





Final Year Project Showcase Batch-2017 Year 2021

Department: Biomedical Engineering		Programme: Biomedical Engineering	
1	Project Idea	Design of an Assistive Stabilizing Spoon for Parkinsonism	
2	Process	Using Servo motors to stabilize tremors in patients sensed by IMU sensor.	
3	Outcome	User (with tremors) is able to eat food independently without any assistance.	
4	Evidence (Theoretical Basis)	People living with Parkinson's disease or essential tremors in the limbs experience difficulty in carrying out day-to-day activities. In order to improve their quality of life, various assistive devices aid them in performing their activities such as walking, maintaining posture, eating, etc. Similar assistive devices for independent eating include ELI spoon and liftware spoon which utilize different and costly mechanisms to achieve the same outcome as our project.	
5	Competitive Advantage or Unique Selling Proposition (Cost Reduction, Process improvement, Attainment of any SDG (Sustainable Development Goal), increase of market share or capturing new market or having superior performance over a competitor. In summary, any striking aspect of the project that compels the industry to invest in FYP or purchase it. Some detailed description is required in terms of how, why when what. You can select one or more from the following dropdown and delete the rest of them). Please keep relevant options, delete the rest of them, and correct the sequence		
a	Cost Reduction of Existing Product	~\$138 to \$200 reduced (Cost of our spoon: \$58)	
b	Process Improvement which Leads to Superior Product or Cost Reduction, Efficiency Improvement of the Whole Process (e.g. What is the issue is current process and what improvement you suggests)	The current issues were delayed response which can be improved by incorporating (Proportional Integral Derivative) PID controller into design.	
c	Attainment of any SDG (e.g. How it is achieved and why it is necessary for the region)	SDG#9 Industry, Innovation and Infrastructure Support domestic technology development, research and innovation in developing countries, including by ensuring a conducive policy environment for, inter alia, industrial diversification and value addition to commodities. It is necessary for improving the well-being of people through use of innovative technology.	
d	Expanding of Market share (e.g. how it expand and what is the problem with the current market)	The current National market does not manufacture this product. It is imported from international market at a costly price.	
e	Any Environmental Aspect (e.g. carbon reduction, energy-efficient, etc.)	It is battery powered and is energy-efficient.	
6	Target Market (Industries, Groups, Individuals, Families, Students, etc) Please provide some	People living with Parkinson's Disease.	

	detail about the end-user of the product, process, or service	People having essential tremors that disrupts their eating activities.
7	Team Members (Names & Roll No.)	<p>Syed Baqar Hasan (BM-17055)</p> <p>Hassaan Akhtar Ansari (BM-17053)</p> <p>Hasham Bin Ayaz (BM-17060)</p> <p>Afif Ahmed Sharfi (BM-17059)</p>
8	Supervisor Name	Mustafain Ali
9	Supervisor Email Address	mustafainali@neduet.edu.pk
10	Pictures (If any)	 <p><i>Figure 1 Prototype version of the assistive stabilizing spoon</i></p>  <p><i>Figure 2 PCB design for the assistive spoon.</i></p>
11	Video (If any)	