Domain | Language |
|--------|-----------------------|-----------------------|---------------------------------------|-----------------------|-----------------------|-----------|-----------------------|--------|----------|
| | 3 | Illustrator | Posters / Business Cards / etc | | | | | | |
| | | | | | | | | | English |
| | | | | | | | | | |
| | | 2 Photoshop | Posters / Business Cards / etc | | | | | | |
| | | 3 Photoshop | Picture manipulation / colour grading | | | | | | |

| Language | Type of poetry | Art Major | Experience (in years) | Type of sketching: | Type of Painting | Experience (in years) | Language | Experience (in years) | Audience Size |
|----------|----------------|-----------|-----------------------|--------------------|------------------|-----------------------|-----------|-----------------------|---------------|
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | 5 English | | |
| | | | | | | | | | |
| | | | | | | | | | |

| Types | Coding level |
|-------|--------------|
| | Advanced |
| | Advanced |
| | Advanced |
| | Advanced |

→ SECOND NORMAL FORM

Composite key: SHU ID + Skill ID

Dependencies:

1. Students Information Table:

SHU ID -> First Name, Last Name, Department, Age, Gender, Email Address, Residential District, Contact Number

| First Name | Last Name | SHU ID (e.g. | Department | Age | Gender | Email Address | Residential District | Contact Number |
|----------------|-----------|--------------|------------|-----|--------|------------------------------|----------------------|----------------|
| Tooba | Bibi | F19csc08 | Computer | 20 | Female | toobabibi29@gmail.com | Central | 03312497396 |
| Abdul Basit | Khan | F19CSC06 | Computer | 22 | Male | basit56700@gmail.com | Malir | 03343459064 |
| Aliyaan | Ahmed | F19CSC29 | Computer | 21 | Male | aliyaan.ahmed46376@gmail.com | East | 03443661549 |
| Muhammad Hamza | Siddique | F20BAC18 | Accounting | 21 | Male | muhammadhamzaa09@gmail.com | Korangi | 03143069901 |
| Abdul | Subhan | F18CSC32 | Computer | 21 | Male | Karachi South | South | 03242597733 |
| Arsal | Alam | F19CSC25 | Computer | 20 | Male | arsalsyed374@gmail.com | East | 03404761887 |

2. Students Skills Table

SHU ID, Skill ID (Composite key)

| SHU ID (e.g. F19csc31) | Skill ID |
|------------------------|----------|
| F19CSC13 | 2 |
| F19CSC13 | 10 |
| F19csc08 | 5 |
| F19csc08 | 10 |
| F19CSC06 | 8 |
| F19CSC06 | 10 |
| F19CSC29 | 2 |

3. Skills Table

Skill ID -> Skill

| Skill ID | Skill |
|----------|-------------------|
| 1 | Photography |
| 2 | Graphic Designing |
| 3 | Video Editing |
| 4 | Content Writing |
| 5 | Singing |
| 6 | Poetry |
| 7 | Art |
| 8 | Debating |
| 9 | Vlogging |
| 10 | Programming |

4. Photography Table

SHU ID -> Skill ID, Skills, Experience (in years), Device, Domain

| SHU ID | Skill ID | Skills | Experience | Device | Domain |
|----------|----------|------------|------------|--------|-----------------------|
| F19CSC25 | 1 | Photograph | 1 | DSLR | Portrait Photography |
| F19csc37 | 1 | Photograph | 2 | Mobile | Portrait Photography |
| F19CSC10 | 1 | Photograph | 4 | DSLR | Product Photography |
| S20BAC04 | 1 | Photograph | 2 | Mobile | Landscape Photography |
| F19CSC22 | 1 | Photograph | 0 | Mobile | Portrait Photography |
| F21CSC02 | 1 | Photograph | 2 | DSLR | Portrait Photography |
| S21BME09 | 1 | Photograph | 1 | DSLR | Portrait Photography |

5. Graphic Designing Table

SHU ID -> Skill ID, Skills, Experience (in years), Preferred App, Domain

| SHU ID | Skill ID | Skills | Experience | Preferred / Domain |
|----------|----------|-------------------|------------|---|
| F19CSC13 | 2 | Graphic Designing | 3 | Illustrator Posters / Business Cards / etc |
| F19CSC29 | 2 | Graphic Designing | 2 | Photoshop Posters / Business Cards / etc |
| F20BAC18 | 2 | Graphic Designing | 3 | Photoshop Picture manipulation / colour grading |
| F19CSC36 | 2 | Graphic Designing | 1 | Photoshop Logo Designing |
| S20BBA03 | 2 | Graphic Designing | 2 | Illustrator Posters / Business Cards / etc |
| F20CSC13 | 2 | Graphic Designing | 1 | Canva Posters / Business Cards / etc |
| F21CSC04 | 2 | Graphic Designing | 1 | Illustrator Logo Designing |

6. Video Editing Table

SHU ID -> Skill ID, Skills, Experience (in years), Preferred App, specialty

| SHU ID | Skill ID | Skills | Experience | Preferred Application | Specialty |
|----------|----------|------------|------------|-----------------------|-----------------------------------|
| F20CSC47 | 3 | Video Edit | 3 | Kinemaster | Basics (clipping and merging etc) |
| F20CSC19 | 3 | Video Edit | 1 | After Effects | Animation |
| F21CSC03 | 3 | Video Edit | 1 | Filmora | Basics (clipping and merging etc) |
| S21CSC07 | 3 | Video Edit | 2 | Adobe Premier Pro | Basics (clipping and merging etc) |
| F18BAC13 | 3 | Video Edit | 1 | Adobe Premier Pro | Basics (clipping and merging etc) |
| F19CSC11 | 3 | Video Edit | 1 | After Effects | Animation |

7. Content Writing Table

SHU ID -> Skill ID, Skills, Experience (in years), Domain

| SHU ID | Skill ID | Skills | Experience | Domain |
|----------|----------|-----------------|------------|-----------------------------|
| S20BBA08 | 4 | Content Writing | 2 | Social Media Content Writer |
| S20BBA12 | 4 | Content Writing | 1 | Social Media Content Writer |
| F19BBA03 | 4 | Content Writing | 0 | Blogging |
| S21PHM44 | 4 | Content Writing | 1 | Blogging |
| F18CSC43 | 4 | Content Writing | 1 | News Articles |
| F19CSC04 | 4 | Content Writing | 1 | Social Media Content Writer |

8. Singing Table

SHU ID -> Skill ID, Skills, Language, Instrument

| SHU ID | Skill ID | Skills | Language | Instrument |
|----------|----------|---------|------------------------|------------|
| F19csc08 | 5 | Singing | English | |
| F19CSC17 | 5 | Singing | Urdu | Guitar |
| S21CSC11 | 5 | Singing | Urdu | Guitar |
| F20BBA04 | 5 | Singing | English | Flute |
| S20BME42 | 5 | Singing | English, urdu, Korean. | |

9. Poetry Table

SHU ID -> Skill ID, Skills, Language, Type

| SHU ID | Skill ID | Skills | Language | Type of poetry |
|----------|----------|--------|----------|----------------------|
| S21BME17 | 6 | Poetry | Urdu | Ghazal |
| S21PHM82 | 6 | Poetry | Urdu | Ghazal |
| F19BSC10 | 6 | Poetry | Urdu | Ghazal |
| F19CSC07 | 6 | Poetry | Pashto | Narrative |
| F19CSC18 | 6 | Poetry | English | whatever i feel like |
| F19BBA01 | 6 | Poetry | Urdu | Ghazal |

10. Art Table

SHU ID -> Skill ID, Skills, Art Major, Experience, Sketching type, Painting type

| SHU ID | Skill ID | Skills | Art Major | Experience | Type of sketching: | Type of Painting |
|----------|----------|-------------|-----------|------------|--|---|
| F20BBA31 | | 7 Art Major | Painting | 2 | | Calligraphy painting, abstract painting |
| S21CSC01 | | 7 Art Major | Sketching | 0 | | |
| S20BME35 | | 7 Art Major | Painting | 10 | | Nature |
| F21CSC18 | | 7 Art Major | Painting | 2 | | Nature, Calligraphy |
| F21CSC24 | | 7 Art Major | Painting | 3 | Nature, art drawing s | Impressionism, abstract art, |
| S21BME26 | | 7 Art Major | Sketching | 0 | Every type of sketching except human sketching | |

11. Debating Table

SHU ID -> Skill ID, Skills, Experience, Language

| SHU ID | Skill ID | Skills | Experience | Language |
|----------|----------|------------|------------|----------|
| F19CSC06 | | 8 Debating | 5 | English |
| F18CSC32 | | 8 Debating | 2 | Urdu |
| F20bac06 | | 8 Debating | 2 | English |
| S21BSC04 | | 8 Debating | 5 | Both |
| F20BBA07 | | 8 Debating | 4 | English |

12. Vlogging Table

SHU ID -> Skill ID, Skills, Experience (in years), Audience, Type

| SHU ID | Skill ID | Skills | Experience | Audience Size | Types |
|----------|----------|------------|------------|---------------|-----------------|
| F20BBA09 | | 9 Vlogging | 0 | .. | Daily lifestyle |

13. Programming Table

SHU ID -> Skill ID, Skills, Coding level

| SHU ID | Skill ID | Skills | Coding level |
|----------|----------|-----------|--------------|
| S21CSC01 | | 10 Coding | Advanced |
| F21CSC02 | | 10 Coding | Advanced |
| S20BME35 | | 10 Coding | Basic |
| F20CSC47 | | 10 Coding | Advanced |
| S21BME17 | | 10 Coding | Basic |
| F20CSC19 | | 10 Coding | Advanced |
| F21CSC18 | | 10 Coding | Advanced |

7 STEPS TO DESIGN A DATABASE

1. **Determining the purpose:** Planning this database would help me to organize skills of students in the university.
2. **Find and organize the information required:** I would need information about the Student Name, SHU_ID, skills or talents, contact, address, gender
3. **Divide the information into table:**
 - Decide your subjects
 - Students
 - Skills
4. **Turn information into columns:**
 - StudentsInfo(Fname, Lname, SHU_ID, Department, Age, Gender, Contact, Residential_Address, Email_Address)
 - StudentSkill(SHU_ID, Skill_ID)
 - Skills(Skill_ID, Skills)
 - Photography(SHU ID, Skill ID, Skills, Experience, Device, Domain)
 - GraphicDesigning(SHU ID, Skill ID, Skills, Experience, Preferred, Application, Domain)
 - VideoEditing(SHU ID, Skill ID, Skills, Experience, Preferred Application, Specialty)
 - ContentWriting(SHU ID, Skill ID, Skills, Experience, Domain)
 - Singing(SHU ID, Skill ID, Skills, Language, Can you play an instrument? If yes:)
 - Poetry(SHU ID, Skill ID, Skills, Language, Type of poetry)
 - Art(SHU ID, Skill ID, Skills, Art Major, Experience, Type of sketching, Type of Painting)
 - Debating(SHU ID, Skill ID, Skills, Experience, Language)
 - Vlogging(SHU ID, Skill ID, Skills, Experience, Audience Size, Types)
 - Coding(SHU ID, Skill ID, Skills, Coding level)
5. **Set the Primary keys:**
 - StudentInfo -> SHU_ID
 - Skills -> Skill_ID
 - StudentSkill -> SHU_ID + Skill_ID
 - Photography -> SHU_ID
 - GraphicDesigning -> SHU_ID
 - VideoEditing -> SHU_ID
 - ContentWriting-> SHU_ID

- Singing -> SHU_ID
- Poetry -> SHU_ID
- Art -> SHU_ID
- Debating -> SHU_ID
- Vlogging -> SHU_ID
- Coding -> SHU_ID

6. Setup the table relationships:

- StudentInfo----StudentSkills
one to many
- Skills-----StudentSkills
one to many
- StudentInfo----Photography
one to one
- StudentInfo----GraphicDesigning
one to one
- StudentInfo----VideoEditing
one to one
- StudentInfo----ContentWriting
one to one
- StudentInfo----Singing
one to one
- StudentInfo----Poetry
one to one
- StudentInfo----Art
one to one
- StudentInfo----Debating
one to one
- StudentInfo----Vlogging
one to one
- StudentInfo----Coding
one to one

7. Entity Relationship Diagram

